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PROMOTING DEVELOPMENT ORIENTED FINANCIAL SYSTEMS IN SUB-SAHARAN AFRICA: THE UGANDA COUNTRY EXPERIENCE

Marios Obwona
Economic Policy Research Centre

Charles Augustine Abuka and Kenneth Alpha Egesa
Bank of Uganda

May 2006

Economic Policy Research Centre (EPRC)
51 Pool Road Makerere University Campus, P. O. Box 7841 Kampala, Uganda
Tel: 256-41-541023, Fax: 256-41-541022, Email: eprc@eprc.or.ug

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Marios Obwona
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Charles Augustine Abuka and Kenneth Alpha Egesa
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Contact E-mail Addresses: obwona@eprc.or.ug, cabuka@bou.or.ug and kegesa@bou.or.ug

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EXECUTIVE SUMMARY

Uganda faced a number of challenges at the time of embarking on financial sector reforms[2]. These challenges were complicated by decades of economic mismanagement and political instability that had prevailed in the country. In particular, there were concerns about the inadequacy of a critical mass of skilled and experienced financial sector players. This shortcoming inherently induced undue impediments to Uganda's corporate reporting regime[3]. Further shortcomings were related to the lack of comprehensive financial information and underlying databases[4]. It is now recognized that investment in financial data gathering usually provides the required critical support base for monitoring efforts and for crisis prediction[5] in the financial sector.

Over the years, many lessons have been learnt. For example, it is evident that the financial sector was liberalised before prudential supervisory regulations had been adequately strengthened. As a consequence, unsound banks were allowed to enter the financial system and their shortcomings were not expeditiously addressed. Their presence heightened the cost of intermediation and subsequently led to costly bailouts by the central bank. In addition, the prevalence of asymmetric information and the absence of orderly institutions, adequate accounting standards and credit information agencies which could have helped alleviate this problem constrained effective competition, resulting in higher margins and interest rates with attendant economic costs. Interest rates, in this environment, appeared to have been determined not by the costs of efficient suppliers but rather by the most inefficient ones—in a sense a fundamental contradiction of competitive behaviour. Lastly, there is evidence that in the post liberalisation period, micro enterprises and farmers in small rural communities found it more difficult to access services provided by the formal financial system[6].

It is usually important to develop a framework with a timeframe to monitor and evaluate financial sector reform. Since the country runs a Medium Term Expenditure Framework (MTEF), financial sector reform issues should be accommodated within the MTEF for effective implementation and monitoring. This is mainly because financial sector reforms need to be refocused within the context of a broader country development strategy and in a harmonized manner. Since financial sector reform is a long and complex process that requires a sustained commitment, it is important that an optimal understanding of the dynamics of sectoral reform

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[2] Kasekende and Ssebudde, 2003. Experience of financial sector liberalisation in low income countries, the case of Uganda.

[3] The World Bank and the International Monetary Fund are assisting in the design of reports on the Observance of Standards and Codes (ROSC) and an action plan for Uganda that focuses on accounting, and auditing of financial reporting by public interest entities.

[4] World Bank: Report on the Observance of Standards and Codes (ROSC) Accounting and Auditing; Report on AML/CFT 2005.

[5] See work by Heun and Schlink 2004. Early warning systems of financial crises-implementation of a currency crisis model for Uganda.

6 [6] Kasekende and Atingi-Ego, 1996.Implications of financial sector liberalisation on the domestic financial system, AERC.

ought to be achieved. In addition, reforms of this kind must be sequenced so as to ensure acceptable safeguards. Whether these safeguards are structural, regulatory, or informational, they nevertheless must be firmly in place before broader reform is undertaken. Furthermore, it is also necessary to ensure that key reform factors such as sectoral governance, the prudential framework for financial institutions, and the required degree of independence and solvency of the central bank, are fully guaranteed.

The problem of poor access to formal finance and related services in Uganda has often been associated with efficiency of banks in allocating credit[7], problems associated with the borrowers and finally, problems related to the nature of Uganda's economic environment. These problems in part led to poor access to formal finance. The rural and urban-based small and medium scale enterprises and smallholder farmers need to be empowered if finance can play a critical role in the development process. Innovative financial programmes also need to be designed to encourage private investment in rural agricultural marketing and processing. Such financing mechanisms for the marketing chain require warehouse receipts legislation, and market information systems to be key elements of improved rural and agricultural finance systems.

Financial reform should be situated within the context of the broader country development strategy. In particular, the next phase of financial sector reform requires the promotion of participatory approaches to formulating and implementing financial sector policies. In particular it should support the inclusion of civil society and micro-credit delivery agencies as key players in financial sector development. Furthermore, accountable systems of governance will have to be instituted at different levels to enhance overall effectiveness of technical and financial assistance from development partners. The importance of micro credit institutions suggests the need to institutionalize participatory approaches to the formulation, implementation and monitoring of financial sector development strategies. To enhance development, financial sector reforms should therefore identify clearly the responsible parties and planned actions for each of the identified reform measures[8]. The country reform strategy should be used as a tool for coordination of the various activities in the different sub-sectors, provide a comprehensive view of the financial sector reforms and avoid duplication of efforts. The reform strategy should provide for the coordination of the flow of all financial and technical assistance from all the development partners for financial sector reform.

Long-term development finance has not been readily available in Uganda because development banks have not sufficiently lived to meet their role of mobilising financial resources. The weaknesses in development banks have severed the link between agricultural finance and rural poverty reduction strategies. While Uganda has had no formal financial institution dedicated to agricultural financing and poverty reduction, there have been pressures for a financial institution

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[7] World Bank/IMF: Uganda Financial Sector Assessment Program (FSAP) Update Aide Memoire, March 2005.
[8] World Bank: Uganda: Financial Sector Action Plan (FINSAP) Draft Aide Memoire, November 2005.

entrusted with the responsibilities of initiating effective approaches for the development of agriculture. It is argued that an agricultural bank when established will be committed to raising the economic condition of farmers by making credit and capital inputs available in an easy and smooth manner. Ideally, the agricultural bank will be able to extend credit to small farmers and expand the scope of financing to promote rural small-scale industries. If necessary, the bank should necessarily be permitted to engage in limited banking activities for the mobilization of domestic resources. If approved such a bank should in principle be permitted to provide short, medium and long-term agricultural credit to individual farmers, groups of farmers, corporate bodies and village communities. Such a bank would invest in the processing of agricultural produce, finance cottage industries, storage, warehousing and marketing of produce. To revitalize development banking in Uganda, a number of measures may be required, including appropriate capitalization of institutions, redefining the role and strategy of development finance institutions, significant improvements in management and the nurturing of private participation and partnerships.

The link between financial reform, savings, investment and growth is supposed to be discernible through a number of channels. Finance mobilizes and pools savings; produces information on possible investments so that resources can be channelled to their most productive use; monitors the use of funds; facilitates trading, diversification and management of risk; and eases the exchange of goods and services (Levine, 1997 and 2004). Financial reform measures that contribute towards financial development help reduce poverty by reducing credit constraints on the poor for whom financial market imperfections are particularly binding (Galor and Zeira, 1993). This makes it possible for households to invest in education and for small firms and individuals to make use of new growth opportunities that arise when markets open. The empirical evidence in the case of Uganda however suggests that the link between financial reforms with savings has not been tight despite having some positive effects. In the case of investment, the link has been detected particularly for reforms that directly affected the financial sector (micro reforms) such as improved bank regulation, liberalisation of the securities markets, privatisation of government owned banks and reduction in credit allocation. While the above-mentioned reforms in the financial sector positively affected investment during the period reviewed, it is not possible to conclude as in the case of savings that these effects have been significant. In terms of overall growth, the empirical evidence suggests that Uganda is yet to benefit from the wave of financial reforms that have been undertaken. The limited access to financial services by the poor in spite of reforms, the continued inefficiencies in some institutions, the structural deficiencies and problems with the sequencing of the reforms, may have dampened the positive effects that financial reform could have contributed to growth and poverty alleviation in Uganda.

There are a number of areas requiring extensive research. Some of these areas could not be adequately covered in this paper. The research areas include the need for a comprehensive

analysis of the underlying reasons of the problem of poor access to formal finance and related services of rural and urban-based small and medium scale enterprises and smallholder farmers at different stages of financial sector development. An exhaustive analysis of how well financial sector reforms have been placed in the context of broader country development strategies and agendas in a harmonized manner within national development plans is also required. In addition, an extensive assessment of the role and performance of development banks in the provision of agricultural term finance would be very informative. It is vital to specifically establish the link between agricultural financing within the overall agricultural and poverty reduction strategy and profile viable development options. Finally, research is still required in how countries like Uganda can improve not only the transmission but also the signalling of their monetary policy stances given that implementing monetary policy in the context of shallow markets is judged to be costly and inefficient (IMF, 2006). Monetary policy transmission is a critical link in the design of development oriented financial systems in Sub-Saharan Africa.

I. I BACKGROUND INTRODUCTION

The study reviews existing literature, secondary and primary data and information through interviews with officials of Ministry of Finance Planning and Economic Development, Central bank, Commercial banks and Non-bank financial institutions, private sector organizations, farmers associations, country offices of the World Bank Group and IMF in Uganda. Appropriate qualitative and quantitative techniques and tools are then employed in the analysis. The study provides findings and policy recommendations to be used by the AERC to prepare a synthesis report. The study provides empirical evidence on the nature and consequences of financial sector reforms adopted in Uganda. On the basis of empirical findings, the study provides appropriate policy recommendations to reform the financial system in a manner that will promote sustainable growth, development and poverty reduction.

This study documents the recent trend of financial liberalisation in Uganda and examines its impact on growth, investment and domestic savings. There are many facets in which financial liberalisation could contribute to growth. Some of these mechanisms include lowering of the cost of capital from improved risk sharing. Improved risk sharing may also lead to investments in more risky but high return generating projects. In terms of savings, financial liberalisation can affect both the allocation and the quantity of domestic savings. For example, interest rate liberalisation and a reduction in directed credit are expected to enhance efficiency in the allocation of domestic savings. Also, expansion of the range of financial products or relaxation of liquidity constraints may change the amount of savings. The study has three key goals. The first is to document Uganda's experience from financial sector liberalisation. The second is to investigate whether financial liberalisation spurred economic growth, and investment. The third goal is to establish how financial liberalisation affected domestic savings in Uganda.

Since this study examines time-series data from a single country, Uganda, certain limitations are inevitable. First, for most variables, data are available only for a small number of years while the quantitative measures of financial liberalisation are even available for shorter periods. Given the short span of data, regression analyses is possible only in most parsimonious forms. Also, before-and-after comparisons cannot provide meaningful statistical tests especially since financial liberalisation was implemented progressively over a period of time through many different policies. Application of high frequency data either in a monthly or quarterly format does not provide a tractable solution to the problem, because the relationship between financial liberalisation with growth, investment and savings in young financial systems is probably not so tight. In addition, there are limitations to the availability of high frequency data.

In analysing the impact of financial liberalisation on the growth a growth equation is estimated following the approach of Berkeart, Harvey and Lundblad (2001) and Barro and Sala-I-Martin (1995). The underlying framework is operationalised by adding a variable capturing financial liberalisation. The difference however, is that these two quoted studies analyse the impact of financial liberalisation on several countries in a panel context while the analysis in this paper is conducted in an individual country format. The robustness of the results is checked by considering alternative specifications. The main conclusion was that the results did not differ substantially across specifications suggesting that the aforementioned limitations may not particularly be important in practice. For the analysis of the impact of financial liberalisation on investment, GDP growth in the growth equation is replaced with the ratio of investment to GDP. To determine the impact of financial liberalisation on the quantity of savings, an econometric relationship expressing the private savings rate as a function of the real interest rate and the index of financial liberalisation (or its sub-components) along with income, inflation and government savings is estimated. Again the robustness of the results is checked by considering various specifications.

The overall objective of the study is to examine the experiences and consequences of Bank/IMF supported financial liberalisation and privatisation programs in Uganda to identify appropriate strategies for promoting financial systems that would support sustainable and equitable growth and development by improving access to finance of marginalized sectors in the country. Some of the specific objectives include an analysis of the extent to which Uganda was prepared at the time of embarking on Bank/IMF supported financial sector reforms in terms of ensuring that adequate preconditions, such as the presence of a critical mass of skilled and experienced financial sector players, comprehensive financial information and data base, sound regulatory and supervisory framework and other supportive infrastructure, were in place to ensure successful financial reforms.

The study evaluates the impact of financial sector reforms on savings and investment promotion, sustainable and equitable growth and development and ultimately poverty reduction.

Furthermore, it identifies the pre-requisites and appropriate sequencing of financial sector reforms for promoting savings and investment, sustainable and equitable economic growth and development and ultimately poverty reduction. In addition, it seeks to determine how implementation and impact of financial sector development strategies should be effectively monitored and evaluated. The study analyses the extent and identify the underlying reasons of the problem of poor access to formal finance and related services (payment systems, savings instruments etc) of rural and urban-based SMEs and small-holder farmers in Uganda at different stages of financial sector development. Further more it examines how well financial sector reforms have been placed in the context of broader country development strategies and agendas in harmonized manners and how appropriate reform frameworks should be integrated with country PRSPs/national development plans, and CASs. Finally the study identifies knowledge gaps for further research on the topic.

The structure of the paper is as follows. Section II describes the main channels through which financial liberalisation may affect growth, investment and savings and briefly reviews the relevant empirical literature. Section III describes the financial reform process as it occurred in Uganda. It also investigates the prima-facie evidence of the effects of financial liberalisation. Section III presents the econometric results while Section IV concludes with the policy implications.

II. FINANCIAL LIBERALISATION AND GROWTH

Recent empirical work investigating the link between financial development and economic growth has provided strong evidence that financial development has spurred economic growth in a number of countries. Most of these studies have used panel data sets for a number of countries to investigate the perceived link. For example King and Levine (1993 a, b), examined links between finance and growth in a cross section of 77 developing countries over the period 1960-89. Four financial indicators were used comprising the ratios of liquid liabilities to GDP, the ratio of domestic assets in deposit money banks to domestic assets of deposit money banks and the central bank, ratio of domestic credit to the private sector to aggregate domestic credit and ratio of domestic credit to the private sector to GDP. In addition, four growth indicators comprising of the average rate of real per capita GDP growth, average rate of capital stock growth, the ratio of gross domestic investment to GDP were employed. The study was able to show that each financial indicator was positively and significantly correlated with each growth indicator. In addition, even when the countries were grouped into different income categories using the per capita income growth variable, there was a strong positive relationship.

Fry (1997) used data from a sample of 16 developing countries for the period 1970-88. By applying an iterative three stage least squares, estimates for savings, investment, export growth

and output growth for the 16 individual countries were obtained using systems of equations with cross-equation equality restrictions on all coefficients excluding the intercept. The estimates showed that financial distortions reduced the investment ratio and export growth rates, which in turn lowered output growth. It was also shown that financial distortions lowered output growth via the channel of a reduction in investment efficiency. Finally, due to the importance of growth on savings, it was shown that savings ratios were substantially influenced indirectly by financial distortions through their effects on investment, export growth and output growth.

There is also evidence on the relationship between finance and growth whose emphasis is more focused on stock market indicators rather than bank-based measures of financial development (Arestis and Demetrides, 1997). For example Levine and Zervos (1998) show that various measures of equity market activity are positively correlated with current and future rates of economic growth, capital accumulation and productivity improvement. Bakaert, Harvey and Lundblad (2001) provide additional evidence on the positive effect of financial development on the economy's GDP using a measure of stock market liberalisation as the variable for financial development. Singh (1997) similarly examines the role of stock markets in the financial liberalisation process in developing countries and explores among other things their effects on the financing of corporate growth. However, the findings are contrary to those of Arestis and Demetrides (1997) and Bakaert, Harvey and Lundblad (2001). The conclusion is that despite the importance of stock market development as a part of both internal and external financial liberalisation in developing countries, it is unlikely to help in achieving quicker industrialization and faster economic growth in developing countries. The failure is attributed to the inherent volatility and arbitrariness of the stock market pricing process in developing countries making it a poor guide to efficient investment allocation. Furthermore, it is also argued that the interaction between the stock markets and currency markets in the wake of unfavourable economic shocks may exacerbate macroeconomic instability and reduce long-term growth. In addition, it is suggested that stock market development is unlikely to undermine the existing group banking systems in developing countries.

More recently, studies on the link between financial liberalisation and growth, investment and savings have moved away from the use of a single measure of financial liberalisation to assess its impact. Such studies have involved construction of indices containing information on key financial liberalisation policies pursued by governments and using these to establish the effect. For example Demetriades and Luintel (1996) examined the effects of banking sector controls on financial development and economic growth on India using an index of financial liberalisation. The banking sector controls in the study were measured directly by collecting information on various types of interest rate controls, reserve and liquidity requirements and directed credit programs. The study then generated three indices using the method of principal components; with the first summarizing all interest rate controls in the form of ceilings and floors on deposit and lending rates. The second index summarized all remaining controls, which led to financial

repression, and the third index combined both interest and non-interest controls. The Unrestricted Error Correction Method (UECM) was applied to examine the effect of the banking sector controls measured by the different indices on financial development in India using the ratio of bank deposit liabilities to nominal GDP as a proxy for financial depth. Demetriades and Luintel (1996) It was found that banking sector controls had a negative impact. They then conducted weak erogeneity tests to provide evidence of the causality between financial development and economic growth measured using real per capita GDP and concluded that policies, which affected financial deepening, also had an influence on economic growth.

Bandiera et al. (2000) also constructed an index of financial liberalisation using principal components for each of the eight countries in their study to determine its impact on savings. The index summarized exogenous changes in interest rate regulation, reserve requirements, directed credit, bank ownership, pro-competition measures, liberalisation of the securities markets, prudential regulation and international financial liberalisation by identifying the major moves towards and sometimes away from a more liberalized system. An econometric relationship expressing the private savings ratio as a function of the real interest rate and the index of financial liberalisation, along with income and inflation and government savings was then estimated. The findings of their study on the impact of financial sector reform on savings was mixed with negative results for Korea and Mexico, positive results for Ghana and Turkey and no clear discernible effect for the rest. They concluded that since government savings could be adversely affected by financial liberalisation, it was at best unwise to rely on an increase in savings as the channel through which financial liberalisation could be expected to increase growth.

The empirical evidence relating financial development with savings, investment and growth suggests that the results show substantial variation across countries even when the same variables and estimation techniques are employed. This may reflect differences in the effectiveness of government institutions and other policies undertaken by the respective governments.

III. FINANCIAL SECTOR REFORM ISSUES

3.1 The Ugandan financial system

3.1.1 The banking system

By the end of 2004 the financial system had 15 commercial banks with 131 branches. The majority (12 banks) were foreign owned and controlled 87 percent of the total assets. The banking system is characterized by a limited array of financial products, which are concentrated at the short end of the maturity curve. Only 17 percent of total deposits are time deposits and

only 12 percent of all loans and 35 percent of loan volume had an outstanding maturity of more than one year.

The banking system continues to be affected by high spreads paid by borrowers. These inefficiencies have diminished the role of the banking system in the economy. Net interest margin and overhead costs are high and suggest that inefficiencies arise due higher operating costs, the small size of the sector and low level of competition. Interest spreads, which measure the difference between the weighted average lending and deposit were at about 17 by end December 2005. High credit risk and low level of competition could also be responsible for high interest rate spreads. The lack of credit information sharing, fraud, dysfunctional land and company registries and deficiencies in the insolvency laws and their administration also increases credit risks for banks. Banks incur high evaluation, monitoring and enforcement costs. The smallness of the financial system makes it difficult to exploit the economies of scale and scope[9]. The high cost of financial service provision is also reflected in low ratio of loans to deposits estimated at about 64 percent by December 2005. The structure of banks balance sheets still reflects the high credit risk in the economy, a preference for liquid and low-risk assets and a low level of intermediation. By September 2004, loans constituted only 28 percent of total bank assets. Funds invested in government securities were 29 percent and those invested abroad were 22 percent comprising roughly 50 percent of total sector assets.

Banks asset quality has improved with a very low level of non-performing loans and high capital asset ratios. This reflects a major improvement in the quality of the risk portfolio of banks as well as improved supervision. Non-performing assets fell from 29 percent of the portfolio in 1998 to 12 percent in 1999, and further to 2.6 percent at end of September 2004. The privatisation of the dominant state bank and closure of insolvent small banks were the critical factors behind improvement. The establishment of a credit reference bureau, further improvements in the legal system, fostering competition, improving transparency of banking costs, and broadening access to the payments system could help reduce overhead costs and interest rates in the medium term.

3.1.2 Other financial institutions

Uganda's non bank financial institutions includes 7 credit institutions licensed under the Financial Institutions Act (2003), 4 micro finance deposit taking institutions (MDI's) licensed under the Micro Deposit Taking Institutions Act (2003) both supervised and regulated by the BOU and other smaller institutions involved in micro finance comprised of NGO's, membership based savings and credit associations (such as SACCO's) and community based organisations. Besides these, the pension sector is comprised of only one player the National

[9] This is consistent with the literature indicating that smaller banks and smaller financial systems have higher overhead costs and higher net interest margins relative to total earning assets.

Social Security Fund (NSSF). Term financing is supported by the Development Finance Department of BOU through facilities offered by the European Investment Bank (EIB) at a concesional rate, East African Development Bank (EADB) and the Uganda Development Bank Limited (UDB) which is a government owned development bank currently undergoing restructuring. The financial system is also comprised of the Uganda Security Exchange although its involvement in the financial sector has mainly focussed on the sale of government shares in enterprises where government has divested its shares. As such the core function of mobilising equity finance for private enterprises has not been achieved although a few private enterprises have been able to float some corporate bonds. The insurance industry is very small comprised of 17 companies. The industry is regulated and supervised by the Uganda Insurance Commission (UIC). In general, the industry is concentrated with about 4 companies accounting for over 60 percent of the market share.

Beck, Demirguc-Kunt, and Peria (2005) indicate that there are 15 branches for every 100,000 persons in 48 non-SSA low, middle and high-income countries, yet the average is only 2.5 branches per 100,000 in 35 SSA countries. In Uganda about 87,000 people are served per branch. In addition, critical financial services such as leasing and housing finance continue to be afflicted by the lack of medium to long term funding sources. Further expansion of leasing activity to the small end of borrowers has continued to be limited. The only viable source of term finance has been limited to the European Investment Bank lines of credit extended through the Bank of Uganda. Gaps remain in the provision of deposit and payment services in rural areas and in financing agriculture and rural enterprises. Only 10 percent of rural credit is allocated to agriculture in contrast to the share of 36 percent of agriculture in the economy. Financing of SMEs remains limited with start-ups financed through own funds. Investment climate assessment suggests that a quarter of micro, small and medium enterprises considered themselves credit constrained[10]. Uganda National Household Survey reports indicate that less than 6 percent of enterprise start-ups are financed with borrowings.

3.2 Financial sector reform in Uganda

Although there is no single measure of financial liberalisation, key policies on financial liberalisation in Uganda started in the late 1980s and accelerated during the 1990s. Kasekende et al. (2000) categorized the reform process into three phases with the first phase around 1987 – 1991, followed by the 1992-1994 phase and the last phase after 1995. In this paper an examination of financial sector reforms is implemented using seven measures of financial liberalisation that characterize the process from 1987 through 2005 namely interest liberalisation, reduction in directed credit, prudential regulation, privatisation of financial intermediaries, reserve requirements, liberalisation of securities markets, and pro-competition measures. An

[10] Competing in the Global Economy: An Investment Climate Assessment Report for Uganda, 2004. World Bank, pg 63

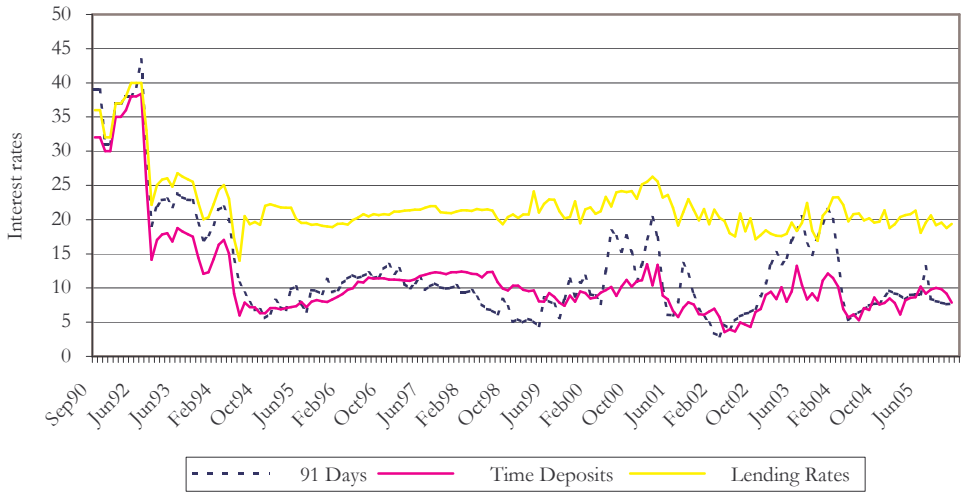
index is then constructed that indicates a gradual progression of the financial deregulation process to date.

3.2.1 Interest rate liberalisation

Interest rate liberalisation was one of the most important measures of financial liberalisation in Uganda. During 1989, government and the central bank made an important first step towards changing the interest rate regulations by adjusting the nominal interest rates to match the inflation rate in a bid to maintain positive real interest rates. However, the key liberalisation measure was effected later in 1992 when the Treasury bill market changed from adhoc issues to a market based auction system through which interest rates were determined. In July 1994, interest rates became fully liberalised and the central bank commenced a new interest rate management regime that used monetary policy instruments with the Treasury bill interest rate as the anchor. The next major development that affected interest rates was the introduction of Treasury Bonds in addition to the existing monetary policy instruments in 2004.

The liberalisation of interest rates in 1994 had two major effects, the first of which was the general reduction in the level of nominal interest rates from as high as 40 percent in 1992 to an average of 20percent. The second effect was by way of improving stability in the interest rates. However, the stability enjoyed in the initial years was reversed as the 91-day treasury bill became eratic during 2000/01 and 2003/2004 partly caused by the increased need to sterilise government expenditures of huge donor inflows using treasury bills. After the introduction of the Treasury bond in the third quarter of 2003/04, more stability in interest rates has been observed. Generally, the introduction of bonds had two major effects in the financial market. The first effect was the reduction in interest rates and the subsequent extension of the yield curve. The second effect was the promotion of the secondary market by increasing the turnover. Nonetheless the spread between deposit and lending rates increased after freeing of interest rates as Commercial Banks increasingly shunned lending to the private sector in preference to government securities. This supply of government securities has essentially subdued the competition for loan extension to the private sector sustaining the high lending rates (relative to the deposits rates) to the more risky private sector borrowers. Figure 1 below shows these developments in interest rates.

Figure 1: The evolution of indicative interest rates in the financial system



Source: Bank of Uganda

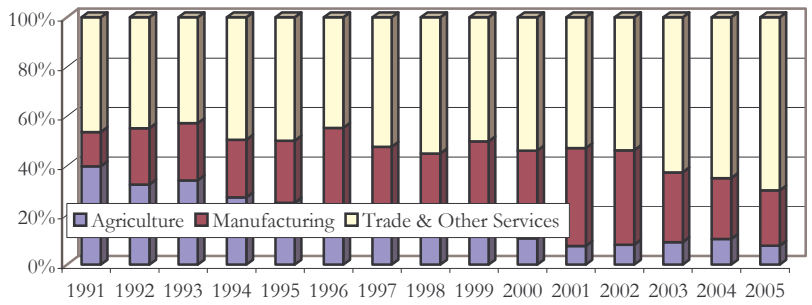
3.2.2 Reduction in directed credit

Directed credit refers to the loans that are completely or partially financed through borrowing from the government or the central bank. Naturally, the allocation of directed credit is heavily regulated. As early as 1988, the key policy change in regard to directed credit occurred when the central bank withdrew the responsibility of coffee financing from commercial banks. The direct financing of coffee procurement by the central bank was however reversed in 1991. In the next year at about the same time when the auction based Treasury bill market was implemented, the gradual removal of directed credit commenced with the reduction in the directed and subsidized lending via the rural farmers schemes. However, directed credit continued under the Development Finance Department (DFD) at the central bank to provide term finance initially to export oriented production and later to other sectors.

The immediate impact of a reduction in directed credit is illustrated by the subsequent change in the sectoral shares of credit over the liberalisation period. One notable development here is that the share of credit directed to agriculture has declined from 34 percent in 1991 to 10 percent in 2005 as shown in Figure 1. One could associate this development with the declining contribution of agriculture to GDP. However, on further scrutiny, the high shares in the past reflected the efforts by government to award preferential treatment to the sector under direct controls. Moreover, in the post liberalisation era, a significant proportion of banks considered agricultural activities as highly risky with no insurance schemes developed to mitigate risks. As more lucrative pre-financing of coffee exports shifted to offshore external financing sources, commercial banks opted for more expedient financing of trade and commerce, the shares of

which have increased from 1991 to 2005. Figure 2 below depicts the redistribution of credit across sector.

Figure 2: The evolution of sectoral allocation of credit in the banking system



Source: Bank of Uganda

While credit extension to agriculture dropped significantly with the reduction in credit allocation, the other major development which affected the banking system as a whole was the reduction in macro instability caused by excessive lending to the public sector banks that were extending the bulk of directed credit. The excessive lending to these banks coupled with very low recovery rates on the funds on-lent by the banks contributed to the insolvency and acute liquidity problems faced by both UCB and Cooperative bank. These problems were further exacerbated by the fact that these two banks were by far the largest banks in the country with the most extensive branch network.

3.2.3 Privatisation of banks

A number of commercial banks in Uganda were either government-owned or jointly owned by government and foreign banks. Government faced a number of criticisms, including the fact that government-owned banks were inefficient. Inefficiencies generated high intermediation margins on one hand and a high level of non-performing assets on the other. In addition government institutions directed credit to selected sectors at artificially low interest rates. In response to these criticisms, government undertook to privatise most of its banks in the 1990s. In 1994, Government sold its shares in 3 banks jointly owned with foreign banks. The divestiture of ownership involved the sale of the government's 49 percent stake in one of the largest commercial bank in the country, the Uganda Commercial Bank in 1996. The sale of the cooperative bank was initiated after an unsuccessful attempt had been made at recapitalisation. However, government in 1999 later reversed the initial sale and the bank was placed under management of Bank of Uganda until 2003 when it was resold to a foreign owned bank.

Government also divested its shares in Bank of Baroda and DFCU Bank through the Uganda Securities Exchange in 2002 and 2004 respectively.

3.2.4 Authorisation of new banks

Authorization of new banks by government was limited and used as an entry barrier. However, in the period between 1991 and 1996, the number of banks increased from 9 to 20 as entry requirements were eased particularly for domestic owned banks. However, in 1996, a two-year moratorium on bank licensing was imposed. During the same period, two weak banks were restructured and sold to new strategic investors while one was closed. The period 1997 to 2000 saw instability in the banking sector as a number of private domestic owned banks became insolvent. Bank of Uganda took over two banks and wound up three banks. In 1997, the moratorium on bank licensing was extended.

3.2.5 Securities market liberalisation

The liberalisation of foreign exchange and capital markets is broad and complicated processes. With this in mind, this study focuses particularly on the creation of the Uganda Securities Exchange and the opening up of the bill and bond markets as an indicator of capital market liberalisation. The security market's liberalisation was initiated in 1996, when the Capital Markets Authority was set up followed by the creation of the Uganda Securities Exchange in 1997. The concurrent lifting of exchange controls on the capital account in 1997 made it possible for foreign players to participate in the security market either directly or through intermediaries such as banks. Subsequently, one could argue that the stock market was first opened up in 1997, by allowing foreign investors to purchase shares.

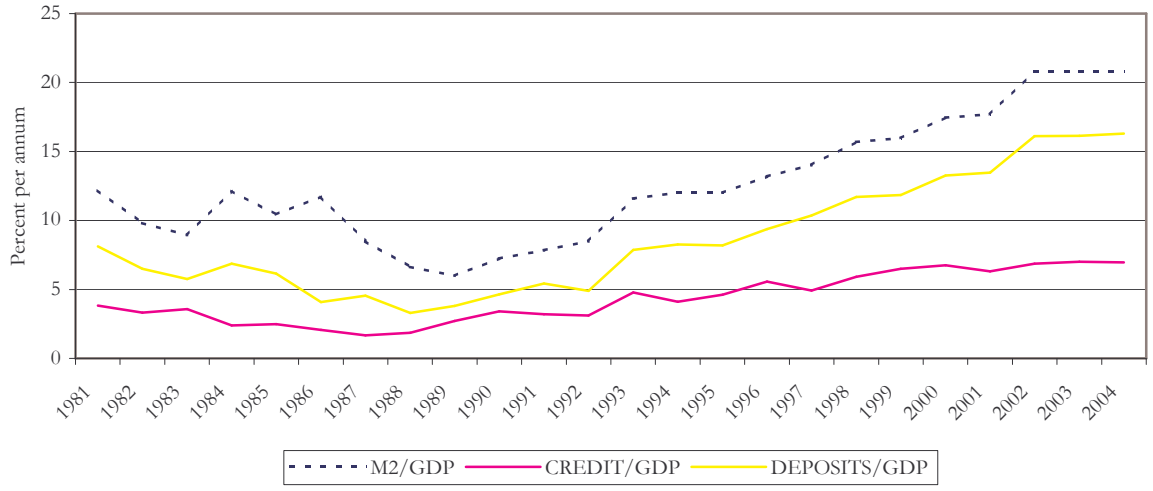
3.2.6 International financial liberalisation

After pursuing a fixed exchange rate regime for more than a decade, controls were gradually removed beginning with the adoption of a dual exchange rate regime in 1986. In 1990, the parallel foreign exchange market was given a "green light" to formally operate when dealers were granted legal status. This was followed by the adoption of a foreign exchange auction system marking the main transition towards a market based exchange rate system. To back these developments in the foreign exchange market, the complete elimination of restrictions on current account transactions was undertaken to supply the market with foreign currency. This in effect made the country to conform to the Article VIII status of the IMF Agreement, prohibiting imposition of restrictions on current account transactions. However, controls on capital account transactions were maintained, with some modifications to permit foreign direct investment and the return of expropriated properties to the Asians who had been expelled in the 1970s. In July 1997, the capital account was liberalised and residents were henceforth allowed to

move capital to and from the country and hold foreign-denominated instruments including operating foreign exchange accounts in the domestic banking system and outside the country. Likewise, non-residents were also permitted to bring in capital for investment and take it out without hindrance. The reforms in the foreign exchange regime reinforced confidence in Government's commitment to prudent fiscal and monetary policies to support the exchange rate.

Overall the financial sector reforms have influenced the financial sector positively as depicted by the ratio of M2/GDP, which has significantly risen from a about 6 percent in 1986 to a level of about 22 percent in 2005 as confidence builds up in the financial system. The removal of controls on interest rates and directed credit in addition to the liberalisation of exchange rates and capital account have contributed to an increase in intermediation of the financial sector as illustrated by the gradual increase in the ratio of credit as a share of GDP. Savings have equally risen over the period to provide some support to the growing level of domestic investment in the economy Figure 3 below shows trends in some financial sector indicators.

Figure 3: Some indicative financial sector aggregates



Source: Bank of Uganda and International Financial Statistics IMF

3.3 Uganda's state of preparedness for the reforms and pending challenges

COMPLEMENTARY FACTORS TO UGANDA'S FINANCIAL SECTOR REFORM

The international experience over the past 20 years indicates that there are five key pre-requisites for successful financial liberalisation (Fry 1995). These include adequate prudential regulation and supervision of commercial banks, implying minimal levels of accounting and legal infrastructure and a reasonable degree of price stability. In addition, fiscal discipline taking the form of a sustainable government borrowing requirement that avoids inflationary expansion of reserve money by the central bank either through direct borrowing by the government or through the indirect effect of government borrowing that produces surges of capital inflows requiring large purchases of foreign exchange by the central bank to prevent exchange rate appreciation. Furthermore, profit-maximizing, competitive behaviour by the commercial banks should be guaranteed and a tax system that does not impose discriminatory explicit or implicit taxes on financial intermediation.

In terms of the first pre-requisite, adequate prudential regulation and supervision of commercial banks, there was a parallel move to improve supervision of financial institutions while at the same time implementing some key reforms in the financial sector. Regulatory improvements started with the introduction of the Financial Institutions Statute (FIS) in 1993. A number of examination reports were revised in line with the FIS and generally adequate supervision procedures were adopted. However, in terms of international standards regarding effective bank supervision, a number of core principles particularly those related to ensuring that minimum standards of internal policies, procedures and controls related to risk management were not adequately enforced. Banks asset quality was poor for a number of institutions with very high levels of Non-performing loans some of which the central Bank was not aware off. Indeed, developments during the second half of the 1990's such as the closure of International credit bank in 1998, followed by Cooperative bank, Greenland bank and Trust Bank in 1999 demonstrated non-adherence by the respective banks to such minimum standards. Other issues that required dealing with as shown by the developments in 1998 and 1990, included the need to respond in a timely manner to problem situations in addition to the need to establish a system of records and accounts that provided better information for analytical purposes.

Following the developments during the late 1990's, it became imminent that there was need to take corrective action in as far as the regulatory and supervision regime was concerned. Consequently, the central bank undertook a massive recruitment drive to augment the existing staff in the supervision department. The regulatory framework was revamped through the enactment of the Financial Institutions Act (FIA) 2003 complemented by the Micro Deposit Institutions (MDI) Act 2003, which extended the supervisory role of the central bank to micro-financing institutions that were licensed to take deposits from the public. A key change in the supervisory regime, which was lacking in the earlier regime and must have negated some of the

potential benefits of liberalising the sector, is the emphasis on identification of risks faced by financial institutions in addition to assessing their capacity to manage the risks.

On price stability, it is evident that a number of key steps to ensure stable prices were undertaken early enough as a way of providing sufficient pre-conditions for the reforms pursued in the financial sector. The process of economic reform and rehabilitation of the economy infrastructure that started in 1987 with the key objective of restoring macroeconomic stability, involved bold measures to withdraw governments involvement in commercial activities and the removal of official price controls. Measures were taken to bring down inflation from high double-digit levels to low and stable single-digit levels. The liberalisation of interest rates, foreign exchange arrangements and bank credit were therefore facilitated by the presence of a conducive inflation regime.

In terms of fiscal discipline, government was able early on to demonstrate its commitment towards ensuring fiscal discipline earning Uganda strong support from the international community. The support, which came in form of large inflows in donor financing, was instrumental in sorting out the major fiscal and external balances that prevailed. In April 1998, Uganda became the first country to reach the competition point and to access the original HIPC later followed by additional resources from the enhanced HIPC in May 2000 in recognition of the fact that even after having pursued appropriate macroeconomic policies, the outstanding stock of debt remained unsustainable. While there have been a few slippages in regard to fiscal expenditures there has been a clear demonstration from the authorities of the desire to ensure that fiscal discipline is maintained. It is therefore worth noting that in terms of the precondition for the maintenance of fiscal discipline, the environment has been supportive of the financial liberalisation policies. The biggest challenge has however, been on the front of dealing with the large donor funds received by the government which the central bank has had to sterilise from time to time in order to keep inflation at bay. The sterilisation efforts have to some extent countered the positive effects of financial liberalisation such as improvements in credit allocation to the private sector. This has generally been manifested through the exertion of pressures on interest rates resulting in unusually high and sometimes damaging interest rate volatility and the preference for banks to invest in the less risky government securities as opposed to the private sector.

A key constraint towards improved profit-maximization and competitive behaviour within the banking sector was on account of the state owned Uganda Commercial Bank Limited (UCBL). UCBL was the largest bank accounting for as much as 50 percent of the banking systems deposits and loans in the mid-1990 (Bank of Uganda Supervision reports 1999 - 2004) with the largest branch network nationwide. However, while UCBL held both the largest share of deposits and loans[11], it equally had the largest share of non-performing loans in addition to high

[11] The high level of non-performing loans held by UCBL was one of the key reasons the Non-Performing Asset Recovery

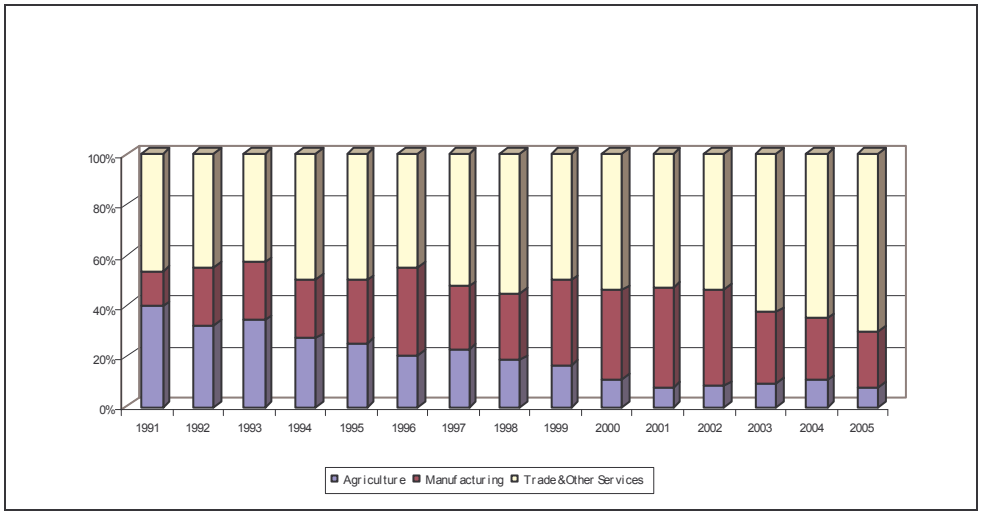
intermediation. A large number of other public owned banks had similar problems. Subsequently, there was an urgent need to privatise all public banks including UCBL, which culminated in its eventual sale in 2003 after an initial attempt that resulted in its placement under Bank of Uganda management. However, its previous abortive privatisation and the ensuing placement under the statutory management of the monetary authority posed serious set-backs in the financial reform agenda due to distortions in the money and treasury bill markets as a result of its constrained behaviour under the central bank. The restrictions on credit extension also affected real sector activity especially since the bank held the largest share of deposits in the banking system undermining the entire sectors intermediation role. Nonetheless, in addition to the privatisation of public banks, the authorities toned down on the role of the state in the allocation of credit and eased the entry of new banks and exit of non-viable banks. All of these measures were intended to spur competition among banks. The ex-ante analysis suggests that the delayed privatisation of the UCBL had its toll on the poor performance of the entire banking sector as demonstrated by low profitability in the 1990's when most of the financial liberalisation policies were undertaken.

As a result of the lack of preparedness and the delays in resolving certain key issues in the financial sector such as the delayed privatisation of UCB a number of key challenges particularly in regard to the accessibility of formal finance and related services for urban and rural based SME's and small holder farmers have persisted. Some of these challenges include the need to deepen the reach of the financial system. The banking system and financial sector need to be extended to expand reach of a wider range of services to a greater number of people to strengthen the role of the financial sector in supporting economic growth. Extending reach requires refocusing micro finance outreach plan and restructuring of the SACCO sector. There is also need to develop non-prudential regulations and standards for credit only Micro Finance Institutions. Commercial banks also need to develop micro finance and rural finance products that reach a greater number of people. Support to efficient forms of micro finance delivery is required at the policy level to improve outreach. However, distortions resulting from government interference in micro finance delivery will need to be minimized. It is important to expand access to the payment system and license new institutions in accordance with the Micro Deposit Institutions Act. The MDI's have been the key elements of Uganda's sustainable outreach expansion placing Uganda at the forefront of micro finance delivery in sub Saharan Africa. Basic mandatory prudential standards, governance and transparency requirements should be established and enforced in the existing SACCOs.

There is a challenge related to access as well cost of credit. Other challenges to Uganda's financial system are reflected in low monetary depth as shown in Figure 3 and high interest rate spreads as shown in Figure 4.

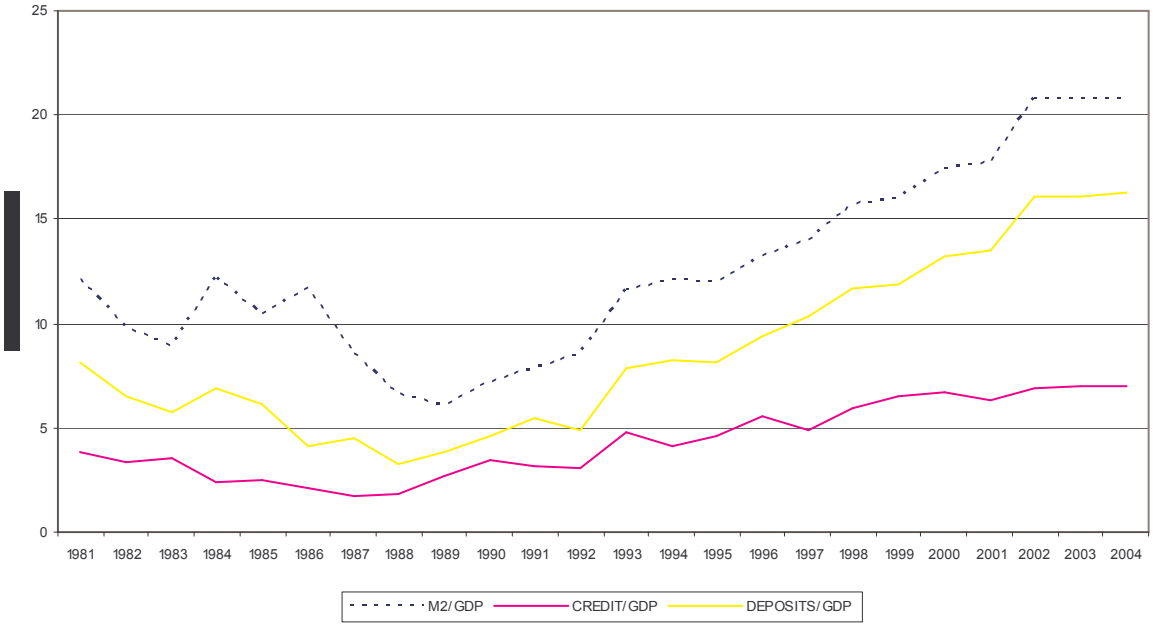
Tribunal (NPART) was set up with the objective of resolving the banks bad debts.

Figure 4: The evolution of sectoral allocation of credit in the banking system



Source: Bank of Uganda

Figure 5: Some indicative financial sector aggregates



Source: Bank of Uganda and International Financial Statistics IMF

There is also the challenge to improve the efficiency of the financial system via measures that foster greater competition. Increased competition will help lower cost while greater efficiency will lead to better service provision. It is important to create an environment that fosters competition in the credit market through an appropriate legal framework. The central bank needs to promote transparency, disclosure and consumer rights education relating to financial service provision. Greater disclosure of non-interest charges and fees will foster competition and improve efficiency. The new FIA allows for information sharing between financial institutions, easy and reliable access to client credit history from a credit reference bureau can reduce the cost

and time of obtaining such information, lowering the overall costs of intermediation and increases the cost of defaulting on ones obligations. Credit information sharing has the potential to expand the bankable population of households and enterprises making it easier to evaluate the credit worthiness of smaller firms. By including all institutions supervised by the Bank of Uganda in the credit information system, segmentation of the financial system can be reduced, competition fostered and efficiency generated.

Another challenge is in the design of institutions to support financial system activities. Supportive measures are required to enhance the operation of land and company registries, overhaul the corporate insolvency regime and supporting taxation framework via the passage of new insolvency legislation that gives creditors the right to commence bankruptcy procedures strengthen institutional capacity of commercial courts and receivers. Lack of accurate and reliable information on borrowers and their assets, due to deficiencies in the in the land and company registries increases the cost of credit. The land registry remains unreliable, with files regularly lost or misplaced and lengthy delays are common. Information at the company registry is unavailable and even available files are an unreliable record.

There is also a critical challenge to promote term financing, savings and the development of capital markets (World Bank, 2006 a). Already the restructuring and improvements in the governance and investment process of the National Social Security Fund (NSSF) are identified as critical factors in financial sector reform. Critical skills in asset management will be required while further reforms in the pension sector will be needed to remove the monopoly of the NSSF. In addition the public service pension's scheme needs to be evaluated with a view to establishing a more durable contributory trust fund. The same types of reforms need to be extended to Uganda Development Bank and the Housing Finance Company of Uganda in order to increase private sector participation. It is important to phase out distortions in the provision of term finance to support economic growth. Pension reform could have a significant positive impact in providing protection to Ugandans in old age and stimulate savings and the development of the market for longer-term finance. Since domestic savings play a critical role in the mobilization of resources to support investment, it is important to restructure the pension system, promote long-term financing and develop capital markets. Critical reforms in these areas have the potential to unleash markets that will provide instruments for the population to save and invest. The reform of the Uganda Development Bank and the pension system will increase term financing necessary for growth. The establishment of the regulatory authority for pensions, insurance and the capital markets is therefore a critical requirement.

It is important to strictly implement the new regulations that are contained in the Financial Institutions Act that was passed in 2004. The provisions of the legal instrument are important especially as the country moves towards risk based supervision. The challenges are likely to increase as the financial system becomes more competitive and the market more sophisticated.

There are also challenges related to the establishment of investment regulations for insurance companies and the establishment of a deposit insurance fund, which is a separate entity from the central bank. The governance of the fund needs to be improved and its assets invested in high return investments to protect the value of the fund. The institutional capacity of the Uganda Insurance Commission needs to be significantly developed (World Bank 2006 a).

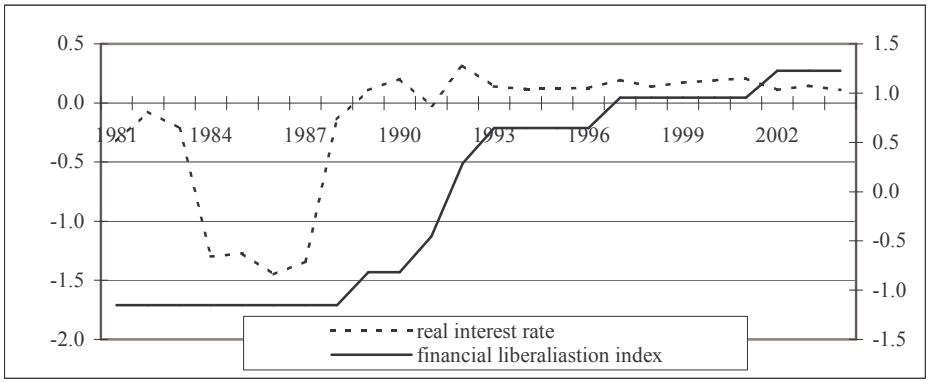
The challenge of developing a rate that signals monetary policy stance remains. Significant improvements have been registered in the area of liquidity management. Liquidity forecasting continues to improve since it benefits from regular liaison between the Bank of Uganda and the Ministry of Finance, Planning and Economic Development. Steps have also been undertaken to develop a comprehensive strategy for the management of government debt. Projects accounts are being transferred from commercial banks to the central bank in a cautious manner; however, monetary policy signalling needs to improve in order to anchored market expectations and reduce interest rate volatility (World Bank 2005).

3.4 Financial reform, growth, investment and savings

In this section a preliminary examination of how financial liberalisation affected domestic growth, investment and savings in Uganda is investigated. A number of studies have used proxies to undertake the assessment including but not limited to outcome measures for market development. However, arguments against this kind of analysis are based on the grounds that it may lead to ambiguity in interpretation and endogeneity problems (Bandeira et al 2000). Initially an index that measures exogenous changes in key variables is derived. The key variables include interest rate regulation, directed credit, bank ownership, pre-competition measures, developments in the securities markets, prudential regulation and international financial liberalisation. Appendix 1 provides the underlying details regarding construction of the index.

A positive relationship is observed between the index of financial liberalisation with real interest rates, financial depth as measured by the ratio of M2 to GDP, private credit, private savings, investment and per capita GDP. The positive relationship is also confirmed by the bivariate correlation coefficients. The correlation coefficient is highest with per capita GDP and least for the correlation with real interest rates.

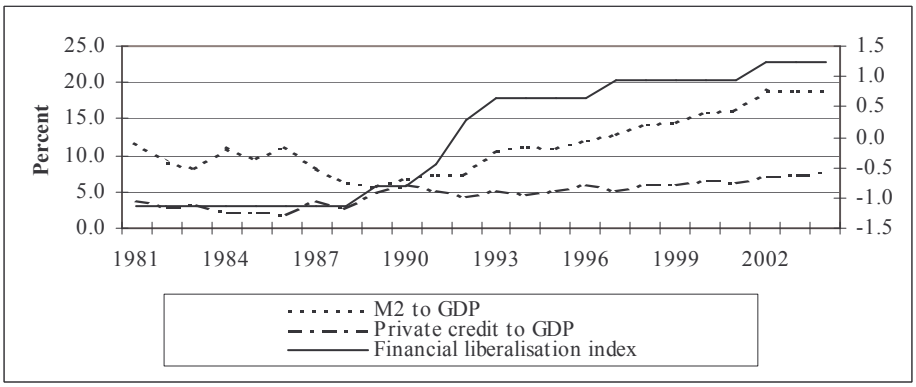
Figure 6:Real interest rates and the financial liberalisation index



Source: Derived from data from Bank of Uganda, World Bank and International Monetary Fund

Figure 6 above generally shows a positive relationship between the index and real interest rates particularly after 1988 when the index follows an upward trend. The real interest rate is observed to rise sharply beginning in 1986 from negative values to positive values in 1989. The period between 1989 and 1992 depicts some volatility in the real interest rate followed by a period of stable real interests starting in 1993. The volatility of real interest rates is explained by the move towards adjustment of interest rates in line with changes in inflation in a period when inflation rates were volatile. However, the period of stability which starts around 1993 is mainly due to the move towards market determined interest rates that begun in 1992 when the rate was linked to the treasury bill rates and the eventual full liberalisation in 1994.

Figure 7: Measures of financial depth and the financial liberalisation index

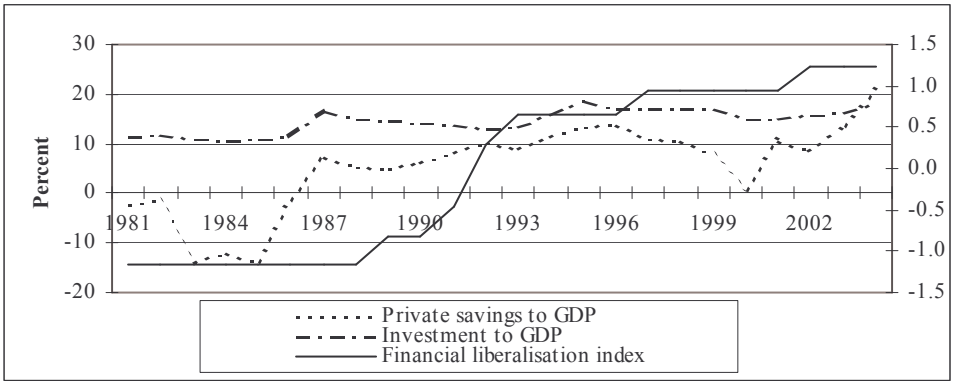


Source: Bank of Uganda, Uganda Bureau of Statistics, World Bank and International Monetary Fund

Figure 7 shows the index along with the alternative measures of financial depth suggest a closer relationship between the index and private sector credit compared to M2. It is noteworthy that bivariate correlation coefficients between the index and both measures of financial depth support a positive relationship. Nonetheless, it should be noted that private sector credit as a ratio of GDP pickeds up around 1986 (much earlier than the ratio of M2 to GDP) on account of mostly policies relating to directed credit to the agricultural sector through the rural farmers

scheme introduced in the early 1980s and the coffee farmers scheme introduced in the late 1980's.

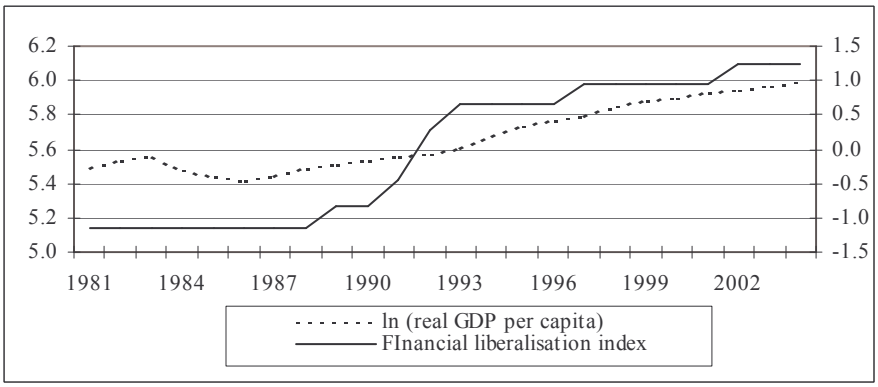
Figure 8: Private savings, investment and the index of financial liberalisation



Source: Bank of Uganda, Uganda Bureau of Statistics, World Bank and International Monetary Fund

Whereas the ratio of investment to GDP appears to be positively correlated with the index of financial liberalisation, savings as a ratio of GPD does not seem to have a clear positive association with the index. For the period 1996 to 2000, there appears to be a negative relationship between savings and the index. For instance beginning 1996 up to 2000, the ratio of savings to GDP plummets despite the implementation of a number of reforms during this period such as the liberalisation of the capital account and the licensing of the Uganda Securities Exchange before recovering gradually thereafter. This could be partly due to the closure of a number of insolvent domestic banks[12] and adverse weather conditions[13] that affected output during the late 90's.

Figure 9: Real per capita income and the index of financial liberalisation



Source: Bank of Uganda, Uganda Bureau of Statistics, World Bank and International Monetary Fund

[12] International credit bank was closed in 1998 while Cooperative bank and Greenland bank were closed in 1999.

[13] Uganda experienced heavy rainfalls (El Ninho) that caused flooding in large parts of the country adversely affecting the agricultural sector. Prior to the heavy rainfalls there had been an equally devastating drought impacting on the same sector.

In terms of overall output, the index appears to be positively related with GDP as shown by the Figure 9 above. It is worth noting that the lower quarter of real GDP per capita (1981 to 1986 stayed more or less flat (fluctuating around a narrow band) as several controls on trade and the financial sector were maintained. However, with the onset of liberalisation, starting around 1988, real GDP per capita continued its upward trend, which started around 1987, rising through the reform period. This could also be attributed to the positive impact of other macroeconomic reforms such as reigning in inflation and efforts towards reduction of the fiscal deficit that were undertaken by government under the Economic Recovery Program adopted in 1987.

IV. ECONOMETRIC EVIDENCE

The analysis begins by estimating a growth regression over the period 1981 to 2004. In the benchmark specification, the natural log of real GDP per capita is modelled as a function of government consumption, human capital proxied by labour growthsecondary school enrolment, and population growth as the explanatory[AG1] variables following Barro[14] (1991) and more recently Bekaert, Harvey and Lundbland (2001). These measures are augmented with a variable for inflation. The choice of variables included in the sample is partly determined by the availability and partly the length of the sample period. For instance Barro and Mccleary (2003) and Bakaert et-al 2001 included a variables on secondary school enrolment and life expectancy in the estimated growth regressions. However, there is no sufficient time series data on this ese two variable because the available data has several gaps. An assessment of the impact of financial liberalisation by including an index of financial liberalisation[15] in the growth equation is implemented. To determine the impact of liberalisation on investment, a modification of the growth equation is effected by substituting the endogenous variable with investment expressed as a ratio of GDP and an additional exogenous variable on real deposit interest rates. On the impact of financial liberalisation on savings, private savings expressed as a ratio to GDP is modelled as a function of the real interest rate, inflation rate, government savings and the index of financial liberalisation. As in the case of the growth equation, both length of the period and availability limits the choice of the variables. The index of financial liberalisation is also decomposed into two components one to reflect bank and securities market specific reforms labelled micro financial reforms and the other affecting overall performance of the financial sector labelled macro financial reforms. Specifically, the micro reforms include reforms on bank regulation, reserve requirements, bank ownership, liberalisation of the securities markets while macro reforms include interest rate liberalisation, exchange rate liberalisation, current and capital account liberalisation and pro-competition measures.

[14] For a theoretical framework on the adopted growth model see Barro R, J (1989).
[15] See appendix 1 on the construction of the financial liberalisation index.

4.1 Growth and investment

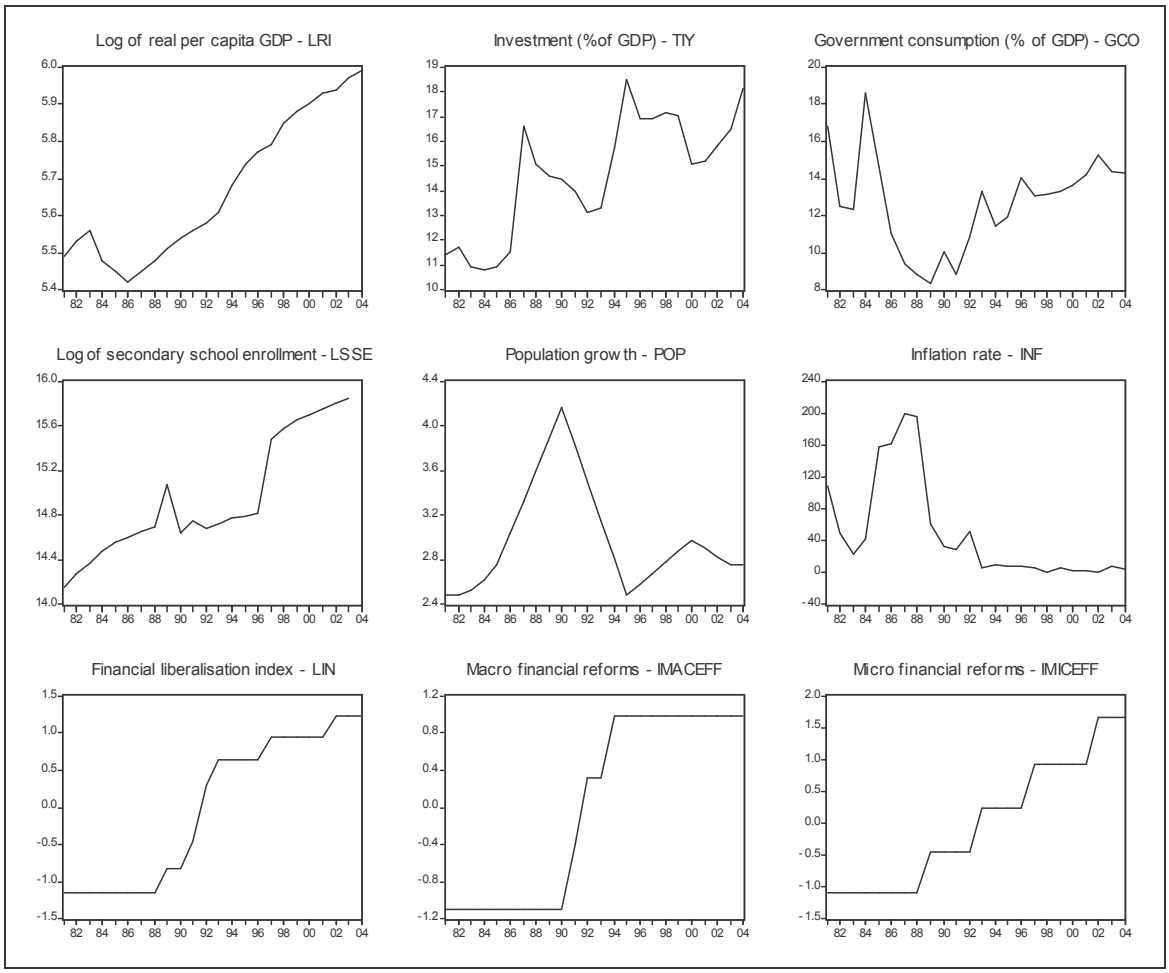
Increased savings or financial deepening is not viewed as an end in and of itself. The hypothesis is that savings are intermediated by the financial sector towards real investment with beneficial effects on the economy. An assessment of data for the last 20 years reveals that Uganda achieved a high rate of economic growth with relatively low domestic savings, most of the investment that took place appears to have been funded by resources mobilized from abroad. Although domestic savings have been increasing, they are still at relatively low levels and seriously limit the scope for financial intermediation in the growth process.

One channel through which financial liberalisation and privatisation can affect poverty is through economic growth. The existence and strength of the link between financial liberalisation and poverty depends on the existence and strength of the links between, first, financial liberalisation and growth and, second, between growth and poverty. As discussed above, financial sector reforms may have contributed to the high rate of economic growth suggesting a link between financial sector reform programmes and economic growth. Although economic growth represents increased output for a country in general, there is no guarantee that the gains from growth will be distributed evenly among the various groups or regions. According to the World Bank 2001, for a given rate of growth, the extent of poverty reduction depends on how the distribution of income changes with growth and on initial inequalities in income, assets and access to opportunities that allow poor people to share in growth.

Before turning to the actual estimation of the equations, an examination of the properties of the underlying data was effected. Testing for stationarity of the time series was done to ensure that the variables used in the regressions were not subject to spurious correlation. Figure 8 suggests that the variables for growth, investment and the financial liberalisation are non-stationary although they could be trend stationary.

However, casual observation of the variables for laboursecondary school enrolment, population and government consumption presented in Figure 8 does not provide conclusive evidence on whether they are stationary or not. The augmented Dickey-Fuller test (ADF) is therefore employed to test for unit roots in the data. Table 1 summarizes the results of the stationarity tests for all six variables and the micro and macro components of the financial liberalisation index.

Figure 10: Plot of variables for growth, investment and financial liberalisation



Source: Bank of Uganda, Uganda Bureau of Statistics, World Bank and International Monetary Fund

Table 1: Growth and investment: Testing for unit roots

Variable	Lag length	ADF test statistic	Prob.*
Real per capita income	0	-1.825	0.66
Investment	1	-2.955	0.17
Government consumption	0	-2.680*	0.09
Secondary school enrolment	0	-2.058	0.54
Population growth	1	-3.122**	0.04
Inflation rate	0	-1.651*	0.09
Financial liberalisation index	1	-2.098	0.52
Macro financial reforms	0	-1.204	0.89
Micro financial reforms	2	-2.986	0.16

Notes. The sample period is 1981 to 2004. Two stars indicate significance at 5percent level, one star at 10 percent level.
Source: Computed from data from Bank of Uganda, Uganda Bureau of Statistics, World Bank and International Monetary Fund.

As suggested by the graphical analysis, the variables for per capita income, investment and financial liberalisation are not stationary, while the population and government consumption

variables are stationary. In addition, the two components of the liberalisation index are individually not stationary. Labour growth and Secondary school enrolment are also not stationary. Variables for per capita income, investment, secondary school enrolment and financial liberalisation were detrended by regressing the respective variable on a constant, a time trend and its own significant lags. The variable for labour was regressed on a constant and its own significant lags. The resulting residuals from these regressions were then used as the detrended series in the subsequent analysis. Table 2 shows the tests for unit roots for the new per capita income, investment, financial liberalisation and labour variables.

Table 2: Growth and investment: Testing for unit roots for the detrended series

Variable	Lag length	ADF test statistic	Prob.*
Real per capita income	0	-3.779**	0.04
Investment	0	-3.675*	0.05
Secondary school enrolment	0	-4.459**	0.01
Financial liberalization index	1	-4.282**	0.01
Macro financial reforms	0	-4.485**	0.01
Micro financial reforms	2	-4.785**	0.01

Source: Computed from data from Bank of Uganda, Uganda Bureau of Statistics, World Bank and International Monetary Fund.

Having established the order of integration, estimation was effected using ordinary least squares (OLS) the impact of financial liberalisation on growth and investment. Regression estimates of equations for growth and investment excluding the variable for financial liberalisation were first obtained followed by re-estimates of the same equations including the financial liberalisation index. Table 3 summarizes the results for the growth equation, growth equation with the liberalisation index and growth equation with the macro and micro financial policy reform measures.

Table 3: Growth regression estimates

Variable	Growth equation	Growth equation with liberalization	Growth equation with macro policy reforms	Growth equation with micro policy reforms
Constant	0.3247	0.3010	0.3019	0.2917
	*5.7669***	*6.0892***	*5.4855***	*5.1181***
Government consumption	-0.0130	-0.0127	-0.0128	-0.0123
	*-5.8209***	*-6.6097***	*-5.8789***	*-5.5830***
Secondary school enrolment	-0.0233	-0.0098	-0.0273	0.0204
	-1.0285	*-0.4956*	*-1.3146*	*0.8994*
Population growth	-0.0504	-0.0436	-0.0439	-0.0427
	*-4.5894***	*-4.5328***	*-4.1464***	*-3.8807***
Inflation rate	-0.0002	-0.0002	-0.0002	-0.0002
	*-3.3129***	*-4.5573***	*-3.8793***	*-3.7191***
Financial liberalization index		-0.0451		
		*-2.2177***		
Macro financial reforms			-0.0202	
			-1.2287	
Micro financial reforms				-0.0075
				-0.4133
R-squared	0.7014	0.7805	0.7352	0.6994
Adjusted R-squared	0.6312	0.7073	0.6469	0.6054
LM Test	0.0744[0.92]	1.5334[0.25]	0.8188[0.46]	1.5748[0.24]
Ramsey RESET Test	0.0443[0.96]	0.2081[0.81]	0.3238[0.73]	0.6340[0.54].
Log likelihood	61.2745	63.3766	61.4059	63.3342
Durbin-Watson stat	1.8578	2.4612	2.4582	2.4989

Notes: Figures in italics are t statistics. Two stars indicate significance at 5percent level, one star at 10 percent level..
Source: Regression estimates by the authors

Population growth has a significant negative coefficient suggesting that a growing population is more likely to cause lower growth rates of GDP. In addition, government consumption expenditure also has a negative significant effect on growth implying that a large government sector over the period negatively affected growth. Both Bakaert et al (2001) and Barro and Sala-I-Martin (1995) found a negative significant negative effect of an increasing government sector on growth. Secondary school enrolment had a negative effect on growth suggesting that benefits to growth from increases in human capital have not been realised over the period. However, the coefficient was not statistically significant at both the 5 and 10 percent levels. This is inconsistent with findings of the studies by Jeanneney and Kpodar (2005) and Bakaert et al (2001) who establish a positive effect from the variable for human capital on growth. As expected inflation had a highly significant negative effect on growth although small when compared to the population growth and government consumption effects on growth.

The introduction of a financial liberalisation variable and variables for the macro and micro financial policy measures did not significantly alter the coefficients of the other variables neither did it alter their significance. The coefficient for the financial liberalisation is negative and statistically significant suggesting that financial liberalisation may have negatively affected

growth. It was not possible to determine whether the negative effect was driven by the macro or the micro policy reforms although both coefficients were negative. However, it is possible that the lack of unpreparedness for some of the key reforms in the financial sector particularly in terms of an adequate regulatory and supervisory body in addition to other factors may have dampened the potential benefits to growth from financial sector liberalisation.

A modified growth equation was estimated by including an additional exogeneous variable of real deposit interest rates and investment expressed as a ratio of GDP to examine the impact of liberalisation on investment. The rationale for the regression stems from the fact that the variables that affect output growth also affect the components of GDP. Per capita growth and the investment ratio tend to move together for example an exogenous improvement in productivity tends to raise the growth rate as well as the investment ratio (Barro, 1991). Using the ratio of investment to GDP, an attempt is made to determine how financial liberalisation together with the other factors in the growth equation affected investment. Table 4 presents the regression estimates.

Table 4: Investment regression estimates

Variable	Investment equation	Investment equation with liberalization	Investment equation with macro policy reforms	Investment equation with micro policy reforms
Constant	11.199	12.120	12.539	11.225
	*2.754***	*2.724***	*2.772***	*2.678***
Government consumption	-0.519	-0.547	-0.576	-0.522
	*-2.946***	*-2.927***	*-2.966***	*-2.870***
Secondary school enrolment	-0.982	-0.585	-1.163	-1.256
	-0.618	*-0.335*	*-0.696*	*-0.646*
Population growth	-1.575	-1.741	-1.756	-1.580
	*-2.044**	*-2.030**	*-2.050**	*-1.990**
Inflation rate	-0.008	-0.008	-0.009	-0.007
	-0.941	*-0.911*	*-0.990*	*-0.815*
Real deposit interest rates	*-1.065*	*-0.971*	*-1.065*	*-1.055*
	-1.578	*-1.360*	*-1.493*	*-1.514*
Financial liberalization index		-1.289		
		-0.712		
Macro financial reforms			-1.002	
			-0.754	
Micro financial reforms				0.421
				0.261
R-squared	0.412	0.442	0.444	0.415
Adjusted R-squared	0.229	0.203	0.206	0.181
LM Test	0.2733[0.76]	1.0818[0.37]	1.1509[0.35]	0.2414[0.79]
Ramsey RESET Test	1.9368[0.18]	1.5830[0.25]	1.1261[0.36]	1.5267[0.25]
Log likelihood	-31.557	-30.075	-30.030	-31.507
Durbin-Watson stat	2.155	2.265	2.183	2.128

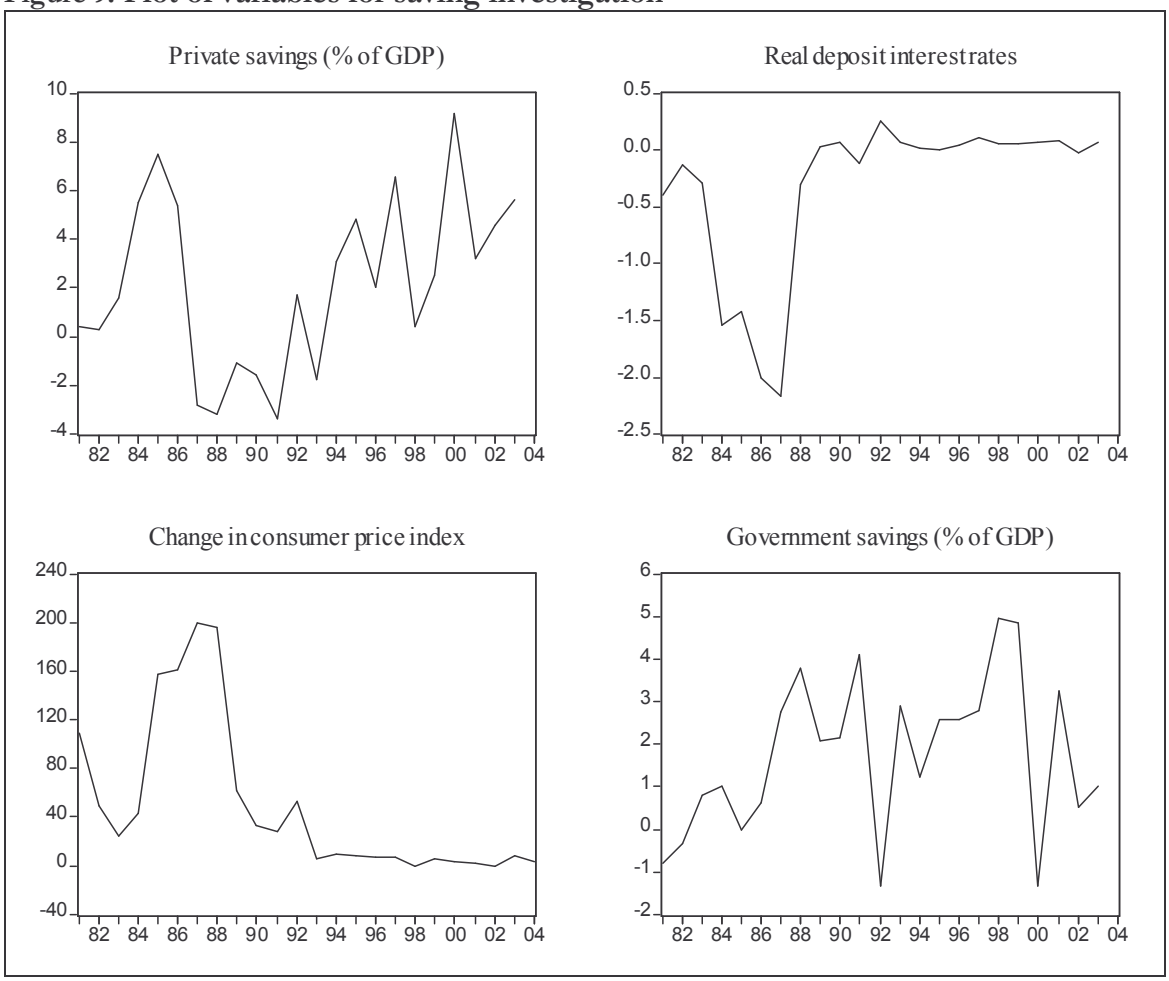
Notes: Figures in italics are t statistics. Two stars indicate significance at 5percent level, one star at 10 percent level..
Source: Regression estimates by the authors

Contrary to expectations, the effect of human capital on investment is negative although not significant in the four regressions for investment. This could possibly be explained by the fact that most of the labour force is either unskilled or semi-skilled. Obwona and Egesa (2004) argue that the country has not been able to attract efficiency seeking foreign direct investment due to a workforce with insufficient skills in addition to inadequate infrastructure. The results provide support to this argument. Government consumption expenditure and population growth coefficients are both negative and significant suggesting that a growing population and a larger government sector have had negative effects on investment. The coefficient for inflation is also positive although not statistically significant. In addition real deposit interest rates affected investment negatively although as in the case of inflation the effect is not statistically significant. Finally the liberalisation index has a negative coefficient suggesting that financial liberalisation has not benefited investment. Further investigation shows that macro and micro policy reforms affect investment differently. The coefficient of financial policy reforms that are of a macro nature is negative while that for reforms that are micro is positive. This suggests that micro financial policy reforms such as improved bank regulation, liberalisation of the securities markets, privatisation of government owned banks and reduction in credit allocation had a positive impact on investment. Other variables associated with growth such as aid, trade openness, terms of trade and private sector credit were also included in the growth and investment equations but were found not to be statistically significant. The results are available on request.

4.2 Private savings

Casual assessment of the available evidence suggests that financial sector liberalisation and reform could have supported the high rate of economic growth by increasing financial savings and monetary depth. Indeed, the growth in private sector deposits reflects not only the increasing confidence in the banking system, but also the changing portfolio composition of household wealth in favour of financial savings. At the same time, however, households have also allocated some of their savings to real estate investments and holdings of foreign exchange. This is illustrated by the fast growth in real estates and foreign exchange deposits following the liberalisation of the current account. Moreover, because of limited access to financial services, the asset composition of rural households is to a large extent determined by local economic activities in their area of residence; savings are in form of commodity stocks, livestock and land. Even before effecting the empirical analysis, it should be pointed out that the level of savings as a percentage of GDP, remains low and compares poorly with those of other countries at similar level of development such as Kenya. Figure 9 depicts the trends in private and government savings, deposit interest rates and inflation in Uganda during the period 1981 to 2004.

Figure 9: Plot of variables for saving investigation



Source: Bank of Uganda, Uganda Bureau of Statistics, World Bank and International Monetary Fund

From the data it is not possible to visually determine which variables appear to be stationary or not. The Augmented Dickey-Fuller test (ADF) was again used to test for unit roots in the data. Table 5 summarizes the results of the stationarity tests for the variables used.

Table 5: Savings: Unit root tests

Variable	Lag length	ADF test statistic	Prob.*
Private savings	0	-2.968	0.16
Real deposit interest rates	0	-1.642	0.09
Inflation rate	0	-1.651	0.09
Government savings	0	-4.553	0.00

Notes. The sample period is 1981 to 2004.

Source: Bank of Uganda, Uganda Bureau of Statistics, World Bank and International Monetary Fund

The ADF test shows that the variable for private savings was not stationary and was therefore detrended it by regressing it on a constant, a time trend and its own significant lags. Domestic deposit interest rates, inflation and government savings were found to be stationary.

Estimates based on ordinary least squares (OLS) were then derived to examine the impact of financial liberalisation on private savings. A regression equation for savings excluding the variable for financial liberalisation was first obtained followed by a re-estimate of the same equation including the financial liberalisation index. Table 6 summarizes the results for both cases.

Table 6: Savings regression estimates

Variable	Private savings equation	Private savings equation with financial liberalization	Private savings equation with macro policy reform	Private savings equation with micro policy reform
Constant	4.038	4.340	4.478	4.008
	*4.286***	*4.218***	*4.468***	*3.988***
Real deposit interest rates	0.011	0.144	0.243	0.028
	0.009	*0.117*	*0.197*	*0.023*
Inflation rate	-0.016	-0.014	-0.015	-0.016
	-1.233	*-1.079*	*-1.098*	*-1.090*
Government savings	-1.173	-1.274	-1.315	-1.169
	*-3.623***	*-3.669***	*-3.861***	*-3.484***
Financial liberalization index		1.721		
		0.462		
Macro financial reforms			*0.105*	
			0.039	
Micro financial reforms				*0.336*
				0.112
R-squared	0.472	0.538	0.532	0.472
Adjusted R-squared	0.384	0.423	0.415	0.348
LM Test	0.3602[0.70]	0.1205[0.89]	0.2039[0.82]	0.3528[0.71]
Ramsey RESET Test	0.0367[0.96]	0.5799[0.57]	0.0562[0.95]	0.0377[0.96]
Log likelihood	(50.372)	(47.103)	(47.242)	(50.363)
Durbin-Watson stat	2.169	2.182	2.268	2.152

Notes: Figures in italics are t statistics. Two stars indicate significance at 5percent level, one star at 10 percent level.
Source: Regression estimates by the authors

Both equations suggest that inflation and government savings negatively affected private savings while domestic deposit rates had a positive effect. However, the significance tests show that the effects of deposit interest rates and the inflation rates are not statistically significant. Bandiera et al (2000) were equally not able to conclusively establish a positive significant effect on savings arising from increases in the interest rate for a number of developing countries. As in the growth and investment equations, the introduction of variables on financial liberalisation did not alter the initial results of other exogenous variables. The variable for financial liberalisation has a positive coefficient implying a positive effect on private savings. In addition, both the micro and macro financial policy related reforms had positive coefficients reaffirming the positive effect of financial liberalisation on savings. However, like deposit interest rates and inflation these

variables were not statistically significant. A variable of aid as a ratio of GDP is added (results available on request) to the exogenous factors and it is found to have a negative effect on savings. However, it is statistically not significant and does not cause any significant changes in the coefficients of the initial exogenous variables.

V IMPLICATIONS FOR FINANCIAL SECTOR REFORM

5.1 Preparedness of Uganda for financial sector reform

Kasekende and Ssebudde (2003) indicate a number of challenges that existed at the time Uganda embarked on financial sector reforms. These challenges were made more difficult by the decades of economic mismanagement and political instability that had characterised the country. In particular, there were issues regarding the presence of a critical mass of skilled and experienced financial sector players. The lack of a critical mass of experienced staff led to inadequacies in Uganda's corporate reporting regime[16]. Further shortcomings were related to the comprehensiveness of financial information and underlying databases[17]. It is now recognized that investment in financial data gathering provides critical support to monitoring efforts and to crisis prediction[18]. Most importantly, a sound regulatory and supervisory framework[19] needed for successful reform had to be put in place to ensure successful financial reforms (Kasekende and Atingi-Ego, 1998). Inadequate regulatory and supervisory arrangements meant that prompt corrective actions could not be enforced on weak banks at the beginning of the reform period.

5.2 Lessons learned, what works and what does not

It is now evident that financial reform and liberalisation imposed a number of challenges to the economy while some initial conditions and the sequencing of the reforms resulted in a costly adjustment process (Kasekende and Ssebudde, 2003 and Kasekende and Atingi-Ego, 1998). The financial sector was liberalised before prudential supervision and regulations had been adequately strengthened. As a consequence, unsound banks were allowed to enter the financial system and their shortcomings were not expeditiously addressed. Their presence increased the cost of intermediation and led eventually to costly bailouts by the central bank. In addition, the presence of asymmetric information and the absence of institutions, adequate accounting standards and credit information agencies which could help alleviate this problem constrained effective competition, resulting in higher margins and interest rates with attendant economic costs. Interest rates, in this environment,

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[16] The World Bank and the International Monetary Fund are assisting in the design of reports on the Observance of Standards and Codes (ROSC) and an action plan for Uganda that focuses on accounting, and auditing of financial reporting by public interest entities.

[17] World Bank: Report on the Observance of Standards and Codes (ROSC) Accounting and Auditing; Report on AML/CFT 2005.

[18] See work by Heun and Schlink 2004. Early warning systems of financial crises-implementation of a currency crisis model for Uganda.

[19] World Bank: Uganda Financial Sector Reviews, May 1991 (Grey cover report and November 1995 (Green cover report)

appear to be determined not by the costs facing the most efficient supplier but instead by the most inefficient ones—a complete contradiction of competitive behaviour. Lastly, there is evidence that in the post liberalisation period, micro enterprises and farmers in small rural communities found it more difficult to access services provided by the formal financial system. The gap in the provision of financial services is being filled increasingly by the informal sector (Kasekende and Ssebudde, 2003).

Financial sector liberalisation in Uganda took place in an environment where effective regulations and the capacity to enforce them was still being developed, an environment not uncommon to sub Saharan-African countries. The absence of developed complimentary institutions hindered effective market competition. Liberalisation measures introduced increased competition but the market for banking services remains imperfectly competitive. There are several dimensions through which imperfect competition can be observed. These dimensions include; market segmentation within the formal banking system, constraints on exit from the market, gaps in the provision of services by the formal financial system and its impact on the nature of the market for informal financial services. The banking system accounts for more than 90 percent of the total assets of the formal financial sector. This shows many of the characteristics of a market, which is segmented with effective competition being constrained (Kasekende and Ssebudde, 2003).

5.3 Monitoring implementation and evaluating financial sector reform

It is important to develop a framework with a timeframe to monitor and evaluate financial sector reform. Since the country runs a three-year macroeconomic program, financial sector reform issues should be accommodated within the Medium Term Expenditure Framework (MTEF) for effective implementation and monitoring. Financial sector reform needs to be refocused and situated within the context of the broader country development strategy in a harmonized manner. Appropriate reform frameworks should be integrated within country Poverty Reduction Strategy Papers (PRSPs), national development plans, and Country Assistance Strategies (CAS).

Since financial sector reform is a long and complex process that requires a sustained commitment, it is important that a proper understanding of the dynamics of sectoral reform is achieved. The track record suggests, in fact, that financial reform has been difficult in a number of countries (World Bank, 2006). Going forward, financial sector reforms need to continue to be based on sound macroeconomic stability. In addition a proper sequence to reform that ensures that certain safeguards, whether structural, regulatory, or informational, are in place is required before broader reform is undertaken. Furthermore, it necessary to ensure that factors that are key to reform such as sectoral governance, the prudential framework for financial institutions, and the independence and solvency of the central banks exist. Finally, it is necessary to invest in information gathering in order to acquire financial indicators that will support monitoring efforts and crisis prediction.

5.4 Access by the poor to financial services

The problem of poor access to formal finance and related services in Uganda has three faces. First, there are problems associated with efficiency of banks in allocating credit[20]. Second, there are problems associated with the borrower. Finally, there are problems related to nature of the economic environment. The underlying reasons of the problem of poor access to formal finance and related services need to be resolved especially as they relate to weaknesses in the payment systems and savings instruments. The rural and urban-based small and medium scale enterprises and smallholder farmers need to be empowered if finance is to play a critical role in the development process. Innovative financial programmes need to be designed to encourage private investment in marketing and processing. Such financing mechanisms for the marketing chain require warehouse receipts legislation, and market information systems as key elements of an improved rural and agricultural finance system. Improvements in marketing infrastructure would have multiplier effects in facilitating financing of smallholder farm production.

5.5 Financial reforms in the context of broader country development strategy

Financial reform should be situated within the context of the broader country development strategy. In particular, the next phase of financial sector reform requires the promotion of participatory approaches to formulating and implementing financial sector policies. In particular it should support the inclusion of civil society and micro-credit delivery agencies as key players in financial sector development. Furthermore, it should help to accountable systems of governance at different levels to enhance overall effectiveness of technical and financial assistance from development partners. The importance of micro credit institutions suggests the need to institutionalize participatory approaches to the formulation, implementation and monitoring of financial sector development strategies. It is important to integrate microfinance institutions and adjust intervention strategies to recognize the multi-actor environment that the financial sector is. To enhance development, financial sector reforms should identify clearly the responsible parties and planned actions for each of the identified reform measures[21]. The country reform strategy should be used as a tool for coordination of the various activities in the different sub-sectors, provide a comprehensive view of the financial sector reforms and avoid duplication of efforts. The reform strategy should provide for the coordination of the flow of all financial and technical assistance from all the development partners for financial sector reform.

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[20] World Bank/IMF: Uganda Financial Sector Assessment Program (FSAP) Update Aide Memoire, March 2005.
[21] World Bank: Uganda: Financial Sector Action Plan (FINSAP) Draft Aide Memoire, November 2005.

An effective and broad country development strategy for Uganda suggests that there is a critical challenge to promote term financing, savings and the development of capital markets[22]. Reforms in the pension sector will be needed to remove the monopoly of the National Social Security Fund (NSSF). In addition the public service pension's scheme needs to be evaluated with a view to establishing a more durable contributory trust fund. Pension reform could have a significant positive impact in providing protection to Ugandans in old age and stimulate savings and the development of the market for longer-term finance. Since domestic savings play a critical role in the mobilization of resources to support investment, it is important to restructure the pension system, promote long-term financing and develop capital markets. Critical reforms in these areas will unleash markets that provide instruments for the population to save and invest.

5.6 Redefining the role and performance of development banks

Long-term development finance has not been available because development banks have not performed adequately their role of mobilising financial resources. This has weakened the link between agricultural financing with the overall agricultural and poverty reduction strategy. Viable development options may therefore be required in this area to encourage the financing of rural based small and medium scale enterprises.

Two development banks have played some role in financing activities in Uganda. The first, is the East African Development Bank (EADB) which was established in 1967 under the treaty of the then East African Cooperation. Following the break up of the community in 1977, the Bank was re-established under its own charter in 1980. Under this charter, the Bank's role and mandate were reviewed and its operational scope expanded. Under its expanded operational scope, the Bank offers a broad range of financial services in the Member States of Kenya, Uganda and Tanzania with an overriding objective of strengthening socio-economic development and regional integration[23]. The bank finances agriculture and agro-processing, industry and mining, tourism, services and infrastructure. The second development bank is the Uganda Development Bank which has faced a number of structural problems that have affected its operations. To revitalize development banking in Uganda, a number of measures are required, including appropriate capitalization of institutions, redefining the role and strategy of development finance institutions, significant improvements in management and introduction of private participation and partnerships.

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[22] World Bank: Uganda: Financial Sector Action Plan Update, Draft technical note (pensions) December 2004

[23] EADB is owned by the three member states of Kenya, Uganda and Tanzania. Other shareholders include the African Development Bank; FMO (Netherlands); DEG (Germany); Consortium of Yugoslav Institutions; SBIC – Africa Holdings; Commercial Bank of Africa, Nairobi; Norbanken AB, Stockholm; Standard Chartered Bank, London; and Barclays Bank International, London.

5.7 Agricultural development strategy, financing and poverty reduction

Since the closure of the cooperative bank in 1999, Uganda has had no formal financial institution dedicated to agricultural financing. However, there have been pressures for a financial institution entrusted with the responsibilities of initiating effective approaches for the development of agriculture. The proponents argue that an agricultural bank when established will be committed to raising the economic condition of farmers by making credit and capital inputs available in an easy and smooth manner. The agricultural bank will be able to extend credit to small farmers and expand the scope of financing to promote rural small-scale industries. If necessary, the bank should be permitted to engage in limited banking activities for the mobilization of domestic resources. If approved such a bank should in principle be permitted to provide short, medium and long-term agricultural credit to individual farmers, groups of farmers, corporate bodies and village communities. Such a bank would like a sister institution in Ghana (ADB, 2006) invest in the processing of agricultural produce, finance cottage industries, storage, warehousing and marketing of produce.

5.8 Link between finance, savings, investment and growth

The link between financial reform, savings, investment and growth is through a number of channels. Finance mobilizes and pools savings; produces information on possible investments so that resources can be channeled to their most productive use; monitors the use of funds; facilitates trading, diversification and management of risk; and eases the exchange of goods and services (Levine, 1997 and 2004). Financial reform measures that contribute towards financial development help reduce poverty by reducing credit constraints on the poor for whom financial market imperfections are particularly binding (Galor and Zeira, 1993). This makes it possible for households to invest in education and for small firms and individuals to make use of new growth opportunities that arise when markets open. The empirical evidence in the case of Uganda however suggests that the link between financial reforms with savings has not been tight despite having some positive effects. In the case of investment, the link has been detected particularly for reforms that directly affected the financial sector (micro reforms) such as improved bank regulation, liberalisation of the securities markets, privatisation of government owned banks and reduction in credit allocation. While the above-mentioned reforms in the financial sector positively affected investment during the period reviewed it is not possible to conclude as in the case of savings that these effects were significant. In terms of overall growth, the empirical evidence suggests that Uganda is yet to benefit from the wave of financial reforms that have been undertaken. The sustained limited access to financial markets even amid the financial reforms by the poor, mostly attributed to both low efficiency of banks and structural deficiencies in addition to issues of sequencing of the reforms, have dampened the positive effects embodied in the theory on the contribution of financial reform to growth. It is therefore difficult to qualify a positive contribution of financial reform towards poverty alleviation in Uganda.

5.9 Knowledge gaps for further research in financial sector reform

There are a number of areas requiring extensive research. Some of these areas could not be adequately covered in this paper. The research areas include the need for a comprehensive analysis of the underlying reasons of the problem of poor access to formal finance and related services of rural and urban-based small and medium scale enterprises and smallholder farmers at different stages of financial sector development. An exhaustive analysis of how well financial sector reforms have been placed in the context of broader country development strategies and agendas in a harmonized manner within national development plans is required. In addition an extensive assessment of the role and performance of development banks in provision agricultural term finance would be very informative. It is vital to specifically establish the link between agricultural financing within the overall agricultural and poverty reduction strategy and profile viable development options. Finally, research is still required in how countries like Uganda can improve not only the transmission but also the signaling of their monetary policy stances given that implementing monetary policy in the context of shallow markets is judged to be costly and inefficient (IMF, 2006). Monetary policy transmission is a critical link in the design of development oriented financial systems in Sub-Saharan Africa.

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Appendix 1

Building an index for financial liberalization

An attempt is made to identify eight main dimensions of financial liberalisation in Uganda. Six of the dimensions categorized as domestic financial liberalisation, one dimension covers the securities markets and the remainder concerns international financial liberalisation. These dimensions form a basis for constructing an (8 by 24) matrix of 0's and 1's for the eight financial liberalisation variables over the periods 1981 to 2004 (24 years). In the matrix, 1's are entered for each variable starting in the period when a major financial liberalisation policy was implemented. The different policies are summarised by reducing the dimensionality of the matrix using principal components. The key financial liberalisation policies implemented including the dates of implementation are listed below.

1 Domestic financial liberalisation

1.1 Interest rates

- 1988: Removal of credit ceilings and raising of interest rates by 10percent
- 1989: Adopted adjustment of interest rates with inflation rate changes to deliver positive real interest rates.
- 1992: Adopted an auction based Treasury bill market with key interest rates linked to the weighted average of the t-bill rate marking the beginning of the decontrol of interest rates. – (*The dummy variable for interest rate liberalisation = 1 starting in 1992)*
- 1994: Full liberalisation of interest rates
- 2003: Licensed primary dealers authorized to trade in government securities in the secondary market leading to the discontinuation of the rediscount facility.
- 2004: Introduced a government treasury bond whose primary role was to ease pressure on the lower end of the market although served also as a reference for pricing long term secondary market instruments.

1.2 Pre-competition measures

- 1991: Lowering of entry barriers- (*The dummy variable for pro-competition measures = 1 starting in 1991)*
- 1993: Introduction of the shilling inter-bank money market, introduction of the rediscount facility and removal of restrictions on Treasury bill holdings.
- 1996: Institution of a two (2) year moratorium on licensing of new Banks
- 1997: Extension of the two (2) year moratorium on licensing of new Banks
- 2005: Lifting of moratorium on licensing of new Banks

1.3 Reserve requirements

- 2000: Increase of Commercial Bank minimum paid up capital. – *(Since there has not been any key policy towards easing of reserve requirements this measure is not included in the final policy matrix)*

1.4 Directed credit and credit ceilings

- 1988: New credit scheme for rural farmers
- 1989: Removal of directed credit facilities towards crop finance - (*The dummy variable for policies on credit = 1 starting in 1989)*
- 1991: Reinstitution of directed credit to coffee farmers through banks.

1.5 Banks ownership

- 1998: Privatisation of Uganda Commercial Bank
- 1999: Withdrawal of management of UCB from buyers and placement of its management under Bank of Uganda.
- 2002: Sale of government shares in Bank of Baroda on the securities exchange - (*The dummy variable for bank ownership = 1 starting in 2002)*
- 2003: Second privatisation of UCB

1.6 Prudential regulation

- 1993: Enactment of the Bank of Uganda Statute 1993 and the Financial Institutions Statute 1993 enhancing Bank of Uganda's monetary and supervisory authority - (*The dummy variable for bank ownership = 1 starting in 1993)*
- 1994: Introduction of penalties to banks for late or non-submission of returns
- 1999: Imposition of strict penalties by defiant bank owners on default in regard to bank law.
- 2003: Review of the Financial Institutions Bill and strengthening of prudential regulations
- 2003: Enactment of the Micro Finance Deposit taking Institutions Act

2 Securities market

- 1995: Presentation of the Capital Market Authority Bill to parliament providing a framework for a private sector securities market.
- 1996: Establishment of a board of the Capital Markets Authority
- 1997: Licensing of the Uganda Securities Exchange- (*The dummy variable for the securities market = 1 starting in 1997)*

3 International financial liberalisation

- 1986: Adoption of a dual exchange rate system from a fixed exchange rate system
- 1990: Legalization of the parallel foreign exchange market
- 1992: Introduction of a foreign exchange auction system marking the transition from a fixed exchange rate regime towards a market based exchange rate system.
- 1993: Introduction of an inter-bank foreign exchange market
- 1993:Current account liberalisation. -(*The dummy variable for international financial liberalisation = 1 starting in 1994)*
- 1997: Liberalisation of capital account transactions

Appendix 2

Variable definitions and data sources

GDP = gross income, source: International financial statistics (IMF)

npsa = private savings rate = (private savings / GDP)

private savings = gross national savings – public sector savings

gross national savings, source: World Bank

public sector savings = public deficit + public investment

public deficit, source: International financial statistics (IMF)

public investment, source: Uganda Bureau of Statistics

ngsa = Public sector savings rate = (public savings / GDP)

lri = log of real per capita income = ln(real GDP/population)

Real GDP and population, source: World Bank

inf = inflation rate = change in consumer price index

Consumer price index, source: International financial statistics (IMF)

ndr = real interest rate = ln(1+i – ln(inf)), i = deposit interest rate, source: World Bank

lin = Index of financial liberalisation

gco = government consumption = Government consumption / GDP

Government consumption expenditure, source: Uganda Bureau of Statistics

lbr = Labor growth, source: World Bank

tiy = total investment = total investment / GDP

Total investment, source: Uganda Bureau of Statistics

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Economic Policy Research Centre (EPRC)
51 Pool Road Makerere University Campus P. O. Box 7841 Kampala, Uganda
Tel: 256-41-541023 Fax: 256-41-541022 Email: eprc@eprc.or.ug