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IMPACT OF LIBERALIZATION ON KEY MARKETS IN SUB-SAHARAN AFRICA THE CASE OF UGANDA

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Abstract: During the 1970s, Uganda suffered from an economic crisis characterized by distortions in all sectors of the economy. The exchange rate, for example, was highly overvalued, inflation was in the double-digit range while interest rates were held constant for most of the period resulting into negative real interest rates. In 1981, the first attempt to re-establish stability in the economy was made when government signed a stand-by arrangement with the IMF. Relative stability was created. However, the programme with the IMF faced slippages and was finally abandoned in the early 1980s when the government found it difficult to live within programme targets. Benefits to the economy were eroded as economic ills reappeared. Inflation accelerated to triple digit levels for most of the mid-1980s, overvaluation of the exchange rate worsened, parallel markets thrived while smuggling and capital flight became rampant.

In May 1987, the economic reform programme was restarted and over the past twelve years has been broadened and refined with a view to re-establishing both internal and external balance. Initially the reform programme focused on eliminating distortions in the macroeconomic framework. Over the years, the focus has shifted to promoting efficiency in markets and according the private sector a dominating role in economic activities.

The study shows the liberalization of markets and the shift to market determined prices has had a significant role in the re-establishment of stability in the economy and in promoting sustainable growth. The study also reveals the need to increase public investment in infrastructure and developing human capacity to facilitate private investment. The challenge is to adequately finance higher public expenditure while maintaining macroeconomic stability.

1 INTRODUCTION

Uganda's experience with stabilization and structural adjustment programmes (SAP) dates back to 1981 when the first stand-by arrangement was agreed with the

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IMF. This included qualitative targets on the overall budget deficit, net bank credit and growth in broad money. The attempts to stabilize the economy were, however, short lived as policy slippages were witnessed in early 1984, reversing the benefits that had been delivered by the economic reform programme launched in 1981.

Under a new political management that assumed power in 1986, the stalled economic reform programme was jump-started in May 1987. It was identified that the causes of internal and external disequilibria emanated from inappropriate fiscal, monetary and exchange rate policies. The SAP's were consequently designed to eliminate distortions in the macroeconomic framework and promote efficient allocation of resources. These stabilization policies largely focused on containing excess demand in the economy while the Structural Adjustment Policies (SAP) were largely aimed at promoting market efficiency and the role of private sector in economic activities. To this end, the following elements were emphasized in the programme:

(i) *fiscal and monetary arrangements* — these are largely used in the demand management and in particular for controlling inflation. Excessive growth of money supply largely stems from monetizing government budget deficits and the cure to this is fiscal discipline and reform.
(ii) *liberalizing domestic markets and expanding the private sector* — the underlying theory here is that competitive markets and their efficiency in allocation of resources is promoted by appropriate pricing. Consequently, regulation of markets and their pricing has to be eliminated. In addition, monopoly position of marketing boards and other public enterprises have to be restructured and privatized.
(iii) *liberalizing foreign trade and stimulating exports* — maintaining a competitive exchange rate and streamlining the exchange and payment system is believed to be a key to promoting exports and encouraging import substitution. Furthermore, it boosts investors confidence and creates a good ground for export diversification.
(iv) *sequencing, consistency and credibility* — these are contentious issues which have no clear guidelines (Kasekende and Martin, 1996). On several occasions, issues of sequencing and consistency in policy recommendations are guided by national characteristics and initial conditions although there is a consensus emerging favouring fiscal balance as a key first step. With regard to external policies, a number of economists argue that the initial steps should be to devalue/crawl the exchange rate, move away from quantitative restrictions, and to adopt a gradual harmonization of the tariff structure. As for structural policies, debates exist as to whether financial sector liberalization should precede real sector reforms or vice versa.

To analyse the effect of financial liberalization on key financial markets in Uganda, this study will, in Section 2, analyse the liberalization of the foreign exchange market in Uganda while Section 3 discusses the impact of interest rate deregulation and financial restructuring. In Section 4, an econometric analysis of financial liberalization on key macro-economic variables will be presented. In Section 5, we derive policy implications and propose the way forward while Section 6 concludes.

2 FOREIGN EXCHANGE MARKET

Over the period 1970–80, there was no major adjustment in the nominal exchange rate. It was held at a fixed parity against the hard currencies. Given the high inflation at the time, the exchange rate became highly overvalued. As part of the policy reform package implemented in June 1981, a market-based approach was adopted for determining the value of the Uganda shilling. The rate was initially depreciated from shs 0.08 to shs 0.76 per US Dollar. Thereafter, the shilling was allowed to float according to dictates of the market. The authorities, however, retained the option to intervene in the market. Discretionary actions by government constrained the adjustment of the rate to its true market value. Subsequently, government opted for a two window exchange rate system in which most key transactions (traditional export crops, importation of petroleum products, foreign aid financed imports, official grants and debt service) were effected in window 1 at an administered rate. All other transactions were effected through the second window at an auction market determined rate. Due to fiscal pressures, the government found it difficult to observe fiscal prudence and especially, programme targets, on the budget. This resulted in the suspension of the programme with the IMF in 1994 (Kasekende and Ssemogerere, 1994). Macroeconomic imbalances re-emerged and intensified. The policy stance in the period 1985–86 was chaotic and unsure, entailing several referrals over a short period, culminating into adoption of a fixed exchange rate in August 1986. However, the premium on the exchange rate was in most cases high, sometimes reaching 1000 per cent as was the case in 1987.

As argued in Kasekende and Malik (1994), the consequence of the distortion in the exchange rate is the loss of domestic production and employment, and emergence of parallel markets in foreign exchange. Agents within the domestic economy will also be attracted to invest resources in gaining access to cheap official exchange rate for purposes of rent seeking. Related studies assessing implications of regulating prices of financial assets in Uganda include Kasekende and Ssemogerere (1994), and Kasekende and Atingi-Ego (unpublished manuscript).

The government that came into power in 1986 took bold measures to halt and reverse the above situation. Following the 77 per cent devaluation in May 1987, the government undertook a number of discrete devaluations between 1987 and 1989 such as a devaluation of 60 per cent from shs 60 to shs 150 per US$ in July 1988 and by October 1989 the exchange rate had depreciated to shs 370 per US$. All these devaluations were implemented under a fixed exchange regime. The above adjustments significantly corrected the price distortions that existed in the domestic and external sectors of the economy, hence provision of the necessary incentives to both producers of tradable and non-tradables.

In October 1989, the shilling was devalued by 41.2 per cent and thereafter, until July 1990, a policy of maintaining a real effective exchange rate constant was adopted (crawling peg). The nominal exchange rate was adjusted on a monthly basis in light of price differentials between Uganda and her trading partners. By July 1990, the exchange rate had depreciated to shs 440 per US$ reflecting a devaluation of nearly 15 per cent under this policy stance. The desperate need for export diversification, and following on from the introduction of full retention of foreign exchange receipts from non-coffee exports, the government, in July 1990, legalized the parallel market by creating foreign exchange bureaus. The bureaus were allowed to engage in

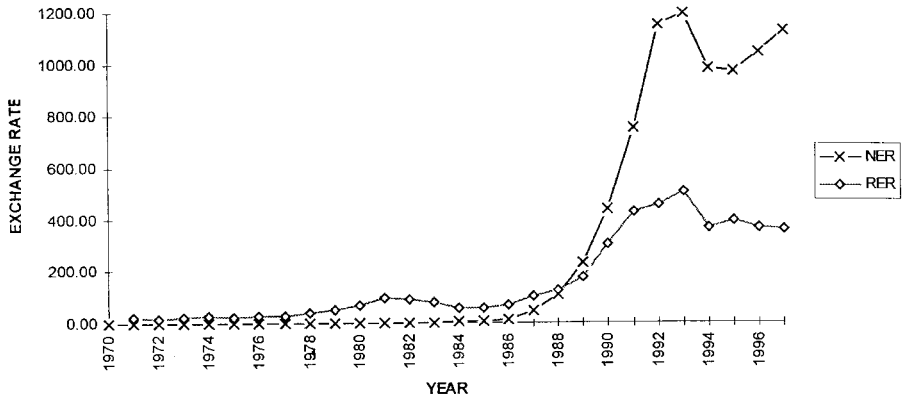

Figure 1. Uganda's nominal and real exchange rate (1970–1997).

transactions at freely determined rates. This action reintroduced duality in the official foreign exchange market. Figure 1, above shows the developments in both the nominal and real effective exchange rates over the period 1990–97.

The size and efficiency of foreign exchange bureaus has grown since their inception. Purchases have increased from a meagre US$2 million per month in July 1990 to US$47 million in September 1994 at the height of the coffee boom, and averaged about US$30 million per month in the period 1996–98. On the other hand, the margin between the buying and selling rates have continued to show a downward trend.

In January 1992, a Dutch auction system for foreign exchange was instituted at the Bank of Uganda (BoU). The aim was to further liberalize the exchange rate regime hence facilitate market determination of the offcial exchange rate. The system was used as a mechanism for financing of eligible imports using donor import support funds. Despite the adoption of two market determined rates, convergence of the two markets remained divisive. Consequently, in March 1992, government delinked the determination of the official exchange rate from the auction clearing exchange rate to the weighted average bureaus rate. The major objective of this move was to eliminate the implicit tax on those coffee exporters who were required to surrender their proceeds to the BoU rather than to the bureaus. It also aimed at eliminating the subsidy being enjoyed by the government in the financing of its import requirements and externalization of its debt. The markets were finally merged in November of 1993 with the creation of an interbank market for foreign exchange.

2.1 Macroeconomic Effects and Management of a Liberalized Foreign Exchange Market

As established above, the combination of bureaucratic interference and attendant inefficiencies which plagued macroeconomic management for so long led to severe misallocation of resources. The experience of Uganda in the past 17 years has revealed that market-oriented policies are more effective and efficient than the administrative controls. In the sub-sections that follow we discuss the effects and management of a liberalized foreign exchange market.

The Exchange Rate

By mid-1987, the official exchange rate was severely overvalued, the parallel market exchange rate was almost 1000 per cent higher than the official rate. In May 1987, the government devalued the Uganda shilling by 77 per cent which had the effect of narrowing the parallel market over the official exchange rate from 1000 per cent to about 50 per cent. It also had the effect of a devaluation in real effective terms of about 72 per cent. Over the next 13 months, however, the official rate was held constant while inflation remained high. The premium of the parallel market exchange rate over the official widened to over 600 per cent in June 1988 while the real effective exchange rate appreciated by over 65 per cent. At the time, the premium had also been narrowed to about 103 per cent. The key feature of this period was overvaluation of the official exchange rate.

The active management of the exchange rate that characterized the period October 1989 to July 1990 had the effect of depreciating the REER by about 38 per cent and further narrowing the premium to about 70 per cent. The major turning point in exchange rate management was July 1990. At this point in time, the government accepted devaluation and active exchange rate management as legitimate tools. The dealing in foreign exchange was substantially liberalized with the first step being the establishment of foreign exchange bureaus. In addition, the government gradually eliminated surrender requirements and dismantled administered allocation of foreign exchange. The net result has been the elimination of the parallel market in foreign exchange and establishment of a unified foreign exchange market.

Foreign Exchange Deposits in the Banking System

The liberalization of the foreign exchange surrender requirements progressively moved from 100 per cent surrender, through dual licensing, to 100 per cent retention and operation of foreign exchange accounts by *bona fide* exporters of goods and services. More recently, the capital account was fully liberalized thus permitting both residents and non residents to hold accounts in the domestic banking system plus permitting resident Ugandans to hold foreign exchange denominated accounts and instruments outside the country.

By June 1992, the foreign exchange accounts held by residents amounted to shs 24.3 billion equivalent to about 10.2 per cent of broad money (M3). The holdings have increased over the years to shs 79.3 billion by June 1996 and to about shs 100.9 billion by November 1997. However, as a ratio of broad money (M3), the ratio has remained relatively stable between 10 and 11 per cent in the period of June 1992 and July 1995. In the more recent past, the ratio increased to a peak of 13 per cent as of July 1997 before falling back to 11.9 per cent by end November 1997. It is difficult to disassociate the exchange rate developments from the observed shift from shilling denominated accounts to dollar denominated accounts. The expectation of further depreciation of the Uganda shilling could have triggered an enhanced preference for foreign exchange deposits. With the full liberalization of the capital account, Uganda should brace itself for possible instability in the foreign exchange market arising from variability in capital flows.[1]

[1] More detailed discussion is presented in Kasekende and Martin (1996), and Kasekende *et al.*, (1998).

Exchange Rate Management Under Capital Flow Volatility

Up to December 1993, increased capital inflows were associated only with positive effects: overcoming the foreign exchange constraint; supplementing domestic savings and investment; smoothing national expenditure by compensating for negative terms of trade; supplying technology and skills through FDI.

More recently, countries have come to realize that capital flows can also have negative effects especially on macroeconomic stability. Uganda has been subject to capital flow volatility, in one form or another, for much of the period following liberalization of the foreign exchange market in 1993. This has mainly been caused by seasonal factors influencing exports related inflows, flows associated with the coffee boom of 1994–95 plus variations in private transfers reflecting, in a significant part, the return of flight capital.

The single most important effect of large inflows has been the appreciation of the exchange rate plus the associated erosion in export competitiveness. The exchange rate appreciated by 18.9 per cent in real effective terms in 1993 and this was followed by a further appreciation of 12.6 per cent in 1994. Thereafter, the real effective exchange rate has remained relatively stable.

The response of the authorities has been instructive. Increased foreign exchange inflows have presented particular challenges to stability in the foreign exchange market and in the wider area of the resultant inflationary pressures. The BoU, closely monitors trends in the interbank and stands ready to intervene on the purchase or sell side to effect orderly exchange rate movements. The authorities are ever mindful of the need for intervention which does not jeopardize efforts in containing inflation and observing targets on monetary aggregates; the centrepiece of the adjustment programme. On many occasions, the authorities are constrained in their efforts to deal with inflows known to be of a temporary nature due to programme requirements. Of particular concern, is the failure to fully adjust for any erosion in export competitiveness. The conflicts in the conduct of monetary policy presented by increased capital inflows deserve further analysis to contain the damaging 'fall out' effects. At the moment, the BoU does not seek to defend or to target a particular exchange rate. We do not think it is feasible in the current economic environment and it is precisely this clarity of objective that has been essential for maintaining stability in the foreign exchange market.[2]

2.2 Impact of Marketing Structures and Exchange Rates Adjustments on Ugandan Exports

Prior to liberalization of export marketing and exchange system, the state owned marketing boards could not 'pass through' the benefits of the exchange rate adjustments to prices paid to producers. This was largely accounted for by the inefficiencies within these boards owing to the monopoly power they enjoyed. Even where the indicative prices paid to farmers did suggest some pass through effects, in most cases promissory notes rather than revenues were given to producers. This was mainly attributed to lack of adequate crop financing and mismanagement within the boards themselves. Following the de-monopolization of export activities in 1992, a number

[2] Refer to Kasekende *et al.* (1998) for a detailed discussion.

of private agents moved into this area and consequently, increased competition. This has permitted the pass through of a bigger share of the world market prices to the producers. By June 1998, coffee farmers enjoyed 80 per cent of the world market price compared to the 20 per cent before de-monopolization.

3 INTEREST RATE DEREGULATION

3.1 Theoretical Justification

Following the increased external financial stringency, greater reliance on domestic savings has become necessary in order to sustain growth and stability. To this end, measures such as interest rate deregulation, among others, have been implemented in order to deepen the financial markets. Raising interest rates in the short-run may, however, have little impact on the private sector savings behaviour since this is largely governed by expectations and plans regarding current and future incomes. A permanent rise in interest rates, according to theory should raise the propensity to save such that the reduction of financial repression should have a positive impact on savings (Shaw, 1973, p. 73).

However, some empirical studies in sub-Saharan Africa (SSA) do not conform with these findings as Umo (1981) and Balassa (1989) point out. They argue that given very low incomes in SSA, high and skewed patterns of consumption, interest deregulation may not necessarily raise the level of savings in African countries. Other studies such as Cho and Khatkhate (1989) for Asia, Nissanke (1994) for Africa and Yilmaz (1993) show no evidence of a simple relationship between interest rates and savings in the countries that are implementing financial liberalization. In most developing countries, with underdeveloped credit markets, consumption is constrained by liquidity. Consequently, liberalizing allocation of credit produces higher credit supply which may increase consumption instead of encouraging savings.

Yilmaz (1993) shows that adverse consequences on savings may obtain particularly when interest rates are deregulated under an environment of high inflation. As a result, it would be recommended that financial deregulation takes place only after a fairly stable macroeconomic environment has been created. This therefore raises a question on how to design interest rate policies that are compatible with sustained economic stability and growth, particularly for economies with underdeveloped financial markets.

Montiel (1994) summarizes the major objectives of financial sector liberalization as focusing on:

(i) the relationship between total GDP and stock of capital for a given productivity level
(ii) the relationship between growth in capital and gross domestic investment.

Increasing the proportion of resources devoted to productive uses is in effect raising the efficiency of financial intermediation. The impact of these is to raise the rate of capital accumulation. It basically involves minimizing the resource costs associated with a repressed financial system e.g.(i) extraction of monopoly rent from savers and borrowers through lifting restrictions of entry into the financial system (ii) lowering the reserve requirements which promotes the diversion of resources to the government

by crowding out the private sector (iii) interest rate deregulation and any other reforms that may minimize the growth of informal credit markets. The arguments for favouring the formal to informal financial system are well summarized in Pagano (1993).

Financial market liberalization can consequently, re-allocate other forms of savings to financial assets since the guiding factor behind holding different forms of assets largely depends on the rate of return on each of these assets.[3] However, financial liberalization can also increase speculation, thereby worsening the utilization of savings. This may be the case when the return on financial assets far exceeds that in the real sector.

For the analysis in this paper, we take it that savings are a positive function of real interest rates. In a situation of financial repression involving administratively fixing the interest rate below its equilibrium level, both savings and investment will be constrained, with the investments limited by savings mobilization. If the administrative setting is applied only to savings, then lending will be transacted at rates much higher than the saving rates generating a wide margin for banks. However, investment financing would still be constrained by the savings mobilized.

The policy prescription for a financially repressed economy would be to increase the nominal interest rate or reduce the rate of inflation. On the other hand, abolishing interest rate ceilings altogether would produce optimal results of maximizing investment and raising the investment efficiency.

3.2 Interest Rate Policy Stance in Uganda

In Uganda, financial repression was evident given the financial restrictions that prevailed between 1970 and 1990 and the high inflation rates which resulted in negative real interest rates. There was a tendency to tighten controls as economic ills associated with distortions worsened. With tightening foreign exchange constraints and worsening budgetary discipline in 1985–86, inflation peaked at an all high of 358 per cent in 1986, and given a deposit rate of only 35 per cent, real interest rates become highly negative (refer to Table 1).

Real interest rates are computed as

$$\left(\left(\frac{1+\mathrm{DR}/100}{1+\Delta\mathrm{CPI}^{e}/100}\right)-1\right)\times 100 \qquad (i)$$

where DR is the nominal deposit rate. $\Delta\mathrm{CPI}^{e}$ is the expected[4] inflation.

Financial intermediation, as a result, became difficult and a number of informal economic activities re-emerged with severity.[5] Recognizing the role that positive real interest rates play in resource mobilization, the authorities decided to adjust nominal interest rates based on the preceding three months moving annual inflation average

[3] Fry (1995) clearly distinguishes the role of interest rates in the demand and supply for capital (loanable funds) by arguing that changes in real deposit rates traces out the movement along the supply (savings) curve rather than along the demand (investment) curve.

[4] Here we adopt the model used by Nugent and Glezakos (1979).

[5] These included financial markets in credit and foreign exchange. Even within the formal financial institutions, some foreign owned banks set-up non-bank affiliates in order to circumvent financial restrictions in the banking system (Kasekende and Atingi-Ego, unpublished manuscript).

Table 1. Nominal and real interest rates in Uganda over the period 1970–96. (*Source*: Research Department, Bank of Uganda.)

	Deposit rate	Lending rate	Inflation rate	Real deposit rate	Real lending rate
1970–75	4.81	9.33	14.34	−9.53	−5.01
1976–80	6.09	10.16	58.98	−52.89	−48.82
1981–85	12.58	17.82	82.41	−69.83	−64.59
1986	23.30	33.33	358.42	−73.10	−70.92
1987	20.00	34.67	163.03	−54.38	−48.80
1988	26.67	35.00	118.88	−42.13	−38.32
1989	35.00	40.00	81.07	−25.44	−22.68
1990	33.25	45.00	57.61	−15.46	−8.00
1991	32.00	41.00	32.14	−0.11	6.71
1992	35.83	44.00	41.63	−4.10	1.67
1993	12.00	20.00	4.10	7.59	15.27
1994	7.03	22.25	6.90	0.12	14.36
1995	8.31	18.90	9.40	−1.00	8.68
1996	11.40	20.63	9.10	2.11	10.57

1989–90. Positive real interest rates were realized in May 1990 although there were occasional slippages back into negative real interest rates whenever the rule based approach was abandoned mainly due to high recorded inflation levels on account of temporary non-monetary factors.

Effective 1990–91, government implemented wide ranging policies aimed at eliminating the structural and financial bottlenecks that constrained progress in the economy. It also laid ground for the conduct of indirect monetary policy management. During the financial year 1990–91, the authorities specifically provided for the strengthening and development of the banking industry, generation of an updated and accurate information on the balance sheets of financial institutions and, strict observance of statutory reserve requirements by commercial banks was required by the BoU.

During the fiscal year 1991–92, the BoU was mandated to auction treasury bills for the conduct of monetary policy as part of wide ranging measures to re-establish control over inflation. In a further attempt to shift to market-based interest rates, the government, in October 1992, linked the one year deposit rate, lending rate on credit to the agricultural sector, and interest rates on term credits to the auction determined TB rates. Complete liberalization of interest rates was effected in July 1994.

The issue of efficiency gains in the form of lower interest rates are still debatable because even lower treasury bill rates have not produced a corresponding reduction in the lending rates. It would then appear that the lending rates are not responsive to monetary authority decisions which raises issues such as the structure of the financial system.

A striking factor in the desegregated analysis of the banking industry is the degree of diversity of performance with intermediation margins varying rom 4 per cent — 20 per cent (Kasekende and Atingi-Ego, unpublished manuscript) as at June 1995. This is explained by the set up and labour costs, rental charges, provisioning for non-performing loans, project type and sectoral allocation. The market is currently characterized by competition and fight for market share. Consequently, some emerging banks are belligerently trying to increase their market shares through increased deposit mobilization by offering very attractive deposit rates and

maintaining high activity in the credit market. To achieve this objective while minimizing on creation of non-performing assets, costs on loan screening, monitoring and sometimes recovery are passed on to the borrowers in the form of high lending rates. It therefore appears that intermediation margins might remain high for sometime until each bank attains its optimal share in the banking industry. Therefore, monetary authority ability to influence intermediation margins and other term structures of interest rates might be constrained for some time to come.

3.3 Reserve Money Programme (RMP)

In 1992–93, a reserve money programme (RMP) was developed to provide an operational framework that makes short-run monetary operations consistent with broader policy objectives. The exercise of reserve money programming involves three steps i.e.

(i) derivation of the intermediate targets;
(ii) projection of factors that affect the supply and demand for base money; and
(iii) monetary policy setting that is consistent with the policy targets.

The first involves forecasting money stocks and its counterparts that are consistent with the projections for the ultimate objectives. The second step consists of preparing forecasts for all the elements that influence bank reserves. It is basically an exercise that forecasts the main items of the BoU balance sheet for the target period. This breaks down the elements into those that are autonomous to the BoU and those under its control. Demand for base money is made up of three components i.e. currency in circulation, free and required reserves; while its supply is made up of changes in the BoU's net foreign assets (NFA) net domestic assets (NDA) and other items net (OIN). Currency in circulation, free reserves, NFA and credit to the commercial banks (part of NDA) constitute the autonomous sources in the BoU balance sheet while the required reserves and some items included under OIN constitute items directly under the control of the BoU. More recently, intervention in the foreign exchange market has been added to constitute to those factors under the control of the BoU.

The third step involves instrument setting such that the calculated differences between the demand for and supply of base money due to autonomous factors guides the BoU in the conduct of monetary policy. If excess supply of base money obtains, the BoU will choose an instrument setting which will either increase the demand for or lower the supply of base money or both. Recently, in December 1996, the BoU launched its own bill which carries a maturity of no more than 60 days. The bill is used solely for absorption of liquidity and is, consequently, sold only to commercial banks.

It is, however, recognized that the potency of monetary policy instruments is limited at lower levels of financial development. Consequently, the flexible management of the budget will continue to play a key role in the overall liquidity management and such a role will only wane when monetary instruments become fully developed.

In the use of the Reserve Money Programme (RMP), the BoU has found it difficult to set interest rates for the reason that the demand for excess reserves by commercial banks are largely interest rate inelastic (Kasekende and Atingi-Ego,

unpublished manuscript). Consequently, depending on whether the actual base money levels are above or below the desired monetary path, the BoU will fix the value of paper they are to auction in order to minimize any given deviation from the desired monetary path. In such a situation, the market then determines the interest rate (price) at which they are willing to purchase the treasury bills offered while the BoU only fixes the quantity of paper offered for sale.

3.4 Structure and Evolution of the Ugandan Financial System

Uganda's financial system is still underdeveloped and as is the case with other developing countries, it is made up of a formal and an informal financial sectors. Until 1988, the formal sector can be said to have been a regulated one in the sense that it was characterized by direct controls on interest rates, preferential rates for certain loan categories like agriculture and manufacturing, and selective credit controls for directing credit to priority sectors. Given the political and social upheavals that prevailed in the 1970s and early 1980s, the economy was plunged into a crisis characterized by distortions in all sectors with inflation running to double and triple digits. As revealed in the foregoing sections, real interest rates became negative resulting into difficulties and inefficiencies in financial intermediation and an over-valued exchange rate. The adverse effects of the distortions on domestic savings and investments, and the shift towards short-term savings and investments were discussed above. In addition, it was also observed that there was a substitution effect away from domestic formal financial assets to real assets, inflationary hedges and the holding of foreign currency denominated assets (Kasekende and Malik, 1994; Atingi-Ego, 1996).

Over the years, it became evident that financial repression led to several distortions in the formal financial system and inefficiencies in the allocation of resources. The financial system was by early 1980s experiencing intermediation problems with high inflation rates eroding the capital base of most commercial banks, hence declining capital adequacy ratios. This decline coupled with a rising volume of non-performing assets of the banking system threatened the solvency of the system.

The formal financial system faced other constraints and these included among others the lack of adequate and reliable data on the credit history of the productive firms. Government stepped in to meet the credit requirements of firms especially those classified as engaged in productive activities by providing direct support or guarantees of repayment. In some cases, however, this was through provision of high powered money which further aggravated the inflationary pressures and hence worsening the already negative real interest rates in the economy.

The first stand-by-arrangement, agreed on by the Ugandan authorities with the IMF in 1981 referred to earlier, had quantitative targets on the overall budget deficit, net bank credit to government and growth in broad money. The aim of the authorities was to substantially reduce bank credit to government while increasing exceptional domestic non-bank financing. For a given ceiling on net credit, the government made adequate provisioning for financing of exports and essential imports. This had the effect of crowding out certain private sector activities, especially those classified as of low priority by government, from the formal credit market. The fiscal stance was rather loose over the period 1981–86 given that little progress was made to improve the tax structure and collection. On the other hand, weak government expenditure

controls and deteriorating budgetary discipline resulted in expansionary fiscal policies. Use of monetary policy instruments was severely constrained by the underdeveloped nature of the financial market and consequently, liquidity in the economy could not effectively be regulated. In the circumstances it was difficult to restructure the financial system or even address duality in the system. There was a quiet acceptance of the informal market activities.

Regulatory framework

Efforts over the last six years have been directed at strengthening the financial sector and increasing the liquidity and depth of the Treasury bill and inter-bank markets. To this end, a new BoU Act aimed strengthening the ability of the BoU in formulating, regulating and supervising the financial sector was passed. In a further effort to consolidate the autonomy of the Central Bank, the BoU was recapitalized to the tune of Uganda shs 60 billion in June 1996, using an interest bearing bond.

A Financial Institutions Act was also passed in 1993 and it provided for higher capital requirements and lightening on risk exposure. The need for capitalization arose in order to

(i) cover banks from unexpected portfolio shocks and risk they face in their operations;
(ii) allow banks broaden their base and possibly take on extra risk with higher returns but using own resources;
(iii) shift emphasis on bankable projects that may not have adequate collateral.

To date all banks have met the minimum paid capital requirements.

Drawing from the wide ranging powers conferred upon it over the financial institutions by the Bank of Uganda Act, the BoU has over the past three years tightened on supervision, drawn restructuring programmes for weak banks and has to date strictly implemented the requirement on commercial banks to adequately provide for bad debts. As a result, competition has been promoted within the banking industry and the enactment of the new Financial Institution and the Bank of Uganda Acts in 1993 have helped to minimize the creation of non-performing assets. Prior to the enactment of these Acts in 1993; the banking system lending decisions were not based on commercial assessment of risk against return. On the contrary, the government directed commercial banks through the BoU to concentrate lending to three main areas, i.e. manufacturing, agriculture, trade and commerce. Political interference and financing of state enterprises in most cases also dictated the direction of credit. The result was that the balance sheets of the commercial banks' deteriorated largely because of a weak capital base and large loan losses. To date, however, following the increase in the minimum paid up capital coupled with a shift in policy from direct to indirect control and improved supervision/regulation of the financial sector, the share of non-performing assets has declined and the balance sheets of the commercial banks have greatly improved. However, the competition has not been translated into efficiency gains by way of lowered spreads. This is largely as a result of freeing the interest rates determination in 1993. Given the new levels of capitalization, provisioning for bad loans and other high intermediation costs, the lending rate rose much faster than the deposit rate which translated into high spreads, (refer to Table 2). In the recent past, the spreads have started narrowing especially among the big and efficient banks. If one is therefore looking at the impact of competition on

Table 2. Interest rate spreads (all numbers are expressed in annual percentages).

	Weighted deposit rate	Weighted lending rate	Spread	Inflation
1994				
March	5.99	25.03	19.04	12.20
June	4.01	14.00	9.99	16.00
September	2.46	19.66	17.20	5.40
December	2.51	22.25	19.74	6.90
1995				
March	2.34	21.71	19.37	6.80
June	2.05	19.53	17.48	3.40
September	2.18	19.32	17.14	9.60
December	2.20	18.90	16.70	9.40
1996				
March	2.78	19.28	16.50	6.30
June	3.67	20.77	17.11	5.40
September	4.08	20.63	16.55	9.30
December	4.14	21.17	17.03	5.20
1997				
March	4.19	21.34	17.15	10.00
June	4.53	21.70	17.18	9.90
September	4.96	21.08	16.12	6.20

interest rate spreads, the post 1993 period reveals some interesting developments in the sector. The banks initially opted for high deposit rates to attract deposits and attain a respectable new market share. As a result, they charged high lending rates and picked up the risky projects which have turned non-performing. The ongoing tightening on prudential requirements, and then strict observance, is likely to favour prudence and efficiency in the industry. For the future, segmentation will gradually be eliminated, spreads will narrow and more particular lending rates are likely to drop to about 12–15 per cent margin.

The weighted deposit rate includes demand and savings deposits. Consequently, this rate differs from the one reported in Table 1 above.

Private sector credit

With the deregulation of the financial sector that started towards the close of the 1980s, the composition of private sector credit from the formal financial institutions appears to have changed. As shown in Figure 2 below it can be seen that credit to the agricultural sector in general and that to farming in particular, has been declining. It would appear that the banking system is risk-averse towards the agricultural sector which could be attributed to the high level of information asymmetry that exists between banks and the rural (agricultural) agents engaged in agricultural activities. Although resources allocated for crop finance have not declined in real terms, their proportion to total private sector credit has shown a steady decline. This may reflect the increased off-shore pre-financing of export activities.[6] Credit to manufacturing has continued to grow steadily which may suggest that banks have tended to focus on

[6] It is seen that in the era of financial deregulation when the real lending rates in the domestic financial markets increase and the exchange rate is showing appreciation pressures, then the cost of off-shore borrowing becomes cheaper.

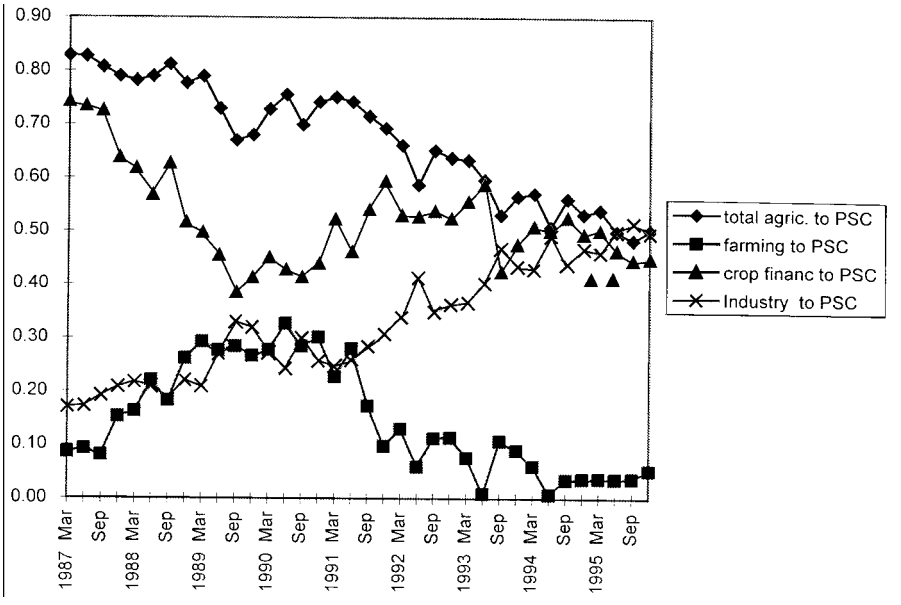

Figure 2. Ratios of PSC to various sectors.

industrialists (considered their best clients) in their attempt to improve their portfolio management.

The trends in liquidity have largely reflected the development in credit to government and more recently developments in the external sector. In the period 1986–92, developments in credit to government, especially access to credit from the central bank by the government dictated movements in M2. For example, the expansion in M2 that was observed in May 1988 is accounted for by the expansion in total domestic credit of 234 per cent as measured on an annual basis. Similarly, the stabilization in the growth of liquidity after May 1988 is largely explained by considerable restraints in the growth of domestic credit, especially on government ways and means. More recently, credit to the government has acted as an offsetting factor to the expansion in NFA and credit to the private sector. However, Kasekende and Atingi-Ego (unpublished manuscript) argue that despite the repayment of the banking system by government, credit to the private sector has not grown by comparable magnitude due to commercial banks opting to accumulate reserves.

Non-performing assets

As part of the on-going financial sector reforms adopted in 1993, the BoU ceased forthwith to direct commercial bank credit. Prior to this, commercial banks were under instruction from the BoU to direct given percentages of their credit at a given interest rate to specified sectors without due consideration of the risks and returns that the banks would face. On the other hand, some lines of credit were politically motivated and these factors led to the accumulation of non-performing assets (NPAs) and threatened the solvency of the banking system. This was particularly so given the weak capital base that the commercial banks' had. Following the financial sector liberalization, the BoU abandoned direct controls on credit. The banks therefore,

Table 3. Non-performing assets (NPA) as a ratio to total assets of the banking system (TABS).

	Total assets of commercial banks		
	NPA	(TABS)	NPA/TABS
1995			
June	137.57	706.40	0.19
September	127.13	709.90	0.18
1996			
June	138.21	805.60	0.17
September	148.89	836.80	0.18
December	153.27	868.70	0.18
1997			
March	134.13	912.00	0.15
December	137.33	1025.00	0.13

started allocating credit based on their perceived risk-return assessment and this had some impact on the growth of NPAs.

The ratio of NPAs to the total commercial banks' assets as shown in Table 3 suggests that the trend has been declining since 1995, which may not entirely suggest an improvement in the risk-return assessment on the part of commercial banks. Rather, the banks have become risk-averse, preferring to invest their resources in government securities and holding excess reserves with the BoU. The banks are still risk averse in regard to lending to the private sector given that they had on previous occasions incurred NPAs with the sector.

A lot of effort has been devoted to improving the credit culture in Uganda. A Non Performing Assets Recovery Trust (NPART) was set up to deal with loan defaulters to Uganda Commercial Bank (UCB). In March 1997, Uganda shillings (Ushs) totalling 72 billion (US$72 million) was transferred from UCB's NPA to the trust and UCB was recapitalized to the same magnitude through the issuance of an interest bearing bond. The trust is charged with the responsibility of recovering from loan defaulters monies owed to UCB. Earlier on in the fiscal year, Ushs 26 billion of development finance resources owed to government that had become NPA, were also written off from the UCB books by government. Consequently, in the fiscal year 1996–97, nearly Ushs 100 billion was cleaned off from UCB books. Other efforts include the setting up of a credit rating agency in January 1998 and a commercial division of the high court has been set up to speedily adjudicate on disputes of a commercial nature.

Following financial liberalization, the ratio of credit to the private sector in total assets increased very fast from about 19 per cent in 1993 to a peak of about 45 per cent in 1996 (refer to Table 4). As pointed out earlier, this reflected the removal of direct controls on credit and entry into the industry of many small local banks espousing non-traditional methods in banking. The observed decline in lending in 1997 and 1998 could be explained by the drop in economic activity in both years due to weather related reasons; the drought in the second half of 1996 and EI Nino in 1997. In addition, UCB, the biggest bank, was restrained in its lending activities in preparation for privatization. UCB was finally privatized in 1998. For the future, there is a great

Table 4.

	tb/asset	credit(p)/asset	Total assets
1993	0.03	0.19	1.00
1994	0.05	0.37	1.00
1995	0.06	0.41	1.00
1996	0.07	0.45	1.00
1997	0.09	0.36	1.00
1998	0.09	0.33	1.00

likelihood of revival in lending. As banks' cut back on lending in 1996–98 the ratio of treasury bills in total assets increased from about 6 per cent (1995) to 9 per cent (1998).

Concentration ratios

Before 1995, the banking system in Uganda could be considered as oligopolistic largely because up to nearly 70 per cent of the total banking assets and liabilities were held by only 4 banks, i.e. Uganda Commercial Bank (UCB), Baroda, Barclays and Standard. However, because of the freeing of entry into the banking system, a number of new banks have entered into the system with a few of them being very aggressive. They have to date exploited the tax holiday enjoyed under the investment code in order to increase their market share. Consequently, three of these new banks have been able to increase their market share from 6 per cent in 1995 to 16 per cent at end 1997 (refer to Table 5). The entry of new banks has triggered competition within the banking system.

Because of the diverse ownership structures and performance of commercial banks, we have divided the banks into four groups. Group A banks include those with the largest branch network and largely publicly owned, while group B are the well established and foreign owned banks. Group C banks encompass those new banks which are very aggressive in the market and group D comprise the rest of the other small banks. Table 6, below suggests that group A banks have significantly lost their market share to mainly group C and partly to group D, while group B banks have not been adversely affected. Indeed, Group B banks have slightly increased their market share from 35 per cent (1995) to 38 per cent (1998).

Table 5. Asset concentration ratios.

	Group A	Group B	Group C	Group D
1995				
June	0.47	0.36	0.06	0.11
September	0.46	0.35	0.07	0.11
1996				
June	0.38	0.36	0.13	0.13
September	0.38	0.35	0.14	0.13
December	0.33	0.37	0.15	0.15
1997				
March	0.30	0.36	0.15	0.19
December	0.29	0.38	0.16	0.16

Table 6. Interest rates.

	Interest rate spreads across the groups			
	1993	1994	1995	1996
Group A	7.19	5.61	7.21	8.77
Group B	12.1	9.6	13.09	12.53
Group C	10.33	6.39	10.15	7.99
Group D	19.83	16.56	17.56	15.6
Banking industry average	11.73	8.87	10.62	11.06

In terms of interest rates margins, Table 6 suggests that groups A and C have spreads which are below the banking industry average. Given that group A banks are largely publicly owned and the nature of their customers, they may not be bent on maximizing profits based on high spreads. Group C banks are largely aiming at increasing their market share, hence they use low spreads in the form of high deposit rates and low lending rates relative to the banking industry average. Lower spreads in this group may not be a reflection of potential moral hazards and adverse selection problem given that the level of NPA have up to now remained the lowest in the banking system. Groups B and D have margins which are far higher than the banking industry average. The group D banks, in particular, appear to be surviving in the industry through high spreads and will be most vulnerable to tightened supervision and enforcement of bank regulations. On a sad note, however, it is these banks that are mainly driving up the interest spreads in the banking system and group B banks appear to be maximizing their profitability through inefficiencies of group D banks. A policy recommendation to lower interest spreads in the banking industry would therefore be to raise the capital base of banks to such a level that most of these small banks are either forced to merge (hence increase economies of scale and lower operating costs) or to close.

Non-bank financial institutions (NBFI)

Prior to 1993, these institutions acted like banks although they were not directly under the supervision of the BoU. They largely grew up as financial repression intensified and the commercial banks looked for avenues to escape the over-regulated commercial banking sector. Consequently, a number of banks set up affiliate institutions that were deposit taking and also extended credit but not subjected to the BoU's regulatory and supervisory powers. These institutions, hence, became avenues for investment without restriction and largely dwelt on corporate lending and such institutions included Grindlays Bank International, Standard Bank International and Barclays Bank International. However, following financial liberalization and the accompanying financial sector reforms, these institutions have wound up.

Another set of NBFI included building societies which also behaved like banks although they were risk lovers. They were also not regulated and supervised by the BoU because there was no law governing such NBFI's. They largely mushroomed to fill up the gap created by the commercial banks which had mainly discriminated against some sections of the society and geographical areas. However, because a number of them were risk-takers, they soon found themselves insolvent and have since then wound up.

Another category includes the bureau de change and credit institutions. These institutions are currently licensed and regulated by the BoU. They are, at times, used as a springboard to requesting a bank license. For now, the assets/liabilities of NBFI's are not very big.

In general, a lot of effort has been put in to deepen the financial sector. The landmark to this was the establishment of forex bureaus in July 1990. However, their activities are limited to over the counter (OTC) transactions. Other efforts include the operationalization of the Uganda Security Exchange, merchant banking and leasing companies. Probably a milestone in this area is the recognition of the role of micro-financial institutions in the growth of the financial sector. A number of them act as conduits for donor resources directed to assisting micro business units in both rural and urban areas. The authorities are carefully studying these institutions with a view to designing a regulatory and supervisory framework.

3.5 Macroeconomic Developments (1985–98)

Table 7 below summarizes the major macroeconomic developments since 1985–86. It basically suggests that national savings as a ratio of GDP have been increasing and this is largely attributed to governments increased savings with the banking system.[7] Private sector savings on the other hand have increased mainly as a result of increased real rates of returns in the formal banking system. However, some constraints such as limited access to credit from the banking system have hitherto hindered the growth of private sector savings. Growth in real GDP has been positive since 1985–86 largely as a result of creation of a good policy environment. This good policy environment has

Table 7. Key microeconomic indicators.

	Gross national savings (% of GDP)	Gross domestic investment (% of GDP)	GDP growth rate (%)	Inflation (annual percentage)	Exports to GDP ratio (%)	Imports to GDP ratio (%)	Curr. acct to GDP ratio (%)
1985–86	9.20	8.40	0.10	240.00	1.89	2.67	0.24
1986–87	9.90	9.70	3.80	163.03	4.22	8.65	−1.42
1987–88	11.00	10.80	7.60	118.88	7.55	20.23	−5.53
1988–89	1.40	11.10	6.00	81.07	7.51	20.01	−7.02
1989–90	2.70	12.60	5.80	57.61	5.98	20.78	−9.34
1990–91	2.50	15.00	5.20	32.14	7.61	20.78	−8.20
1991–92	0.30	15.80	3.10	41.63	6.66	22.77	−5.84
1992–93	0.50	15.20	8.40	4.10	5.69	18.35	−4.42
1993–94	2.8	14.70	5.30	16.00	10.31	16.57	−1.07
1994–95	8.9	15.30	10.60	3.40	9.47	21.17	−0.96
1995–96	8.6	17.50	8.10	7.90	11.74	22.79	−4.28
1996–97	10.8	17.30	5.00	10.40	11.36	21.09	−3.75
1997–98	—	—	5.10	−2.30	7.71	23.19	−6.78

[7] The dissaving witnessed in the past is largely attributed to governments heavy borrowing from the banking system.

enabled productive firms to have increased access to working capital from the domestic financial system and also foreign exchange to import the necessary spare parts. Prior to exchange and interest rate liberalization together with the accompanying financial sector reforms that greatly enhanced the ability of firms to increase their working capital, government had put in place a mechanism to enable firms in priority areas access foreign exchange. This included the open general licence and special import programmes. Over this period, a lot of donor resources have also helped to expand the productive capacity of the economy. Together, these policies rather than the peace dividend, have helped to kick-start growth in the economy. However, if these high rates of economic growth have to be sustained, then the investment-GDP ratios must increase.

On the external front, exports that appeared to have picked up have not shown any sign of sustainability. This appears to support the argument that the use of the right macroeconomic policy (exchange rate in this case) without any investment in the sector is not sustainable. There is for example need to invest in a few exports where the country has comparative advantage and, where possible, give emphasis to products that can be traded in the region, physical and human infrastructure, provision of credit facilities in order to attain the economies of large scale production for cost effective production. The current account deficit has meanwhile continued to be sustained by donor resources, a situation that is clearly not sustainable in the long-run given the poor performance of exports.

4 EMPIRICAL ANALYSIS

The time series properties of the variables are first investigated using the Dickey–Fuller (DF) (see for example Dickey and Fuller, 1981) and Durbin Watson (DW) (Sargan and Bhargava, 1983) unit root test. DF tests the size of the coefficient b_1 in the following equation

$$\Delta x_t = \beta_0 + \beta_1 x_{t-1} + e_t. \tag{1}$$

The test is against the null hypothesis H_0: $\beta_1 = 0$. Rejection of the null suggests that the series is non-stationary and has to be differenced at least once in order to make it stationary.

In estimating the long-run equation, we use the methodology of co-integration suggested by Johansen and Juselius (1990) and also use the Engle and Granger (1987) for our short-run error correction equation. The results revealed that most of the variables used in this study are non-stationary in levels and attained stability on first differencing with the exception of money supply (M2), inflation and the nominal exchange rate (NER) which were found to be $I(2)$.[8]

4.1 Estimation Results for the Inflation Equation

In specifying a price equation, inflation was preferred given that the time series properties of the variables could not permit us to use actual prices. This also applies

[8] All results pertaining to stationary tests, cointegration Johansen and Juselius test can be obtained from the authors upon request.

to exchange rate levels and nominal money stocks. Consequently, inflation is specified as follows:[9]

$$\text{inflation} = f(\text{GDP}, \Delta\text{NER}, \text{DR}, \Delta\text{M2})$$

Theory *a priori* would suggest that

$$f_1, f_3 < 0, \text{ and } f_2, f_4 > 0. \tag{2}$$

The search for a stationary relationship involving inflation includes the variables LINF, LGDP, ΔlNER, LDR and ΔlNM2, (*l* is the logarithmic notation for the respective variables) which are all *I*(1) variables. Note that LNM2 and LNER are I(2) variables. A VAR with a lag of 1 is used.

There is a no co-integrating vector at the 5 per cent critical value using the maximum eigenvalues although, using the trace of the stochastic matrix, one vector exists at the 5 per cent critical values.

The vector specified in (3) below was found to satisfy the theoretical *a priori* for the inflation equation

$$\text{INF} = -0.05*\text{LGDP} + 0.10*\Delta\text{LNER} - 0.46*\text{LDR} + 0.82*\Delta\text{LNM2}. \tag{3}$$

The error term to the vector generates observations for the error correction variable (ECM1) specified in (4) below.

$$\text{ECM1} = \text{INF} + 0.05*\text{LGDP} - 0.10*\Delta\text{LNER} + 0.46*\text{LDR} - 0.82*\Delta\text{LNM2}. \tag{4}$$

This agrees with the above theoretical expectations and suggests that a 1 per cent devaluation of nominal exchange rate leads to a 0.1 per cent rise in inflation. Stronger effects on inflation are seen to result from growth in nominal broad money where a 1 per cent rise in the growth of nominal money stocks results in a 0.82 per cent rise in inflation. In controlling inflation therefore, emphasis could be laid on economic growth as a 1 per cent growth in real GDP leads to a 0.05 per cent fall in inflation, while restraints on money supply itself produces powerful but negative effects on the rate of growth of inflation. A 1 per cent rise in the deposit rate lowers inflation rate by 0.46.

As shown in Table 8, the short-run model seems to suggest that checking the changes in exchange rate depreciation together with the acceleration in the growth of nominal money supply will in the short-run lower the rate of change in inflation (price acceleration). These are therefore the two policy variables that the monetary authorities could use to restore macroeconomic stability (as measured by price stability).

4.2 Estimation results for imports

In specifying an imports equation, the following specification was preferred:[10]

$$\text{IMPORTS} = f(\text{GDP}, \text{REER}, \text{CAPITAL INFLOWS}). \tag{5}$$

[9] GDP — gross domestic product
NER — nominal exchange rate
DR — deposit rate
M2 — money supply
[10] REER — real effective exchange rate
CAP — capital inflows

Table 8. Dynamic equation for ΔLINF following general to specific approach (sample period: 1970–96).

	Coefficient	*t*-value
*i*npt	0.91	4.11
Δ^2 LNER	0.30	2.42
Δ^2 LNM2	0.47	2.78
ECM1 (−2)	−0.98	−4.13
R^2	0.68	
Adj. R^2	0.62	
DW	1.79	
$F(3,19)$	13.65	
Serial correlation $F(1,18)$	0.53 [0.473]	
Normality $F(1,15)$	0.38 [0.542]	
Heteroskedasticity $F(1,21)$	0.98 [0.332]	

The arguments advanced by Hemphill (1974) and Moaran (1989) are also incorporated in our specification. It is believed that imports into developing countries are to a large extent constrained by availability of foreign exchange rather than their prices. Consequently, they argue that foreign reserves of the previous year should be introduced to capture this argument. However, we have opted touse capital inflows for the corresponding years in order to maintain consistency of the data set.

Theory *a priori* would suggest that $f_1, f_3 > 0$ while $f_2 < 0$.

The search for a stationary relationship involving imports and exchange rates would involve the following variables; *LIMP*, *LGDP*, *LREER*, and *LCAP*, which are all *I*(1) variables. A VAR with a lag of 2 is used. We exclude exports earnings because these are included in total GDP.

Based on both the Maximal Eigenvalues and Trace of the Stochastic Matrix methodologies, there appears to be a unique co-integrating vector given as.

$$\text{LIMP} = 0.74*\text{LGDP} - 0.47*\text{LREER} + 0.74*\text{LCAP} \tag{6}$$

The error term is (ECM2) derived from the above vector defines the error correction variable and is expressed as

$$\text{ECM2} = \text{LIMP} - 0.74*\text{LGDP} + 0.47*\text{LREER} - 0.74*\text{LCAP}. \tag{7}$$

This agrees with the above theoretical expectations and suggests that a 1 per cent devaluation of the real exchange rate leads to a 0.47 per cent fall in imports. Stronger effects on imports are seen to result from real GDP where imports are showing a near unit income elasticity. This appears to support the theoretical expectations about imports and growth in developing countries. Exogenous capital inflows to a greater extent also influence imports. Consequently, the arguments of Hemphill (1974) and Moaran (1989) seem justified here given that the responsiveness of imports is greater from capital inflows than it is from the price of imports (here proxied by real exchange rate). The impact of real exchange rate depreciation are weakest of all in this specification.

Table 9. Dynamic equation for Δ LIMP following general to specific approach (sample period: 1970–96).

	Coefficient	*t*-value
inpt	−5.25	−2.28 [0.029]
ΔLREER (−1)	−0.58	−1.29 [0.213]
ΔLCAP (−1)	0.28	+1.56 [0.134]
ECM2 (−1)	−0.80	−2.36 [0.029]
R^2	0.25	
DW	2.19	
Serial correlation $F(1,19)$	0.21 [0.655]	
Functional form $F(1,19)$	4.15 [0.023]	
Heteroskedasticity $F(1,22)$	0.320 [0.057]	

As shown in Table 9, imports in th short-run seem to be positively influenced by the current changes in the levels of capital inflows, negatively to some extent by the real effective exchange rate but largely by its long-run stationary relationship. However, judging from the diagnostics, this functional specification appears to be poor. This may be justified on the grounds that imports are in most cases specified as a technical relationship with GDP (Atingi-Ego, 1996).

4.3 Estimation results for the exports equation

Theory would suggest the real exchange rate and income in trading partner countries to be some of the major determinants of the exports of developing countries. However, what is important in relation to the latter is the degree of income elasticity of a developing country exports. The lower it is, the less responsive exports are to incomes of partner countries thus its explanatory power in the exports equations gets limited (Atingi-Ego, 1996). What appears to be more fundamental in the exports equations is the exchange rate and the world market prices of the exports (proxied by terms of trade) themselves. Consequently, exports are specified as follows:[11]

$$\text{EXPORTS} = f(\text{REER}, \text{TOT}) \tag{8}$$

Theory *a priori* would suggest that $f_1, f_2 > 0$.

The search for a stationary relationship involving exports and exchange rates includes the variables LEX, LTT, and LREER which are all $I(1)$ variables.

Based on the Maximum Eigenvalues and trace of the stochastic matrix, we did not find any $\boldsymbol{u}$ vector. However, on the grounds that both the Maximal and Trace of the Stochastic Matrix were near their critical values, we may accept the alternative hypothesis that there exits at most one co-integrating vector and reject the null of there being zero. The cointegrating vector estimated is given in equation (9).

$$\text{LEX} = 0.17^*\text{LREER} - 1.82^*\text{LTT} \tag{9}$$

[11] TOT — terms of trade
LTT — log of the terms of trade
LEX — log of degree of openness of the economy

Table 10. Dynamic equation for ΔLEX following general to specific approach (sample period: 1970–96).

	Coefficient	*t*-value
inpt	0.01	0.129 [0.899]
ΔLTT	0.43	2.12 [0.05]
ΔLTT (−1)	0.63	2.67 [0.02]
ECM3 (−3)	−0.48	−3.71 [0.002]
R^2	0.48	
Adj. R^2	0.39	
RSS	1.006	
DW	1.85	
SD of dependent variable	0.3115	
F(3,17)	5.26 [0.009]	
SE of regression	0.2433	
Serial correlation $F(1,16)$	0.047 [0.831]	
Functional form $F(1,16)$	0.154 [0.700]	
Heteroskedasticity $F(1,19)$	0.013 [0.912]	

The error term is ECM3 to the vector above defines the error correction variable.

$$\text{ECM3} = \text{LEX} - 0.17^*\text{LREER} - 1.82^*\text{LTT}. \tag{10}$$

The long-run relationship agrees with the above theoretical expectations and suggests that a 1 per cent devaluation of the real exchange rate leads to a 0.17 per cent rise in exports. Stronger effects on exports are seen to result from changes in terms of trade where a 1 per cent rise in terms of trade results in a 1.82 per cent rise in exports. In boosting exports, emphasis could be laid on maintaining a competitive exchange rate as terms of trade are purely an exogenous variable. The weak exogeniety test[12] suggests that the terms of trade are established weakly exogenous in this relationship whereas the real exchange rate is not. Consequently, in the short-run the terms of trade can enter as a contemporaneous relationship with the exports variable.

Basically, the model as shown in Table 10 seems to suggest that the short-run exports are being driven by changes in terms of trade. It would therefore seem to suggest that the Ugandan exports are largely driven by exogenous factors and only to a small extent by competitiveness which is not good for the development of exports. There is need to change the structure of exports so that their output will to a large extent be driven by domestic policies rather than exogenous factors. We of course realize that this is a long term venture but only express the urgency in beginning to do so.

4.5 Estimation Results for the Growth Equation

Using the maximum eigenvalues and trace statistic of the stochastic matrix, we established that there are three co-integrating vectors, but only one of them satisfied

[12] All exogeniety test results are available from the authors upon request.

Table 11. Dynamic equation for ΔLGDP following general to specific approach (sample period: 1970–96).

	Coefficient	*t*-value
inpt	0.41	3.55
ΔLINV	0.55	5.33
ΔLEX	–0.19	−1.80
ΔLOPEN (−1)	−0.24	−2.06
ΔLOPEN (−2)	−0.25	−2.43
ECM (−2)	−0.48	−3.59
R^2	0.79	
Adj. R^2	0.71	
DW	1.79	
SD of dependent variable	0.28	
$F(2,18)$	10.52 [0.000]	
Serial correlation $F(1,13)$	0.978 [0.760]	
Functional form(1,13)	2.178 [0.164]	
Heteroskedasticity $F(1,18)$	0.155 [0.690]	

the conditions for endogenising on GDP. This relationship is shown in equation (11).[13]

$$\text{LGDP} = 0.22*\text{LINV} + 0.03*\text{LCR} - 0.03*\text{LOPEN} - 0.10*\text{LINF} \qquad (11)$$

The error term (ECM 4) to above vector is expressed on the equation that follows

$$\text{ECM 4} = \text{LGDP} - 0.22*\text{LINV} - 0.03*\text{LCR} + 0.03*\text{LOPEN} + 0.10*\text{LINF}. \quad (12)$$

The results seem to suggest that long-run economic growth in Uganda has largely been affected by macroeconomic policies such as degree of openness, level of investment and degree of private sector participation.

The dynamic results shown in Table 11 shows that in the short-run the changes in level of domestic investment and openness are very fundamental in raising economic growth. The results seem to point out to the fact that structural reform and macroeconomic stabilization have been successful in stimulating economic growth. The results further point out that the achievements present a window of opportunity for a strong private sector investment and export diversification. However, the kind of investment that this model might be capturing could be the rehabilitation/construction type as investment normally comes in with a lag. Increasing openness on the other hand appears to have had a significant impact on the short-run growth.

5 POLICY IMPLICATIONS DERIVED FROM THE EMPIRICAL ANALYSIS

The liberalization of the key financial markets have had significant effects in the stabilization of the economy and providing a window of opportunities for sustaining growth. The long-run inflation over the sample period 1970–96 has been affected by

[13] INV — level of investment
CR — credit to the private sector
LOPEN — proxy for degree of openness measured by export taxes. Import duties were dropped on account of exemptions and rampant tax evasion.

both real and monetary factors although the empirical results suggest that the latter had a much more stronger impact.[14] The dynamic results show changes in the growth of money is the single most important factor affecting the price acceleration and to some extent growth in the changes of exchange rate. It is therefore no surprise that the monetary authorities have targeted these two variables in their fight against inflation. Imports on the other hand have been largely affected by the levels of capital inflows both in the short- and long-run. The real exchange rate over the longer run has negatively affected imports as expected although this is not the case in the short-run. The story appears the same in the case of exports where the role of the real exchange rate is over-shadowed by terms of trade. One could therefore describe the Ugandan sector as being influenced by exogenous rather than domestic factors. This situation is unfortunately unsustainable. The growth equation also reveals the stimulation of economic growth will rely on increasing exports and the level of investment which unfortunately may not be immediately delivered by the liberalization of financial markets. It will take the concerted efforts of government to increase the rate of returns to private sector investment through substantial investment in infrastructure.[15] Exports on the other hand will have to be driven by private sector initiative. However, even here, a log of investment needs to be undertaken, say human capacity and infrastructure, provision of financial services that will change the production techniques from the present peasant and small scale production to commercial scale that would enjoy economies of scale, if Uganda is to increase significantly her exports volume and value.

6 CONCLUSION

The liberalization of key financial markets together with the accompanying financial sector reforms in Uganda have delivered a stable macroeconomic environment, and by setting a stage for long-term sustained growth and structural transformation a window of opportunity has been opened. We also realize that to sustain the current levels of growth requires that investment and export ratios raised significantly while maintaining the present macroeconomic stability. Consequently, while continuing with financial sector reforms to strengthen the financial-real sector linkages, investment in infrastructure and poverty reducing projects together with the creation of new markets for export development will sustain Uganda re-started growth.

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[14] As exemplified by the size of the co-efficients attached to growth in money, interest rates.
[15] For a detailed discussion on this see Atingi-Ego and Kasekende (1998).

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