Financial liberalization and its implications for the domestic financial system: The case of Uganda

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Abstract

This paper presents an analysis of the impact of financial liberalization on the conduct of banking business and its impact on the real sector. Survey results show that the overall assessment by commercial banks of financial sector liberalization is positive. Financial sector reforms and interest rate deregulation appear to have engendered efficiency gains in the banking industry and consequently growth of credit to the private sector is increasing. The econometric results also reveal that increased credit to the private sector appears to be leading economic growth. However, increased credit allocation to the private sector should not compromise monetary policy objectives. The study also recognizes the dualistic nature of the financial system in Uganda and proposes as a policy recommendation the linkages of the banking system with micro-credit institutions as one way of enhancing financial intermediation in order to promote economic growth.

1. Introduction

During the period from 1970 to the mid 1980s, the financial markets of most developing countries were characterized by financial repression. This inadvertently resulted from the original policy of financial restriction that was pursued by authorities in these countries. Financial restriction intended to encourage financial institutions and instruments from which government could expropriate large seigniorage at the expense of other sectors.

In the McKinnon–Shaw analogy (McKinnon, 1973; Shaw, 1973), financial repression is characterized by policy induced distortions in the financial system. The culprit policies include moral suasion of financial institutions to observe interest rate ceilings that are below market clearing levels, high reserve requirements, selective credit ceilings and capital controls to prevent the outflow of domestic savings. Obligatory holding of government bonds by the financial institutions at zero or low interest rates is also common.

There was considerable volatility in the international economic system during this period and its effect on the sub-Saharan Africa (SSA) region need not be overemphasized. The international recession and debt crises and political instability within SSA negatively affected the savings and investment ratios in the region. In addition to the already narrow tax base, domestic resource mobilization continued to decline, a trend that further depressed investment and hence economic growth. On the other hand, the emergence of the debt crisis, coupled with the reduction of net external financial inflows and the increasing debt service payments, called into question the reliance on external financing. To the extent that external finance is sensitive to domestic political factors and is project tied meant that the private sector was denied sufficient financial resources.

In view of these problems, most SSA governments shifted from the control model to more market-based systems as a means of promoting a stable economic environment.[1] This was particularly relevant in the financial sector where it was hoped that streamlining the sector would stimulate domestic resource mobilization and increase the capacity of the banking system to support private sector participation in economic development.

To date, many African countries have implemented financial sector liberalization programmes with the aim of improving macroeconomic performance. This is made possible through reduced inefficiency in the financial markets, which should indirectly benefit the non-financial sectors. Varying degrees of success with financial liberalization have been noted in some countries, while failures for diverse reasons have been reported in others. Nissanke (1994), for example, notes that the fragmented state of financial markets is a barrier to effective domestic resource mobilization. Consequently, inefficient intermediation between savers and investors constitutes one of the major hindrances to

self-sustaining development in SSA. In view of this, financial liberalization programmes have been received with mixed feelings, particularly in relation to their objectives.

Against such a background, this study attempts to qualitatively and quantitatively ascertain the implications of financial liberalization for the domestic financial system and its effects on the real sector in Uganda.

2. Literature review

The McKinnon and Shaw models discuss the way in which repressed finance takes the form of interest rate ceilings and subsequently compounds economic instability. They argue that in a developing economy, distortions of financial prices such as interest rates reduce the real rate of growth and size of the financial system in relation to the non-financial system. Increasing the real deposit rate therefore increases savings and rations out low-yielding investments since these are no longer profitable at higher interest rates. Thus, they postulate that the real rate of deposit to the savers is the key to higher levels of investment and greater investment efficiency. This also leads to financial deepening since it encourages the growth of financial assets and liabilities.

As institutional development is encouraged within the financial system, individual borrowers and savers are tempted to switch from the informal to the formal financial sector, thereby integrating the two sectors. There is also an attraction to shift from inflationary hedges and foreign currency denominated financial assets to acquisition of domestic formal financial assets, which eventually increases the range of financial instruments available. This subsequently transforms the narrow, inefficient and fragmented financial system into a larger, complete and efficient capital market, which in turn encourages economic development. Thus, they postulate interdependencies to exist among savings, investment and long-run economic growth with the key link being the deposit rate.

Augmenting the potential contribution of real positive interest rates in mobilizing savings requires the reform of the financial sector. The arguments in favour of such reforms are well discussed in Pagano (1993). We sum them up as the capability of the formal financial system to increase the share of total financial savings intermediated to investment and to improve the average return of the investment for the projects they finance.

The positive link between higher financial savings and growth depends largely on how the transformation of resources into investment takes place within the financial sector. This effectively depends on the efficiency of the financial sector in providing services that for example reduce liquidity risk, diversify portfolios and supply information on investment efficiency.

Because a well functioning financial sector stimulates investment and raises the average rate of return on investment projects receiving the loans, the theoretical contributions mentioned above reflect the fact that the development of the financial sector is positively related to economic growth.

The foregoing arguments in favour of raising the real deposit rate have been subjected to a lot of criticisms, with the major ones coming from the neo-structuralists, e.g., Buffie

(1984). They argue that the key institutional characteristics of the informal money markets (IMM) were missing from the arguments. Hence, if the IMM are to be taken into account the effect of financial liberalization would largely depend on the degree of substitution between the assets in household portfolios; that is, between lending to the IMM and lending to the banking sector via deposits, holding foreign currency denominated financial assets and inflationary hedges. Against this background, the structuralists argue that their analysis of the developing economies provides a much more appropriate description of the institutional characteristics of the financial structure than the McKinnon–Shaw analysis (see for example, Van Wijnbergen, 1983).

The argument is that effects of financial liberalization are crucially dependent on whether bank deposits are close substitutes for unproductive assets (such as cash, gold, foreign bonds and commodity stocks[2]) or close substitutes for productive assets such as IMM. To the extent that financial liberalization attracts resources from the IMM, contractionary effects on output in the economy may obtain. The persistent loss in output will depend on the intermediary role of commercial banks with the influx of time deposits mobilized through increased deposit rates. If credit ceilings prevent the passing through of these deposits into bank loans, then substantial and persistent loss in output and decreased investment will dominate. In case the formal financial intermediaries are inefficient, then intermediation of these mobilized resources will be further weakened. The cash and reserve requirement ratios prevailing in the formal financial system will also serve to lower the amount of total loanable funds in the economy. Consequently, a higher time deposit rate may then lead to higher IMM loan rates with the consequence that output may contract and inflation rise in the short run.

Raising the real deposit rate results in higher loan rates. The two major problems associated with higher loan rates are summarized in Stiglitz and Weiss (1981). They argue that higher loan rates increase the adverse incentive problem given that firms are tempted to switch to more risky projects. Thus, the banking system may find that raising the loan rate increases the overall riskiness of their portfolio of assets. The second problem is the adverse selection effect. The loan market is distinct from all other types of commodities since it is characterized by heterogeneity of products with varying probabilities of default. The lender is unable to ascertain *a priori* which borrower is going to default, hence using the loan rate as a screening device might attract bad risks. In such a situation borrowers who are willing to pay higher loan rates are likely to be less concerned about the prospects of repayment.[3]

The post-Keynesians (e.g., Buckett and Dutt, 1991) argue that financial liberalization through raising the real deposit rate may lead to a fall in output and growth, and subsequently to financial instability. A rise in the real deposit rate increases the supply of deposits and hence loans, with the marginal propensity to save increasing. Consequently, aggregate demand and output will fall, with profits and investment also falling in the long run. If accelerator effects of investment are introduced, then the fall in output and growth will be greater.

From the foregoing, it would appear that the simultaneous role of interest rates in raising both savings and investment remains at best controversial. Economic theory suggests a positive correlation among savings, investment and a rising real deposit rate,

particularly in the immediate post financial repression era. Some empirical studies in SSA countries do not conform to this expectation, as Umo (1981) and Ballasa (1989) point out. Given low incomes, and high and skewed patterns of consumption, positive real deposit rates may not necessarily raise the level of savings in African countries. Other factors such as shallow financial depth, culture, education and huge government budget deficits limit the extent to which domestic savings can be raised.

Despite such shortcomings, it is still believed that positive real interest rates tend to make savers prefer financial to non-financial forms of savings. This tends to suggest a positive correlation between the overall financial depth and growth in GDP. Accordingly, a policy that aims at increasing the financial depth through expansion of interest-bearing instruments would help maximize economic growth via increased availability of credit to finance investment. This implies that positive real interest rates, by promoting financial deepening, help to raise the level of investment hence domestic capital formation.

3. The Ugandan financial system

Uganda's financial system is still relatively young and underdeveloped. As is the case with most developing economies, the system is made up of a formal and an informal sector. The formal sector encompasses the central bank, 13 licensed commercial banks, 9 credit institutions, 14 insurance companies, 3 development institutions, 3 building societies and the Postal Savings Bank. The informal sector comprises a wide range of moneylenders, savings circles and similar financial mechanisms.

Characteristics of the system

The basic indicators of financial development such as the broad money–GDP (M2/GDP) ratio suggest that the financial sector is underdeveloped and, consequently, that only a limited number of financial instruments are available for savings mobilization, liquidity management and portfolio diversification.

The system, like that of any SSA country, is segmented, fragmented and dualistic. To the extent that there are multiple financial markets with different institutions serving heterogeneous needs, it is regarded as segmented. The lack of interaction among different units both across and within means the system is fragmented. The existence of formal and informal financial sectors is the case of dualism and is an exceptional example of fragmentation that results in different relative prices and barriers to flows between the two markets.

The system is largely bank-centred and supplies mainly short-term working capital. Given the financial repression that was prevalent in the past, it can be said that it became an avenue for tapping funds to finance government and public expenditure, directing credit as required by government.

Two banks, Uganda Commercial Bank (UCB) and the Cooperative Bank, currently dominate the system. Government wholly owns UCB while the Cooperative Bank is wholly owned by the cooperative societies. The two banks combined account for 55–60% of the sector's assets and liabilities. Since these two commercial banks did not direct credit on a sound commercial basis, their levels of non-performing loans are high. To date, their non-performing assets account for nearly 60% of their total loan portfolios. Given their size, the potential of disorganizing the whole financial system cannot be underestimated.

A brief analysis of the financial system

In order to derive the implications of financial liberalization for the domestic financial system, we present a brief analysis of the system. It starts by discussing the flow of savings and credit within the system, which is divided into non-bank private, informal financial, formal financial and government.

Non-bank private sector (households)

This sector is made up of rural and urban households. The savings of the urban households mainly take the form of deposits with formal financial institutions (and occasionally with the informal sector), real estate (e.g., buildings), and holding of foreign currency as a store of wealth and/or for asset motives. Rural households dominate this sector and their wealth is mainly held in the form of non-financial assets. The asset composition of their savings is greatly determined by the nature of the economic activities they engage in and these range from commodity stocks to livestock to land. However, other factors such as degree of liquidity, risk and return on the various assets, availability of banking services, and storage and transportation costs also contribute to the composition of the assets. The strong preference for the non-formal financial system can be attributed to structural deficiencies and lack of confidence in the formal financial system. The 1987 currency reform, which levied a 30% tax on currency in circulation, bank deposits and other forms of formal financial assets, coupled with high real negative interest rates between 1985 and 1989, are cases in point.

Non-bank firms

This sector is mainly composed of local artisans, large private companies and state owned enterprises. As in the case above, they use both formal and informal financial institutions for their sources of credit (mainly working capital) and occasional savings. The local artisans tend to rely on the IMM because of the high transaction costs of borrowing from the formal financial system (FFS) such as project appraisal documents, the lack of marketable collateral and the low probability of acquiring credit itself (self-rationing). The formal financial institutions are also sceptical of lending to local artisans and other small-scale investors, as they do not have enough information on them, hence they are viewed as being high risk. Formal financial institutions instead concentrate their lending on large-scale firms, which include export marketing companies, oil companies and a few well-established industrialists.

State owned enterprises are largely financed by the banking system. In the past, commercial bank credit was supplemented by loans from the central bank guaranteed by government. The consequence of this mode of finance was to accelerate inflation and further worsen macroeconomic management.

Informal financial markets

Given the prevalent financial restrictions**,** informal financial markets emerged and intensified as an escape route from the highly repressed exchange and interest rates that dominated the formal financial sector. In the strict sense, however, there are no organized associations worth mentioning, for example like the *susu* market in Ghana. The informal financial groups were themselves segmented and included activities in savings, credit and foreign currency (*kibanda*). They are subjected to highly covariant risk given that their members are engaged in similar economic activities and are in the same income brackets. The groups are highly localized and tend to operate on the basis of personal knowledge.

Consequently, the ability of these groups to expand and effectively execute financial intermediation is constrained. The informal savings and credit arrangements range from local moneylenders and rotating credit cooperatives to community savings and loan associations. The resources mobilized tend to benefit only members of the group. The access to credit is relatively higher in the IMM than in the FFS. In the IMM, credit risk is minimized because the markets are localized and have a comparative advantage in information collection at reasonable costs over the FFS. They also operate on social inter-personal relationships, which minimizes the costs of screening and monitoring.

It would appear, then, that the thriving informal sector is only exploiting the structural deficiencies that are prevalent in the formal financial system. Despite this development, the extent to which the informal can substitute for the formal financial system remains very limited. A large premium prevails in the rates of these two financial markets, which may reflect the high costs of intermediation predominating in the informal market, hence inefficient intermediation and imperfect arbitrage between the formal and the informal sectors. Such a situation could also suggest that the informal sector may not be an effective conduit through which large-scale long-term savings can be mobilized. In brief, the informal sector only expanded in order to supplement the overall intermediation in the economy following the financial repression that prevailed, thus playing a complementary role in financial intermediation.

The restricted access to credit in the formal system appears to be one major reason why the informal money markets have continued to be attractive. To illustrate this reason, we present a simple model where the attractiveness of informal money markets is proxied by the interest rate prevailing in this market.

We assume that the total stock of credit (L_T) is made up of credit from the formal (organized) financial sector (L_O) and from the informal (unorganized) financial sector (L_U). The flow of demand for loanable funds is given by private sector investment demand, where private investment is a negative function of the cost of borrowing (*CR*) in the IMM thus:

$$\frac{dL_T}{dt} = I(CR, ...) \qquad 1_{CR} < 0 \tag{1}$$

The supply of loanable funds to the IMM is $\left(\frac{dL_U}{dt}\right)$, while the profitability (π) of lending in the IMM is given by:

$$\pi = CR * \left(\frac{dL_U}{dt}\right) - C \tag{2}$$

C is the cost of marginal funds.

Substituting for $\left(\frac{dL_U}{dt}\right)$ in Equation 2 yields

$$\pi = CR * \left(\frac{dL_T}{dt} - \frac{dL_O}{dt}\right) - C$$

$$\Rightarrow \pi = CR * \left(I(CR) - \frac{dL_O}{dt}\right) - C$$

Since $\frac{dL_O}{dt}$ is rationed by the formal financial system, the first order condition for profit optimization is thus given as

$$\left(\frac{d\pi}{dCR}\right) = CR\, I_{CR} + I(CR) - \frac{dL_O}{dt} = 0$$

therefore

$$CR\left(\frac{dL_O}{dt} - I(CR)\right)(I_{CR})^{-1}$$

and

$$\frac{\partial CR}{\partial\left(\frac{dL_O}{dt}\right)} = (I_{CR})^{-1} < 0 \tag{3}$$

This confirms our earlier suggestion that change in the amount of domestic credit allocated to the private sector from the organized financial sector negatively influences the attractiveness of the informal sector (here proxied by the movement of interest rates in the IMM). Consequently, any policy that restrains private sector credit from the formal money markets as a ratio to GDP will only serve to increase the attractiveness of the informal sector.

The formal financial sector (FFS)

Uganda's FFS is one of the least developed in SSA, with only 70% of the economy monetized. The M2/GDP ratio is just about 9%, compared with 40% for Kenya and 35% for Tanzania. The portfolio of available financial assets is very limited, with nearly all the assets held consisting of liabilities of government, Bank of Uganda and commercial banks. The only diversification worth mentioning is the treasury bill market, which has an active weekly auction, although the commercial banks still hold more than 80% of the bills outstanding.

The Ugandan economy has suffered from macroeconomic disequilibrium for most of the period since the early 1970s. However, efforts towards stabilization only started in May 1987, and even then, the first five years of the programme were characterized by slippages. Between 1985 and 1988 macroeconomic disequilibrium prevailed, with a fixed exchange rate regime operating and predominant high fiscal deficits that were largely monetized. The effect of this was to increase the money supply in excess of the desired holding, which led to inflation, highly negative real interest rates, a sharp deterioration of the current account and a premium on the official exchange rate that peaked at almost 1,000% in 1988.

These events led to a loss of confidence in the economy. Accordingly, substitution of assets within the non-bank private sector appears to have taken place with a flight away from formal financial sector assets. Since 1970, the M2/GDP ratio has exhibited an overall declining trend, from 24% in 1974 to a low of 7.1% in 1989. Time and savings deposits account for just under 20% of broad money. This decline could be suggesting that a shift occurred from the holding of formal financial assets to acquisition of inflationary hedges, foreign currency denominated financial assets and informal financial market assets. As a result, the formal financial system shrank as reflected in the relatively higher and rising proportion of financial assets held in the form of cash.

The substitution from formal financial sector assets into other financial assets was a response to highly negative interest rates in real terms on such assets. This process resulted in disintermediation, with the banking system becoming increasingly inefficient and unable to perform its traditional role. Loanable funds became so scarce that the central bank was on many occasions called on to intervene in the provision of credit to the private sector. The effect of injecting high-powered money into the economy was to further complicate macroeconomic management because the rate of default on such credit was high. All these events led to efficiency loss in the economy, given that the formal financial sector had the potential to perform an efficient intermediary role.

This sector was in general characterized by structural weaknesses such as low capital adequacy, poor asset quality resulting from inadequate loan appraisal, poor contract enforcement procedures, political patronage and corruption. As mentioned earlier, this sector is now dominated by two commercial banks, although prior to 1972 there was a fairly large foreign presence. These two banks have been subjected to extensive government intervention in relation to their lending policies. In general, the macroeconomic mismanagement that prevailed in the 1970s and early 1980s resulted in a repressed formal financial system. Coupled with poor cheque-clearing facilities, the strong reluctance to use cheques as a means of payment resulted in high currency ratios. The lack of public confidence in this financial system, short maturity and instability of deposits, and the lack of adherence to, and absence of well defined standards of accounting and auditing practices are some of the most important impediments to the health and growth of the formal financial sector.

Another major problem experienced by the FFS was the failure to satisfy the credit needs of the non-bank private sector. This can be attributed to (a) restrictive lending policies that promoted sectoral needs, hence leaving small-scale artisans' demand for credit unsatisfied; (b) credit risk among the small-scale borrowers owing to lack of marketable collateral and information asymmetry perceived to be existing among these borrowers; and (c) corruption by bank officials themselves.

As pointed out above, efforts to improve macroeconomic management were started in May 1987 and strengthened over time. Monetary policies were implemented to restrict the growth of the money supply, increase the real deposit rate through increases in nominal rates and reduce inflation in order to encourage savings. However, efforts to restructure the financial sector were only started in June 1993 and full liberalization of interest rates was only announced in June 1994.

The first move towards financial liberalization came in July 1988 when an increase of ten percentage points on most interest rates was effected. Since then the nominal interest rates have continued to change in an attempt to keep the real deposit rates positive. Partial liberalization of interest rates was effected in November 1992 and linked to the treasury bill market rate, which was determined by public auction. Financial sector reforms have also accompanied the partial interest rate liberalization and efforts to address the efficiency and management issues of the banking system were implemented. A financial sector adjustment programme (FSAP) financed mainly by the World Bank is addressing the efficiency and viability of certain key financial institutions. The non-performing loans of UCB are to be transferred to a recovery trust and a long-term government bond will be issued to the bank. Plans are also under way for government to divest itself from the privately owned banks and to privatize its own bank. As a part of the restructuring plan of UCB, any loss-making branches are to be closed. Emphasis is at the same time being given to strengthening the regulatory and supervisory role of the central bank.

Two new financial acts, i.e., Bank of Uganda Act and Financial Institutions Act, were passed in 1993. These confer on the central bank wide-ranging powers over the financial sector, with overall responsibility for supervising all financial institutions and as the effective monetary authority.

In parallel efforts to improve financial intermediation, far-reaching measures were implemented to liberalize dealing in foreign exchange. In July 1990 the parallel market in foreign currency was legalized, with the result that the premium on the official exchange rate narrowed and the precautionary motive for holding foreign exchange decreased though the asset motive may have remained due to the prevalent inflation. Institutional reforms included allowing residents to hold foreign exchange accounts and to access bureaus without restriction (Kasekende and Ssemogerere, 1994).

There are strong signs that efforts by government to create a stable macroeconomic environment are succeeding (see tables 1 and 2). Annual inflation has declined from triple to single digit levels over the past two years. The rate of inflation recorded for end June 1995 was 2.5%. The monetary indicators shown suggest that there was a strong move towards monetization again. Cash ratios began to fall[4] and the premium on the exchange rate was virtually wiped out, as indicated in Table 1, suggesting a shift away from the holding of foreign currency denominated assets towards domestic currency financial assets.

Table 1: Selected financial indicators

						Annual growth rates	
	Currency in circulation June 1990 Ush million	Broad money June 1990 Ush milion	Official exchange rate (Ush per US$)	Parallel exchange rate	Premium	Currency in circulation	Broad money
1982 Jun	27,481.79	66,697.13	0.94	1.13	1.20	-	-
Dec	30,551.81	70,812.88	1.04	2.13	2.05	-	-
1983 Jun	34,713.47	75,256.51	1.39	4.00	2.88	26.31	12.83
Dec	37,108.17	85,388.61	2.34	4.13	1.77	21.46	20.58
1984 Jun	51,182.53	135,730.20	3.07	4.80	1.56	47.44	80.36
Dec	42,879.42	108,843.25	5.52	9.48	1.72	15.55	27.47
1985 Jun	46,410.51	126,851.89	6.00	14.97	2.50	-9.32	-6.54
Dec	53,700.97	133,917.58	12.75	31.15	2.44	25.24	23.04
1986 Jun	54,357.18	124,161.29	14.00	54.33	3.88	17.12	-2.12
Dec	39,878.66	80,118.63	14.00	100.43	7.17	-25.74	-40.17
1987 Jun	34,424.73	72,819.49	60.00	80.00	1.33	-36.67	-41.35
Dec	38,399.15	78,586.19	60.00	258.00	4.30	-3.71	-1.91
1988 Jun	34,384.91	64,258.35	60.00	451.00	7.52	-0.12	-11.76
Dec	38,778.95	75,910.45	165.00	447.00	2.71	0.99	-3.40
1989 Jun	37,661.65	77,694.45	200.00	612.00	3.06	9.53	20.91
Dec	39,429.50	84,953.92	370.00	751.00	2.03	1.68	11.91
1990 Jun	38,604.60	94,433.10	440.00	657.00	1.49	2.50	21.54
Dec	34,102.00	79,549.45	540.00	769.00	1.42	-13.51	-6.36
1991 Jun	37,763.37	93,064.62	700.00	939.00	1.34	-2.18	-1.45
Dec	46,053.21	108,279.28	915.00	1156.00	1.26	35.05	36.12
1992 Jun	34,460.90	86,864.36	1,169.50	1202.00	1.03	-8.75	-6.66
Dec	38,831.89	98,226.67	1,215.20	1233.00	1.01	-15.68	-9.28
1993 Jun	40,195.77	122,294.47	1,192.00	1199.00	1.01	16.64	40.79
Dec	50,658.89	135,243.20	1,130.15	1130.15	1.00	30.46	37.68
1994 Jun	55,659.66	142,549.11	969.60	969.60	1.00	38.47	16.56
Dec	63,061.14	172,891.13	926.80	926.80	1.00	24.48	27.84
1995 Jun	58,568.79	174,289.66	926.60	926.60	1.00	5.23	22.27

Source: Research Department, Bank of Uganda.

Table 2: Key financial indicators

	Broad (M2) (Ush million)	Nominal GDP (Ush million)	GDP Constant 1970 m	Cash (M0) (Ush million)	Deposits (Ush million)	Credit (Ush million)	Inflation	Deposit rates
1970	16.7	95.00	95.00	5.67	10.80	11.13		
1971	16.43	108.00	106.22	5.87	10.56	11.50	35.29	4.00
1972	20.86	113.00	107.46	5.75	15.11	16.19	1.24	4.00
1973	29.22	130.00	104.73	8.45	20.77	22.35	12.88	4.00
1974	38.65	160.00	103.00	11.11	27.54	29.39	49.46	5.62
1975	46.77	225.00	98.53	13.84	32.93	28.80	18.91	5.62
1976	62.34	265.00	97.91	22.54	39.80	34.19	38.84	5.62
1977	74.00	544.00	98.30	29.04	44.96	41.51	74.89	5.62
1978	93.45	592.00	89.54	36.06	57.39	48.71	47.61	5.62
1979	137.23	882.00	80.12	59.23	78.00	54.00	87.63	6.80
1980	184.00	1,267.00	77.74	73.00	111.00	81.00	45.98	6.80
1981	352.70	2,145.00	78.98	124.70	228.00	208.00	164.17	7.23
1982	438.53	3,162.00	84.43	186.50	252.00	185.00	34.85	9.00
1983	544.20	5,980.00	88.65	200.20	344.00	337.00	21.17	10.67
1984	1,151.00	9,285.00	84.22	515.00	636.00	314.00	100.95	16.00
1985	1,824.90	16,150.00	84.98	678.30	1,146.60	761.00	155.50	20.00
1986	4,503.00	39,500.00	86.00	197.00	2,528.00	1,698.00	153.10	23.33
1987	8,825.90	119,270.00	91.42	4,174.40	4,651.50	5,533.00	233.20	20.00
1988	26,645.00	3,700,470.00	98.55	14,062.60	12,582.30	14,415.00	262.10	36.17
1989	60,155.40	847,260.00	105.25	28,806.80	31,348.60	36,743.00	70.60	35.00
1990	94,813.20	1,281,260.00	109.88	38,437.80	56,375.40	56,693.00	25.60	33.25
1991	139,156.90	1,976,590.00	114.60	57,004.00	82,152.90	88,280.00	38.70	32.00
1992	212,327.40	2,497,970.00	118.50	84,930.90	127,396.00	109,849.00	56.70	35.83
1993	302,418.00	3,476,070.00	123.60	100,806.00	201,612.00	147,118.00	-0.60	12.00
1994	402,574.30	4,800,531.00		176,523.00	307,383.00	174,457.00	10.00	9.99
1995	504,430.50	5,482,313.00		204,519.00	352,330.00	214,897.00	6.60	7.61

Source: Bank of Uganda *Quarterly Economic Reports*, *World Tables* and IFS.

The government

The characteristic feature of the banking system was that lending decisions were not based on commercial assessment of risk against expected return. On the contrary, political interference and financing of state owned enterprises were common phenomena. The government also directed the commercial banks through the central bank to concentrate lending in three main areas: manufacturing, agriculture, and trade and commerce. Lending to agriculture is short term, taking the form of crop financing, and not largely for farming or expansion of the sector.

4. Impact of financial liberalization

The impact of financial liberalization, particularly a rise in the real deposit interest rate, alters the composition of assets in the financial portfolio of households. Savings are likely to be held in favour of FFS assets and to the extent that financial flows are a necessary ingredient in economic growth, then the non-household/non-bank private sector ought to benefit through increased access to bank credit. Liberalization also improves the net worth of borrowers who have likely been paying high premiums to obtain credit in the informal sector. The ability of the formal financial system to accommodate these potential clients therefore becomes an issue in the short run since a failure to do so might result in lowered investment and excess liquidity in the banking system.

Financial liberalization requires as a pre-condition that fiscal discipline on the part of government prevails. Accommodation of fiscal deficits by the banking system therefore ought to be reduced in order to crowd in the private sector. To this end, we shall investigate whether this was the experience in Uganda following financial liberalization.

There is, however, a critical issue at hand in that most rural households in Uganda keep their wealth in the form of livestock (which, in addition, is a sign of social standing), land and commodity stocks (inflationary hedges). Have the real deposit rates in Uganda risen enough to encourage rural households to substitute their wealth for time deposits? Or how informed are they about banking? These are some of the fundamentals that cannot be captured quantitatively and are only captured in the wealth portfolios of households.

Financial sector reform

Having presented a brief analysis of the financial system, we now turn our attention to the effects of liberalization. The major objectives of the financial sector reforms included:

- Strengthening the supervisory and regulatory role of Bank of Uganda (BoU).
- Liberalizing interest rates in an attempt to deepen the financial market and widen the range of financial instruments offered.
- Restructuring and re-capitalizing weak commercial banks in order to increase their efficiency and viability.

For the purpose of this study, we concentrate on indicators, especially liquidity indicators, such as interest rates, intermediation margins, capitalization and level of non-performing loans, direction of credit, and monetary ratios.

Interest rates

Interest rates as a tool for executing financial intermediation have been constrained by three factors:

- High inflation rates that peaked at triple digit levels in 1987 and 1988; it would be illogical to have triple digit levels in interest rates.
- Lack of adequate types of financial instruments convenient and acceptable to the public.
- The general weakness in the safety and soundness of the financial sector, resulting in a higher proportion of currency held outside banks in relation to broad money.

The first task of the monetary authorities was to create conditions for real positive interest rates by reducing inflation rates from triple digit levels to low levels during the structural adjustment programme (SAP) period. As a result of the monetary authorities' commitment to fighting inflation, interest rates became positive in real terms by May 1990 following the decline of inflation to 33% per annum. The policy stance then was to keep interest rates at least four percentage points above the average annual inflation rates for the preceding three months while varying the lending rates according to the threshold on savings rates. This was generally implemented except for the period June and August 1991 when inflation got slightly out of control. The stimulation of savings was not responding as required, however, due to structural problems in the financial sector.

In November 1992, interest rates were linked to the market determined treasury bill rate. However, during 1993/94 real interest rates occasionally turned out negative owing to rising inflation and declining nominal interest rates (see Table 3). These were caused, respectively, by a brief spell of drought that hit the country thus affecting the food subgroup (consequently, the weighted CPI) and the excess liquidity in the banking system following large inflows of funds into the economy. Since July 1994, interest rates have been completely liberalized.

Real interest rates such as deposit rates are computed as:

$$\left(1+\frac{DR}{100}\right)-\left(1+\frac{\Delta CPI^{e}}{100}\right) \tag{4}$$

where DR is the nominal deposit rate and ΔCPI^{e} is the expected inflation. Here we assume the agents form their expectations based on past values of inflation and we adopt the model used by Nugeant and Glezakos (1979)[5] to compute the adjustment coefficient (β). Using quarterly data for the sample period 1982–1995, we find that a β value of 1 minimizes the forecast errors. A rational expectations model is ignored here because we believe that agents in Uganda do not have all the available information needed to process the future inflation rate, let alone the technique of processing this information.

Table 3: Intermediation margins of the banking system

	Nominal deposit rate (%)	Nominal lending rate (%)	Inflation rate (%)	Real deposit rate (%)	Real lending rate (%)	Interme-diation margin (nominal)	Interme-diation margin (real)
1986 Jun	30.00	33.33	154.26	-48.87	-47.56	3.33	1.31
Dec	38.00	45.00	358.42	-69.90	-68.37	7.00	1.53
1987 Jun	38.00	45.00	233.26	-58.59	-56.49	7.00	2.10
Dec	30.00	35.00	163.03	-50.58	-48.68	5.00	1.90
1988 Jun	30.00	35.00	243.10	-62.11	-60.65	5.00	1.46
Dec	29.67	40.00	118.88	-40.76	-36.04	10.33	4.72
1989 Jun	33.00	40.00	86.25	-28.59	-24.83	7.00	3.76
Dec	33.00	40.00	80.36	-26.26	-22.38	7.00	3.88
1990 Jun	32.00	40.00	29.13	2.22	8.41	8.00	6.20
Dec	30.00	36.00	58.23	-17.84	-14.05	6.00	3.79
1991 Jun	29.00	32.00	48.89	-13.36	-11.34	3.00	2.01
Dec	34.00	37.00	19.85	11.81	14.31	3.00	2.50
1992 Jun	38.00	40.00	64.41	-16.06	-14.85	2.00	1.22
Dec	32.33	33.00	43.45	-7.75	-7.28	0.67	0.47
1993 Jun	17.87	27.00	0.50	17.28	26.37	9.13	9.08
Dec	12.94	20.00	3.34	9.29	16.13	7.06	6.83
1994 Jun	10.07	21.30	14.81	-4.12	5.66	11.23	9.78
Dec	6.61	22.35	6.93	-0.30	14.42	15.74	14.72
1995 Jun	8.05	19.53	2.47	5.45	16.65	11.48	11.20

Source: Research Department, Bank of Uganda.

A gradual decline in the intermediation margins was observed until December 1992. The margins increased following the partial and full liberalization of interest rates in November 1992 and July 1994, respectively. The intermediation margins are expected to decline, however, as the banking sector endeavours to:

- Reduce the costs of asset management.
- Lower intermediation costs by addressing structural and institutional problems affecting the financial system.
- Increase competition within the financial system and from offshore sources.

Recapitalization of commercial banks

Until January 1993, the 1966 Banking Act required the equivalent of only US$20,000 to open a bank. This became dismally inadequate in view of the risks (especially default risk) commercial banks faced. As a result of the large share of non-performing assets, the earning capacity of the capital base of commercial banks eroded; combined with weak management, this hampered the healthy operation of the banking system.

The need to recapitalize the banking system arose in order to:

- Cover the system from any unexpected portfolio shocks and risks associated with the conduct of banking business in Uganda.

- Allow the banks to pursue investment activities that are within their investment opportunity set, thus allowing the banks to take on extra risk with higher returns but with own resources.
- Over time, reduce reliance on the collateral requirement as a precondition for borrowing.

The 1993 Financial Institution Act requires indigenous and foreign owned commercial banks to have a minimum paid up capital of Ush0.5 billion and Ush1.0 billion, respectively. This raised the amount of total paid-up capital from Ush2.649 billion to Ush27.81 billion, in March 1993 and June 1995, respectively. The risk-weighted ratios of the commercial banking system in Uganda are substantial, given that most of their assets are in the form of advances, which unfortunately attract a risk weighting of 100%.

The volume of non-performing loans grew from Ush27.70 billion to Ush134.61 billion over the period March 1993 to June 1995, while the total capital[6] deteriorated from negative Ush7.05 billion to negative Ush103.7 billion over the same period (Table 4). The deterioration in the total capital can be attributed to the prudential regulation of the Bank of Uganda where non-performing assets (including any non-repayment of principal and interest payments on advances falling due) are deducted from the paid-up capital of the respective commercial bank. The major implication of this is to curtail commercial bank activity, especially support of private sector investment activity. The other potential problem is that since the earning capacity of banks is constrained, the risk of collapse of an institution is raised and could even destabilize the whole banking industry.

The aim of BoU is to avoid the emergence of a liquidity crisis in any bank. In the extreme case, BoU recently took over the management of two commercial banks whose non-performing assets in relation to their paid-up capital signalled an impending liquidity

Table 4: Commercial banks' level of capitalization, total advances and non-performing assets (all commercial banks) (Ush million)

		Paid up capital	Total capital	Total advances assets	Non-performing
1992	June	1,529.70	-221.50	86,185.50	
	Sept	1,597.40	-10,438.90	102,282.50	
	Dec	1,186.10	3,784.90	121,878.30	32,678.30
1993	Mar	2,649.70	-7,049.10	161,384.70	27,703.70
	June	3,961.80	-2,784.90	162,770.50	26,284.20
	Sept	5,763.10	76,593.30	175,613.20	71,190.20
	Dec	6,914.30	7,254.70	196,644.10	77,719.50
1994	Mar	8,859.10	-68,345.10	216,934.70	115,061.80
	June	11,392.40	-76,112.10	215,499.30	126,428.80
	Sept	11,877.60	-43,697.10	232,254.10	123,410.20
	Dec	18,580.10	-114,317.70	241,802.70	119,136.30
1995	Mar	27,806.10	-103,669.60	243,808.10	134,261.50

Source: Banks' Supervision Department, Bank of Uganda.

crisis. In the ensuing period, the two commercial banks continued to accumulate excess reserves, which became of concern to the monetary authorities.

The ratio of 4% and 8%, respectively, is the minimum requirement for core and total capital.[7] When UCB and Cooperative Bank are excluded from the system, an encouraging picture is painted of the banking system. Table 5 suggests that the level of non-performing loans increased from Ush4.89 billion to Ush41.23 billion, a far smaller figure than Ush134.26 billion for the whole banking industry. Total capital nearly doubled from Ush4.18 billion to Ush7.55 billion over the period March 1993 to June 1995, compared with the negative position of the whole banking industry.

Table 5: Commercial banks' level of capitalization, total advances and non-performing assets (excluding UCB and CO-OP) (Ush million)

		Paid up capital	Total capital	Total advances	Non-performing assets
1992	Jun	1,140.60	7,092.10	36,839.40	
	Sep	1,200.00	3,947.10	45,139.60	
	Dec	784.70	2,693.20	46,013.50	17,158.40
1993	Mar	1,397.30	4,182.80	56,761.50	4,893.30
	Jun	2,709.40	8,447.40	53,447.80	5,904.20
	Sep	2,867.60	14,089.90	63,952.50	11,582.30
	Dec	4,004.00	4,070.00	77,056.40	12,948.80
1994	Mar	4,051.40	5,866.30	92,339.20	14,003.80
	Jun	4,781.30	4,808.30	94,955.50	26,045.10
	Sep	5,185.60	4,793.90	111,837.90	26,969.40
	Dec	7,057.90	5,784.40	112,520.70	23,370.20
1995	Mar	10,036.30	7,549.20	116,957.80	41,226.00

Source: Banks' Supervision Department, Bank of Uganda.

Excess reserves

Beginning in 1977, commercial banks in Uganda were required to hold 10% of their deposits as statutory requirements in unremunerated accounts with BoU. As a part of the financial sector liberalization, in 1993 this requirement was revised downwards to 8% for demand deposits and 7% for time/savings deposits.

Table 6 reveals that excess reserves of commercial banks with Bank of Uganda grew from a negative Ush7.25 billion in June 1991 to Ush73.39 billion in June 1995. This may be symptomatic of the following:

- Illiquidity of the Ugandan inter-bank market.
- Declining demand for treasury bills as a result of the weak secondary market.
- Lack of potentially "credible" borrowers.
- Caution within the banking industry not to violate statutory requirements following the enactment of the Financial Institutions Statute in 1993.

In brief, most Ugandan commercial banks prefer to keep excess reserves on hand that are sufficient to cover adverse inter-bank clearing. In the developed inter-bank markets, commercial banks would keep a much smaller amount of excess reserves on hand and largely depend on borrowing in the inter-bank market to meet a larger proportion of their inter-bank clearing needs.

Table 6: Commercial bank reserves with Bank of Uganda (Ush billion)

		Demand deposits	Time & savings deposits	Actual reserves	Statutory reserves	Excess reserves
1991	June	58.00	24.50	1.00	8.25	-7.25
1992	June	82.10	46.20	29.60	12.83	16.77
1993	June	122.00	80.00	45.60	15.36	30.24
	Sep	120.10	85.90	41.70	15.62	26.08
	Dec	125.10	96.20	30.50	16.74	13.76
1994	Mar	130.20	101.60	29.60	17.53	12.07
	June	157.20	110.00	60.40	20.28	40.12
	Sept	164.30	124.00	61.90	21.82	40.08
	Dec	177.50	129.90	60.30	23.29	37.01
1995	Jan	184.20	123.10	53.00	23.35	29.65
	Feb	189.50	120.10	51.50	23.57	27.93
	Mar	188.70	123.30	64.50	23.73	40.77
	Apr	196.70	120.90	71.10	24.20	46.90
	May	194.40	122.20	67.50	24.11	43.39
	June	206.30	128.60	98.90	25.51	73.39

Source: Research Department, Bank of Uganda.

Estimates at the BoU suggest that commercial banks have a voluntary demand of Ush17 billion in excess reserves in order to meet their clearing needs. On the basis of the 91-day and 182-day treasury bill rates, and the fact that these reserves earn a zero interest rate in BoU, the opportunity cost of such large reserves is computed at between Ush1.0 billion and Ush2.5 billion per annum. This reflects the high cost of intermediation prevailing in the Ugandan financial system and further suggests illiquidity in the inter-bank and treasury bill markets. The illiquidity in the inter-bank market is highly associated with the structural problems within the banking sector (discussed above). The weak secondary market in treasury bills and the large proportion of the budget deficit that is externally rather than bond financed are partly responsible for the illiquidity and constrained growth of the treasury bill market.

Other reasons that would explain the behaviour of the commercial banks in diverting a greater proportion of their loanable funds to the accumulation of reserves include the following:

- Avoidance of adverse incentive and selection problems may have led to the rationing of credit to the private sector.
- The adverse effects of high real interest rates that encroach on the profitability of sound investment lead to fears of bankruptcy and default problems.
- Liberalization of the foreign exchange market has pushed some prime borrowers to external sources of credit.

Since February 1991, commercial banks have been the main bidders in the weekly auction and to date they hold nearly 80% of all outstanding bills. This may suggest a shift of loanable funds from the credit to the money market given that treasury bills are considered a safe investment. However, in May 1995 the build-up of excess reserves raised the concern of the monetary authorities. The commercial banks were in effect not purchasing treasury bills and instead opted to accumulate reserves that earned no interest. The high re-discount rate and lack of secondary markets in treasury bills appear to have made this instrument illiquid. Consequently, in July 1995, the authorities changed the policy of setting the re-discount rate and made it more market based. The demand for treasury bills subsequently increased to an estimated Ush9 billion in just one week.

Direction of credit

Until June 1988, credit to government accounted for more than 50% of the total credit. The effect of this was to crowd out the private sector. Since then, credit to the private sector has grown (except in 1992), with its ratio to total credit sometimes exceeding unity. This has largely been due to the government's net repayment to the banking system, an act that appears to be crowding in the private sector. However, credit to the private sector has not grown in proportion to the loanable funds available in the banking system. Table 7 shows that since December 1993 there has been a net repayment by government to the banking system while credit to the private sector has grown by an estimated average of 16.97% over the same period.

Table 7: Direction of the banking system credit (in millions of June 1990 shillings)

	Credit to the private sector (Cp)	Credit to the public sector (Cg)	Total domestic credit (CT)	Cp/CT	Annual growth rate of Cp (%)
1982 Jun	39,194.16	87,231.32	126,425.48	0.31	
Dec	50,790.01	81,065.90	131,855.91	0.39	29.59
1983 Jun	55,781.09	93,076.71	148,857.80	0.37	42.32
Dec	69,010.61	79,355.00	148,365.61	0.47	35.87
1984 Jun	77,256.31	74,486.30	151,742.61	0.51	38.50
Dec	52,747.64	64,616.83	117,364.47	0.45	-23.57
1985 Jun	68,402.97	67,891.84	136,294.81	0.50	-11.46
Dec	58,673.13	72,831.98	131,505.12	0.45	11.23
1986 Jun	41,872.02	45,185.81	87,057.83	0.48	-38.79
Dec	30,115.30	27,542.59	57,657.89	0.52	-48.67
1987 Jun	12,551.24	18,517.42	31,068.66	0.40	-70.02
Dec	15,740.39	50,013.86	65,754.25	0.24	-47.73
1988 Jun	29,567.03	-414.40	29,152.63	1.01	135.57
Dec	32,101.20	23,434.50	55,535.70	0.58	103.94
1989 Jun	55,004.46	13,156.81	68,161.27	0.81	86.03
Dec	60,619.54	8,005.82	68,625.36	0.88	88.84

continued

Credit to the	Credit to the private sector (Cp)	Total public sector (Cg)	Cp/CT domestic credit (CT)	Annual	growth rate of Cp (%)
1990 Jun	70,641.80	-1560.40	69,081.40	1.02	28.43
Dec	61,799.50	7,256.65	69,056.14	0.89	1.95
1991 Jun	72,420.20	8712.08	81,132.27	0.89	2.52
Dec	63,969.09	47,623.34	111,592.43	0.57	3.51
1992 Jun	54,419.81	23,387.25	77,807.06	0.70	-24.86
Dec	60,232.96	20,829.42	81,062.38	0.74	-5.84
1993 Jun	68,575.49	16,259.75	84,835.23	0.81	26.01
Dec	74,612.99	-382.04	74,230.94	1.01	23.87
1994 Jun	75,417.19	-4,425.89	70,991.30	1.06	9.98
Dec	86,106.14	-17,256.96	68,849.18	1.25	15.40
1995 Jun	89,459.94	-37,249.06	52,210.88	1.71	18.62
Dec	291,932.00	-109,295.00	102,637.00	-2.67	239.04

Source: Research Department, Bank of Uganda.

Offshore financing

The liberalization of the foreign exchange market made access to offshore financing possible. This source of finance became increasingly attractive particularly at the time when the domestic currency was appreciating and the domestic real interest rates were rising. To date, some commercial banks and export companies have drawn on it. However, the capital position of such banks ought to be sound in order to allow them to take on extra risk with higher returns but with own resources. (See also Table 8.)

A common practice of offshore financing is seen in the area of export pre-financing. With the high real lending rates accompanied by an appreciating shilling, exporters found it attractive to access credit from offshore markets in the form of pre-finance.

The implication of this development for the domestic financial system is not very encouraging. First, the growth of the inter-bank market may be slowed due to cheap sources of credit off shore. Second, since exporters are rated creditworthy by the commercial banks, demand for loanable funds is likely to fall, leaving the banking system with excess loanable funds.

Given that a large proportion of the government budget is also externally rather than bond financed, the growth of the treasury bill market is being constrained.

Overall, over the short-run and long-run periods, the external liability of the economy is likely to increase and unless these resources are used for directly productive purposes, then external debt problems are likely to intensify in the future. In brief, as a result of increasing use of offshore financing the following may happen:

- Increase in off-balance-sheet transactions.[8]
- Turning away of small depositors.[9]
- Continued build up of excess reserves.
- Constrained growth of the treasury bill market.
- Build up of external liabilities over the short-run and long-run periods.

Table 8: Shilling value of foreign exchange and time/deposit accounts

	Foreign exchange A/Cs	Time and savings A/Cs	Foreign exchange A/Cs	Time and savings A/Cs
	(June 1992 shillings, millions)		Annual (real growth rates)	
1992 Jun	24,270.80	46,172.30		
Sept	24,484.19	41,144.02		
Dec	32,658.28	49,550.06	34.56	7.32
1993 Mar	26,426.26	55,626.58	7.93	35.20
June	29,661.99	65,632.14	-9.17	32.46
Sept	26,132.81	70,192.08	-1.11	26.18
Dec	29,257.17	78,370.22	-1.36	19.41
1994 Mar	35,608.38	77,966.90	36.26	11.08
June	34,030.29	80,933.18	16.31	3.27
Sept	32,996.66	88,212.56	-7.33	13.14
Dec	46,774.98	96,096.08	37.45	18.74
1995 Mar	46,539.68	88,469.64	41.04	0.29
June	46,731.34	89,300.65	-0.09	-7.07
Sept	71,980.00	134,250.00	118.14	52.19
Dec	75,183.00	148,148.00	60.73	54.17

Source: Research Department, Bank of Uganda.

5. Commercial banks' views

Section 4 pointed out some important aspects pertaining to the banking industry. These include high intermediation margins, high shares of non-performing assets even in the non-government owned banks and excess liquidity. To investigate the causes of these, we carried out a survey that involved sending out questionnaires to banks and non-bank financial institutions. The aim was to find out from the financial intermediaries themselves how they address the following issues and relate these to the major aspects pointed out in Section 4:

- Setting of deposit rates
- Lending practices
- Intermediation margins
- Frequency of interest rate payments and other bank charges
- Non-performing assets
- Causes of default
- Bank of Uganda guidelines of provisioning for bad debts
- Proposals for loan recovery
- Holding of excess reserves with Bank of Uganda
- Transaction costs

The survey covered 18 banks in operation as at December 1995, plus one housing finance company. Of the banks surveyed, only two did not respond to the questionnaire. It should be noted that the banks that responded account for 90% of the assets of the banking industry.

Banks recognized that the economic environment has greatly improved. In particular, the liberalization of interest rates has introduced competition within the banking industry. As a result, banks are investing substantially in improving efficiency in their banking business, as well as to attract customers. In some instances, the banks pay higher than average deposit rates to attract or retain corporate customers, but this is more the exception than the rule.

Interest on savings deposits is paid either quarterly or yearly, while interest on fixed deposits is assessed and paid on maturity. Interest on loans and advances is assessed and payable on a monthly basis by all banks. The banks use this practice as an early warning signal on performance.

Commitment fees are charged once the loan is approved. About 55% of the banks charge a rate of 1% of the loan amount. One bank indicated a rate of 0.5%, while three

banks indicated a rate of 2%. The highest rate reported was 3%. It is again evident that competition is yet to lead to a narrower range for the commitment fees. In relation to ledger fees, banks were equally split between a monthly charge of the equivalent of US$2–4 and a charge based on activity on the account.

Almost all banks called for setting up commercial courts or tribunals to speedily deal with enforcement of loan contracts. Other minor proposals included sharing information on defaulters and extending the services of the Non-Performing Assets Recovery Trust (NPART) to other banks. The latter proposal could be costly to government if it were ever implemented. As for setting up commercial courts or tribunals, there is an urgent need for a follow up.

To further strengthen the performance of the banking system, the banks have called for:

- Increased liquidity in the inter-bank market.
- Introduction of secondary trading in treasury bills.
- Development of a code of conduct for the banking industry.
- Stricter supervision.

Other responses are presented in the sections that follow, covering deposit rates, lending practices, non-performing assets and other areas.

Setting of deposit rates

The survey results indicate that about 29% of the banking industry relies on the auction determined treasury bill rates in setting deposit rates. The size and maturity of the deposits closely follow this factor. The treasury bill auction rates mainly reflect the overall liquidity position within the banking industry and the stance of monetary policy. Surprisingly few banks rely on reported inflation rates and announced policy rates (i.e., discount and bank rates) when setting deposit rates.

These findings lead to two conclusions. First, banks are anxious to maintain competitive deposit rates in case the public switches its portfolio away from deposits to treasury bills. Second, the discount window at the central bank is not looked upon by banks as a major source of liquidity support in case of a temporary shortfall. Currently, the window is not actively used by commercial banks.

The fact that banks are not very sensitive to changes in policy related rates is a major constraint to the conduct of monetary policy. Further, to the extent that banks rely significantly on the treasury bill rates in guiding deposit rates, there is an urgent need to improve the depth of the treasury bill market.

Bank lending practices

Although banks acknowledge increased competition within the banking industry, it is yet to be a major factor in setting of lending rates. Rather, the treasury bill rates

and recovery risk are the key factors in setting lending rates. About 60% of the respondents indicated these two factors as key in determining lending rates.

Economic fundamentals play a peripheral role in setting rates. Most of the banks charge rates ranging between 8 and 21%. In the assessment of risk, a number of factors are looked at but it was difficult from the returns to clearly identify the uniform guiding rules.

Some of the banks place more emphasis on the nature and location of security, preferring urban to rural based securities. In other cases, banks emphasize the track record of the borrower and the business the client gives the bank. The size, term of the loan and nature of the project to be financed closely follow these. A number of banks revealed that lending practices are varied across customers to allow priority rates and low charges to prime customers.

One factor that has greatly influenced practice in the banking industry is the new Financial Institutions Act. All banks indicated that procedures and practices for credit extension have been tightened as a means for meeting prudential requirements. Related to this, most banks lend for short periods to permit recycling of funds and proper risk assessment.

Intermediation margins

A striking factor in a disaggregated analysis of the banking industry is the degree of diversity of performance. The intermediation margins vary from 4% to 20%. Banks indicated a number of reasons for high intermediation margins. These include set-up and labour costs, rental charges, and an adequate provision for a profit margin. Surprisingly, only three banks gave provision for non-performing loans as a cause for high intermediation costs. This is inconsistent with the high prominence given to recovery risk in setting lending rates. Of the banks surveyed, six reported that project type and sectional allocation had an important role in determining the intermediation margins. This largely works out in terms of expected costs of loan screening, monitoring and supervision, which vary across projects and sectors.

Non-performing assets

The state of the banking system has been widely discussed in a number of World Bank documents on the financial sector. Several of the banks with a high proportion of non-performing loans in their portfolios are classified as technically insolvent. In the survey results, 13 of the 18 banks responded to the question of whether they considered non-performing loans a serious problem to the conduct of their business. Only five thought it was a serious problem. Almost all the banks indicated that provisioning for bad loans is regularly made in line with Bank of Uganda guidelines. Judging from the response of the banks, it is difficult to support the view of a “looming crisis” within the banking system. On the part of the banks, however, the major effect of non-performing assets is to lower the return on the capital used.

As stated above, most of the banks revealed that efforts are being made to improve loan procedures. In particular, loan screening, monitoring and performance have greatly improved. Further, notices are regularly sent to defaulting customers to remind them of their commitment and the risk of non-response. Some of the customers respond by seeking a renegotiation of credit terms.

The banks also revealed that efforts have been stepped up to use the judicial system to recover loan losses. Eight of the banks indicated increased success in their foreclosure business. However, the banks pointed out numerous problems associated with foreclosure. The three main problems are that the legal system takes too long and is costly; that there is a lack of secondary markets for seized collateral (largely in the case of rural properties); and that there is a significant level of misleading valuation by property valuers and forged titles of ownership. The problem of political interference was pointed out by only one bank. The other problems reported varied across banks and included auctioneers absconding with sales proceeds, weaknesses within the Lands Office whereby caveats on mortgaged property are accepted thus making it difficult to foreclose, and properties mortgaged under the power of attorney being put to legal disputes.

One of the banks indicated that defaulting customers are requested to issue post-dated cheques to meet outstanding liabilities. Given the strictness of the law relating to bouncing cheques, this measure could be successful.

The stepped up aggressiveness by banks has improved loan performance. Five banks reported reducing the share of non-performing loans, while another five indicated normal increases proportional to the increase in the value of the loan book. Four banks reported experiencing an increasing share of non-performing assets although two of them indicated that the assets were growing at a declining rate. The remainder of the banks said they had no non-performing assets despite their being in operation for at least two years.

Causes of default

It was quite interesting to learn that not all debtors are wilful defaulters, and in a significant number of cases the borrowers do reveal reasons for non-performance. The reasons for default are many but the major ones revolve around poor or non-performance of the project. These include:

- A build up of non-performing debts by the projects. Government was pointed out as a major defaulter in servicing of debts owed to companies.
- Adverse costs or price movements, making the projects unviable.
- Competition, especially from cheap imports of finished goods.
- Inadequate funding of the projects.
- Diversion of funds by the proprietor(s).
- Embezzlement by employees.
- Death of a promoter.
- Poor management of the project.
- Insecurity, causing destruction of the project.
- Poor project design.

Borrowers may be blamed for some of the project failures, but some of the causes are beyond their control such as adverse cost/price movements and competition. The banks and government ought to take part of the blame. Lending practices at times failed to identify poorly designed projects and laxity in monitoring overstretched the support by the banks beyond what was prudent. In the case of government, the failure to meet obligations on time is responsible for the poor financial performance of their suppliers.

The worrying aspect in financial intermediation is the culture of wilful default. Banks reported that the practice is still prevalent among the borrowing public. Apart from strengthening the law and intensifying loan screening and monitoring, little can be done to address the problem.

Assessment of the Bank of Uganda guidelines on provisioning for bad debts

About 60% of the banks considered the guidelines as appropriate and in line with their internal controls. Only one bank indicated that the provisioning is stringent. Some banks made proposals to reduce the punitive nature of the guidelines, although none of them was supported by more than one bank. These include:

- Giving weight to the value and liquidity of the security.
- Extending the transitory period for meeting capital requirements.
- Making the provisions exempt from tax.

The overall judgement of the guidelines is that they are appropriate and there is no urgent need to change them.

Holding of excess reserves with Bank of Uganda

Eight of the surveyed banks indicated that they were not holding excess reserves. For those that admitted to holding excess reserves, the main reason given for the practice was prudence. The banks indicated that there is lack of a highly liquid window for support in case of a temporary shortfall and that there are few liquid instruments that can be used as part of the overall management of liquidity. In addition, it is difficult for banks to adequately anticipate the size of a net debit clearing against them.

Six of these banks reported that at least half of their total deposits are held as current accounts, which are not interest bearing. Consequently, not much cost is incurred when such resources are held as excess reserves with Bank of Uganda. Three banks reported that when such cost is incurred, they are always covered by margins in the lending rates. One bank interestingly reported that it was more cost-effective to make a loss on these reserves than to incur higher expenses in the process of recovering loans/advances in case an unanticipated demand for cash by customers arose.

A number of banks also indicated that the limited availability of viable investment opportunities in both the real and the financial sectors was one strong reason for holding

excess reserves with Bank of Uganda. It is even surprising to note that banks do not consider treasury bills as liquid instruments. The Bank of Uganda has since April 1995 related the rediscount rate to the market determined treasury bill discount rate with a view to improving the liquidity of the instrument. Beyond this, the bank accepts treasury bills within the remaining period of maturity of less than 91 days as eligible security for access to short-term credit by the central bank. It may be that these two policies have not been fully understood by the commercial banks.

In fact, in responding to the question of why they do not actively participate in the treasury bill auctions, the banks indicated two main reasons: the instrument is not liquid and the return is considered low. Other reasons given for holding of excess reserves include:

- Absence of short-term paper.
- Punitive rediscount rate.
- Erratic availability of long-term dated paper.
- Lack of clear guidelines on participation.

Transaction costs

For almost all the banks, salaries and wages account for the biggest share of costs. In nine of the banks in the sample, wages and salaries amounted to over 40% of the total costs and in five of the banks were over 50% of total costs. In almost all the banks the four main categories of expenditure are wages and salaries, administrative costs, communication, and rent and rates. For any restructuring exercise aimed at increasing efficiency to be effective, it should target these four cost categories.

Costs directly related to monitoring are still low. Only one bank indicated having devoted 30% of its total costs to loan monitoring and this bank reported having no non-performing assets in its portfolio. It would therefore seem that most banks are emphasizing loan screening and there are indications that monitoring costs are only beginning to rise as a proportion of the banks' costs. This could be attributed to the increasing emphasis on loan recovery whereby capital and personnel to monitor loans are now expanding. For reasons given earlier, enforcement costs as yet do not constitute a major item in the banks' costs.

6. Linking the formal and semi-formal financial institutions

Financial liberalization seems to have had negative impacts on small borrowers. To the extent that it has led commercial banks to become more cost conscious, the banks find the transaction costs of one big customer much lower in relation to those of several tens of small customers and the latter have ended up being turned away.

The size of minimum deposits and the accompanying regulations set by a number of commercial banks are not commensurate with the income and consumption patterns of average Ugandans, leave alone the fact that ordinary people cannot easily access credit from the same banks. Such potential customers have ended up using the alternative facilities of the semi-formal financial institutions, as discussed earlier. This aside, little has been pointed out in relation to extension of financial intermediation to the rural areas. If anything, even the scanty services that were available in upcountry regions are being faced with closure as banks endeavour to cut costs and maximize their profitability. Financial liberalization then appears to be contracting the services offered to a large geographical part of the country and concentrating these on the major towns such as Kampala, Jinja and Mbarara.

It is recognized that nearly 90% of the population is rural based and largely engaged in agriculture, which accounts for almost 70% of the total GDP. The sad fact of financial liberalization is that this size of population and economic activity is faced with a fast declining availability of financial services offered by formal financial intermediaries. Since the move towards financial sector liberalization in November 1992, the ratio of credit for agricultural production to total agricultural credit has declined at an alarming rate (refer to Table 9). This clearly reflects that banks have little confidence in lending for agricultural production largely because of the information asymmetry prevailing between the banks and the rural population. The former perceive the latter as a high-risk group and thus deny them credit.

It is not the case, however, that the rural population is always a risky lot. Some rural credit schemes such as the one administered by the South West Region Agricultural Rehabilitation Programme (SWRARP) serve to illustrate this point. The credit scheme covers the six districts of Mbarara, Kasese, Bundibugyo, Bushenyi, Kabarole and Kabale. Basically, it provides rural farmers with short-term credit that is payable in six months to cover different aspects of peasant farming. Although the initial funding of this scheme was from the World Bank, it has on average recorded a 90% on-time loan repayment over the past three years, with late repayment largely explained by factors such as drought and marketing delays. To date, the scheme is running on a revolving fund basis even after the World Bank funding expired. The demand for credit is still unmet by the available

resources but the scheme's impact on rural productivity need not be overemphasized in this paper. The reason behind such success is largely attributed to the information base from which the scheme operates. Creditworthy customers and knowledge of investible projects backed up by repetitive transactions has ensured the success of this scheme.

Table 9: Commercial banks' advances and loans to the private sector (in millions of shillings)

	Agriculture			Industry	
	(i)	(ii)	(iii)	(iv)	(i)/(iii)
	Production	Crop finance	Total		
1987 Q1	222.80	1,919.90	2,142.70	442.80	0.10
Q2	193.20	1,521.30	1,714.50	358.20	0.11
Q3	304.67	2,713.00	3,017.67	719.70	0.10
Q4	821.90	3,422.70	4,244.60	1,125.10	0.19
1988 Q1	1,173.40	4,450.20	5,623.60	1,568.10	0.21
Q2	1,715.40	4,409.20	6,124.60	1,626.60	0.28
Q3	1,439.50	4,931.70	6,371.20	1469.80	0.23
Q4	2,217.70	4,370.20	6,587.90	1,881.70	0.34
1989 Q1	27,898.00	4,745.60	32,643.60	1,998.00	0.85
Q2	3,387.90	5,560.30	8,948.20	3,308.80	0.38
Q3	3,845.70	5,221.80	9,067.50	4,466.40	0.42
Q4	4,096.50	6,343.00	10,439.50	4,915.30	0.39
1990 Q1	4,871.20	7,919.50	12,790.70	4,766.40	0.38
Q2	6,838.70	8,993.50	15,832.20	5,119.40	0.43
Q3	6,188.70	9,020.20	15,208.90	6,546.70	0.41
Q4	8,319.90	12,120.40	20,440.30	7,106.90	0.41
1991 Q1	7,585.60	17,423.60	25,009.20	8,286.60	0.30
Q2	9,776.00	16,148.40	25,924.40	8,986.90	0.38
Q3	6,252.00	19,525.00	25,777.00	10,250.00	0.24
Q4	3,917.30	23,812.80	27,730.10	12,304.00	0.14
1992 Q1	5,940.80	24,116.70	30,057.50	15,435.80	0.20
Q2	2,542.60	22,768.20	25,310.80	17,785.70	0.10
Q3	5,733.10	27,433.40	33,166.50	17,764.70	0.17
Q4	5,854.40	27,014.30	32,868.70	18,686.50	0.18
1993 Q1	4,870.00	35,532.60	40,402.60	23,380.10	0.12
Q2	541.40	35,821.20	36,362.60	24,565.40	0.01
Q3	6,963.00	27,542.00	34,505.00	30,518.00	0.20
Q4	6,721.80	35,456.10	42,177.90	32,361.40	0.16
1994 Q1	4,928.00	41,720.30	46,648.30	35,015.90	0.11
Q2	600.30	40,891.40	41,491.70	40,184.40	0.01
Q3	3,332.20	49,366.10	52,698.30	41,217.60	0.06
Q4	3,582.20	48,437.70	52,019.90	45,699.90	0.07
1995 Q1	3,718.00	49,643.00	53,361.00	45,459.70	0.07
Q2	3,849.20	50,090.70	53,939.90	53,952.50	0.07
Q3	4,305.50	50,353.60	54,659.10	58,276.20	0.08
Q4	6,295.50	53,662.50	59,958.00	59,289.10	0.10

Source: Research Department, Bank of Uganda.

This points to one issue that policy makers should look into. It is known that there are some associations that have fairly successfully operated credit schemes in rural areas in isolation from the rest of the formal financial system. Strengthening the link of such associations with the formal financial sector would benefit both the banks and the rural population. The semi-formal agent (the credit association) would act to fill the information gap between the banks and the rural population and this would involve using associations to retail credit to the rural areas if it can be backed up by credit from the banking system. It would also bulk up savings at relatively low cost in the event of surpluses accruing in the rural areas. Such a link would lower the transaction costs of the banking system while maximizing its profitability and boosting rural productivity and hence incomes.

7. The role of the domestic financial system in Uganda's economic growth

In this section we briefly investigate how the financial system has contributed to the economic growth of Uganda. Basically, two competing hypotheses in the theory of development finance—those of supply-leading and demand-following finance—are analysed in relation to Uganda. The demand-following hypothesis postulates a causal relationship from real to financial sector growth; that is, as the real sector grows, the demand for financial services induces growth in the financial sector. The supply-leading hypothesis posits a causal relationship from financial to real sector growth, meaning that a deliberate creation of financial institutions and markets increases the availability of financial services and thus leads to the growth of the real sector.

The aim of this analysis is to assist us to understand how the financial liberalization experiments being conducted in Uganda are contributing to economic growth. The results generated could also offer policy prescriptions on how to proceed with further liberalization of the financial sector while bearing in mind the need to attain higher and sustainable economic growth rates. What follows is the empirical analysis.

Estimation techniques

We are also aware that time series testing procedures for causality are complex when the variables have unit roots. As this is the case for most macroeconomic variables, we then have to use the equivalent of an error correction model that permits us to estimate growth by a multivariate approach with a financial surrogate as one of the explanatory variables.

The time series properties of the variables will be investigated and their order of integration determined using the Dickey–Fuller (DF) and Durbin–Watson (DW) unit root tests. DF tests the size of the coefficient β_1 in the following equation:

$$\Delta x_t = \beta_0 + \beta_1 x_{t-1} + \varepsilon_t \tag{5}$$

The test is against the null hypothesis $H_0: \beta_1 = 0$. Rejection of the null suggests that the series is non-stationary and has to be differenced at least once in order to make it stationary. The DF statistic is the t-ratio on β_1 in the regression equation (5). The DW test statistic is defined as:

$$DW(x) = \frac{\sum(\Delta x_t)^2}{\sum(x_t - E[x])^2} \tag{6}$$

where $E[x]$ is the sample mean of x_t. The null hypothesis that the time series is stationary is rejected for values of DW close to zero, while for a stationary series DW ought to tend towards a value of 2.

One major drawback of the DF test is the assumption that the data generating process (DGP) is AR (1) process under the null. In the event of it not being so, then autocorrelation in the error term in Equation 6 biases the estimates. As a remedy, the use of the augmented Dickey–Fuller (ADF) test is adopted. The ADF regression model takes the form:

$$\Delta x_t = \beta_0 + \beta_1 x_{t-1} + \beta_i \sum_{i=1}^{n} \Delta x_{t-i} + u_t \tag{7}$$

The estimation procedure is similar to the DF tests.

Cointegration and ECM

Having established the order of stationarity, we can proceed to enter the I (1) variables into the cointegrating vector. The test for cointegration establishes whether a linear combination of I(1) variables is stationary and for this we use the well-known Johansen (1988) procedure. The two tests described by Johansen and Juselius (1990) are used to determine the number of cointegrating vectors, i.e, based on the maximal eigenvalue $(-T\ln(1-\mu_i))$ and the trace of the stochastic matrix $-(\Sigma - T.\ln(1-\mu_i))$.

Using the cointegrating vector(s) established above, a general-to-specific procedure is then used to estimate the dynamic error correction models. Other residual based diagnostic tests are also used, including testing for absence of autocorrelation, homoscedascity, and model specification, predictive failure and stability of the model.

Partial system and weak exogeneity

Using the α matrix, i.e, the adjustment/loading matrix, the hypothesis of weak exogeneity for the long-run parameters can be formulated as a parametric restriction on the adjustment coefficient. Using the VAR formulation enables us to express concisely a partial system as a conditional model and discuss its properties. In this case, we are not only able to model the endogenous variable but also to derive the stochastic properties of the conditioning variables in the VAR.

Consider the following equation

$$\Delta X_t = \mu + \Gamma(L)\Delta X_{t-1} + \prod X_{t-1} + \in_t \tag{8}$$

where $X_t = (X_{lt}, X_{2t})$, $\mu = (\mu_1, \mu_2)$, $\Gamma(L) = \{\gamma_{ij}\}$

$\prod = \{\pi_{ij}\}$ and $\prod$ is the matrix of long-run parameters

$\in_t = (\in_{1t}, \in_{2t})$

If there is one unit root in Equation 8, this would correspond to the definition of cointegration given by Engle and Granger (1987), where x_1 and x_2 are integrated of order 1 but with a linear combination βx_t, which is stationary. Here $\prod = \alpha\beta'$, and the 2 x 1 vectors α and β are both different from zero.

Equation 8 can be decomposed into a conditional model for x_1 given x_2, i.e:

$$\Delta x_{1t} = \varpi\Delta x_{2t} + (\alpha_1 - \varpi\alpha_2)\beta' X_{t-1} + \sum_{t=1}^{k-1}(\Gamma_{1t} - \varpi\Gamma_{2t})$$
$$\Delta x_{t-1} + \mu_1 - \varpi\mu_2 + \in_{1t} - \varpi \in_{2t} \tag{9}$$

where $\varpi = \Omega_{12}\Omega_{22}^{-1}$

and the marginal model of x_2 is

$$\Delta x_{2t} = \alpha_2\beta' X_{t-1} + \sum_{t=1}^{k-1}\Gamma_t\Delta X_{t-1} + \mu_2 + \in_{2t} \tag{10}$$

If $\alpha_2 = 0$ in Equation 10, then β' enters only in the conditional model (*9*) so that

$$\Delta x_{1t} = \varpi\Delta x_{2t} + \alpha_1\beta' X_{t-1} + \sum_{t=1}^{k-1}(\Gamma_{1t} - \varpi\Gamma_{2t})\,\Delta X_{t-1} + \mu_1 - \varpi\mu_2 + \in_{1t} + \in_{2t}$$

and

$$\Delta x_{2t} = \sum_{t=1}^{k-1}\Gamma_t\Delta X_{t-1} + \mu_2 + \in_{2t}$$

This implies that x_2 is weakly exogenous because it does not react to disequilibrium errors emanating from X_{t-1}. Should the coefficient of Δx_1 happen to be statistically equal to zero in Equation 10, then x_2 is said to be strongly exogenous and can be used as a policy variable.

Empirical investigations

To empirically test the hypotheses postulated above, we specify an industrial output function as

$$gdp = f(cr, prem, inf, lr) \qquad (11)$$

theory a priori would suggest $f_1 > 0$ and $f_2, f_3, f_4 < 0$

where
- gdp = index of industrial production, to proxy for total output
- cr = commercial bank credit to the industrial sector
- prem = premium on official exchange rate, to proxy for degree of foreign exchange market regulation and hence difficulty in acquiring imported raw materials
- lr = lending rate (cost of working capital from the banking system)
- infl = inflation to proxy for macroeconomic instability

Results

The time series properties of the variables are presented in Table 10 and point out that all the variables except *lp* are I(1). However, *Δlp* is I(1) hence it is included in the search for a cointegrating vector. To get a cointegrating vector for industrial output that is readily interpretable in economic terms, a VAR of two lags is used on *lgdp, lcr, lprem, inf* and *llr.* The Johansen and Juselius cointegration procedure results are reported in Table 11 and they basically suggest that using the trace of the stochastic matrix, and at 5% critical values, we can reject the hypothesis that there are at most two cointegrating vectors and accept the alternative of there being three. The three cointegrating vectors are reported in Table 12, where vector (ii) appears to be the one onto which we can normalize the industrial output. This is largely for two reasons:

- The β matrix, which is the vector of economic interest, seems to support the economic fundamentals as given by the *theory a priori* in Equation 11. This is largely on the grounds of the signs attached to the respective variables.
- The α matrix, which is the adjustment/loading matrix, i.e., the feedback of deviations from the long-run to the short-run behaviour of the endogenous variables, allows us to endogenize industrial output (*lgdp*). This is based on the size and sign attached to the coefficient of *lgdp*, which may suggest that it can be endogenized on this cointegrating vector.

Table 10: Time series properties of the variables 1987Q1–1995Q3

X	DW (X)	ADF (X)	DW (ΔX)	ADF (ΔX)	DW (Δ^2X)	ADF (Δ^2X)	Order of Integration
LP	0.02	-2.98 [3]	0.98	-2.78 [4]	2.72	-4.82 [4]	I (2)
LGDP	0.37	-1.72 [4]	2.14	-3.73 [4]			I (1)
LPREM	0.43	-0.85 [4]	1.88	-5.09 [4]			I (1)
LLR	0.22	-1.94 [4]	1.86	-4.05 [4]			I (1)
LCR	0.09	-2.82 [4]	2.22	-5.18 [4]			I (1)
cv		-3.5615		-3.5731		-3.5811	

where *LP, LGDP, LPREM, LLR, LCR* are, respectively, the logarithmic notions of *P, GDP, PREM, LR*, *RC*.

Note: *P* is the price deflator as measured by the consumer price index (CPI).
cv denotes critical values at 5% level,
Square brackets [ ] = order of lag.

Table 11: Johansen and Juselius cointegration procedure results

(VAR = 2) 1987Q1–1995Q3

Null	Alternative	-T.ln(1- μ_i)	5% critical values	$\sum$ -T.ln(1- μ_i)	5% critical values
r=0	r=1	62.35	33.32	121.73	66.49
r≤1	r =2	26.25	27.14	59.38	45.23
r≤2	r =3	19.75	21.07	33.12	28.70
r≤3	r =4	13.07	14.90	13.37	15.66
r≤4	r =5	0.29	8.18	0.29	6.50

Table 12: Cointegrating vectors

		lgdp	lcr	Δ lp	lprem	lr
(i)	β	-1.0000	0.6406	10.1288	-0.8375	-3.1824
	α	-0.1215	-0.0627	-0.8938	0.0962	0.0082
(ii)	β	-1.0000	0.3301	-0.4214	-0.15303	-1.8539
	α	0.8470	-0.2832	0.1908	-0.0030	0.0596
(iii)	β	-1.0000	-1.4040	4.8295	-2.8870	-8.3740
	α	0.0208	0.1046	-0.0279	0.1544	-0.0115

The error term is *egdp* and is derived from vector (ii) and expressed as *egdp* = *lgdp* - 0.3301* *lcr* + 0.4214*Δ*lp* + 0.15303* *lprem* + 1.8539* *lr*

The long-run relationship for industrial output is thus:

lgdp = 0.3301* *lcr* - 0.4214* Δ*lp* - 0 .15303* *lprem* - 1.8539* *llr*

Note the letter l before the variables denotes the logarithmic notion of the variable.

We also tested for the significance of the α coefficient in the marginal model using Equation 10; the results are presented in Table 13. They basically reveal that in this single equation, and at the 5% level of significance, *lcr, lprem* and *lp* are weakly exogenous to *lgdp* whereas *llr* is not. As a result, one would conclude that based on the evidence of the sample period 1987Q1 to 1995Q3, the supply-leading hypothesis of development finance prevailed in Uganda. Consequently, the current experiments with financial liberalization and restructuring that are designed to improve the efficiency of financial intermediaries will lead to economic growth only if credit to productive private sector enterprises increases. Economic growth, on the other hand, cannot lead the growth of credit to the private sector. This therefore calls for dismantling any impediments to increased availability of credit to the private sector such as the constraints listed in Section 5 and implementation of the recommendations suggested in Section 6. The declining lending rate also appears to have contributed to increased output. This highlights the point raised in the survey concerning preferential treatment of prime customers through lowered interest rates. We can cautiously conclude that competition is picking up and, if sustained, will over time lower the general level of lending rates and subsequently increase output.

Table 13: Results for test significance of α coefficient in the marginal model

X	α_2 coefficient	t-value	
Δ *lgdp*	-0.75	-3.71	[0.010]
Δ *lcr*	0.08	0.46	[0.653]
Δ^2 *lp*	-0.16	-1.66	[0.109]
Δ *lprem*	-0.12	0.56	[0.582]
Δ *lr*	-0.07	2.53	[0.018]

The reduced premium on the official exchange rate appears to have had an impact on increased output by availing the necessary foreign exchange to procure the needed imported intermediate goods. Reduced macroeconomic instability as measured by declining inflation levels has also had a hand in increasing output.

In the short run, however, there is no policy variable that can be used to influence output, as the results presented in Table 14 reveal. All that the authorities can do is to rely on the long-run relationship by further deregulating the foreign exchange market and removing any impediments that may serve to decrease credit to the private sector. The latter option will also lead to a decline in the cost of funds and hence increase output. Efforts to keep inflation at sustainable levels should also be encouraged. Table 15 suggests that the dynamic equation is stable.

Table 14: Final dynamic equation following general to specific approach
(1987Q1–1995Q3)

	Coefficient	t-value	
inpt	2.91	4.04	[0.00]
Δ^2 *lp(-1)*	-0.55	-1.89	[0.07]
Δ *lgdp(-1)*	-0.42	-2.42	[0.02]
egdp*(-2)*	-0.80	-4.39	[0.00]
R^2		0.43	
Adj. R^2		0.40	
D.W.		1.88	
F(3,18)		7.15	[0.02]
Serial correlation F(4,24)		1.0119	[0.421]
Functional form F(1,27)		1.7620	[0.195]
Heteroscedascity(1,19)		0.1180	[0.734]

Table 15: Stability and predictive ability test of the equation (1987Q1–1992Q4)

	Coefficient	t-Value	
inpt	3.07	4.20	[0.00]
Δ^2 *lp(-1)*	-0.52	-1.62	[0.12]
Δ *lgdp(-1)*	-0.41	-2.12	[0.05]
egdp(-2)	-0.84	-4.16	[0.00]
R^2		0.47	
Adj. R^2		0.40	
D.W.		1.80	
F(3,21)		6.2337	[0.003]
Serial correlation F(4,17)		0.7429	[0.576]
Functional form F(1,20		1.0390	[0.320]
Heteroscedascity F(1,23)		0.0241	[0.878]
Predictive failure test F(7,21)		0.3906	[0.897]
Chow test F(4,24)		0.6473	[0.634]

Granger causation

We also perform a bivariate test for causation between a financial surrogate and real activity variables. Credit to the manufacturing sector and the index of industrial production, respectively, are used. The Engle–Granger two-step procedure is used and the results are shown in Table 16. Basically, there appears to be a stable uni-directional static relationship coming from credit to the output of the manufacturing sector, but this relationship is not noted from output to credit to manufacturing sector. This is generally deduced from the stationarity of the errors realized from each regression. In the short run it is seen that there is no causation by either variable on the other at the 5% level. However, at the 10% level of significance, the long-run relationship (error term) causes growth in industrial output. This compares with the level of significance of 19.4% at which the error term causes growth in the level of credit to the manufacturing sector. This appears to support the earlier results reflecting the weak exogeneity of credit to the manufacturing sector in the relationship specified in Equation 11. Consequently, these results seem to point to the unique but important role credit to the manufacturing sector plays in increasing industrial output.

Table 16: Engle–Granger two-step method test for bivariate causation

Static regression for real activity:

$lgdp = 3.74 + 0.51\ lcr$

(34.84) (14.13)

$R^2 = 0.86,\ DW = 1.33$

where

$ecm = lgdp - 5.14 - 0.034\ lcr$

Test for stationarity of error term (*ecm*):

	Sample	Statistic (critical value)
ADF (1)	87Q4-95Q4	-4.11 (-3.53)
ADF (2)	88Q1-95Q4	-4.32 (-3.35)

Static regression for credit to manufacturing:

$lcr = -5.69 + 1.70\ lgdp$

(-9.45) (14.12)

$R^2 = 0.86,\ DW = 1.26$

continued

where

ecm2 = lcr + 5.69 - 1.70 *lgdp*

Test for stationarity of error term (**ecm2**):

	Sample	Statistic (critical value)	
ADF (1)	87Q4-95Q4	-3.50	(-3.53)
ADF (2)	88Q1-95Q4	-3.25	(-3.35)

Dynamic regression for Δ *lgdp* and test of significance for dropping Δ *lcr* variables

	Coefficient	t-value
inpt	0.09	4.42 [0.00]
Δ *lgdp(-1)*	-0.51	-2.59 [0.02]
Δ *lgdp(-2)*	-0.43	-2.47 [0.02]
Δ *lgdp(-3)*	-0.51	-3.46 [0.01]
ecm(-1)	-0.35	-1.72 [0.10]

F (3,22) = 0.30616 [0.821]

Dynamic regression for Δ *lcr* and test of significance for dropping Δ *lgdp* variables

	Coefficient	t-value
inpt	0.04	1.33 [0.19]
Δ *lcr(-1)*	0.11	0.55 [0.59]
Δ *lcr(-2)*	0.01	0.05 [0.96]
Δ *lcr(-3)*	0.04	0.02 [0.83]
ecm2(-1)	-0.20	-1.33 [0.19]

F (3,22) = 0.77209 [0.522]

8. Conclusion

This study has generally revealed that banks' overall assessment of financial sector liberalization is very positive. Banks acknowledge efficiency gains from increased competition and the liberty to set charges and interest rates. This has enabled them to offer differentiated rates/charges to their clients depending on the size and track record of the business. In addition, banks have become more responsible in choice of customers, loan assessment and monitoring as well as improving liquidity management. Defaults are on the decline and in due course banks will further reduce intermediation margins. The banks are likely to record increased lending activity and a decline in lending rates. However, there is need to strengthen the legal infrastructure, in order to lower costs and risks associated with enforcement. This in turn will lower the lenders' (banks') risk perception and premium for external finance and consequently increase the amount of credit to the private sector.

Forging links between the banking system and the semi-formal sector credit associations is seen to be one way of linking the banking sector to the rural population. This will not only benefit the banking system through reduced transaction costs and increased profits, but will also increase rural productivity and hence incomes. This is necessary for stimulating growth in the real sector given that the period under review seems to support the hypothesis of supply-leading finance.

Notes

1. Henstridge and Tumusiime-Mutebile (1995).

2. In the case of Uganda, such assets would encompass the holding of land and cows. It is argued that in some societies, e.g., Buganda and Karamoja, people hold large tracts of land and large numbers of cattle, respectively, which attract minimal returns.

3. The argument of treating the loan market as different from other markets is neatly summarized by Stiglitz (1989: 59).

4. Note that real broad money demand has been increasing over the past three years, while monetary expansion has been kept at over 20% and inflation has remained at single-digit levels.

5. We use the modified form of adaptive expectations, i.e., the criterion individuals use for forecasting future values of a variable in the face of uncertainty is that which minimizes their expected losses from forecast errors. Consequently, the adjustment coefficient β is estimated from the adaptive expectations model, i.e.:

$$\Delta CPI^{e} = \Delta CPI^{e}{}_{t-1} + \beta(\Delta CPI_{t-1} - \Delta CPI^{e}{}_{t-1})$$

which, when converted into a distributed lag model, transforms into

$$\Delta CPI^{e} = \beta\Delta CPI_{t-1} + \beta(1-\beta)\Delta CPI_{t-2} + \beta(1-\beta)^{2}\Delta CPI_{t-3}$$

$$= \beta\sum_{i=1}^{\infty}(1-\beta)^{i-1}\Delta CPI_{t-i}$$

The adjustment coefficient β is then estimated by computing a value that minimizes the average losses from forecasting errors in the quadratic loss function:

$$= L = \sum(\Delta CPI - \Delta CPI^{e}) = \sum_{i=1}^{n}\left[\Delta CPI_{t} - \beta\sum_{t=1}^{\infty}(1-\beta)^{i-1}\Delta CPI_{t-1}\right]^{2}$$

6. Total capital = Core + supplemetary capital

   Core capital = Paid-up share capital + previous years' capital + share premium + net after-tax profit-investment in financial companies that is not consolidated.

   Supplementary capital = Revaluation reserves on fixed assets + unencumbered general provisions for bad debts.

7. The ratios are computed as $CCR = \frac{CC}{CRB}$ and $SCR = \frac{SC}{CRB}$ where

   CCR = Core capital requirement; SCR = Supplementary capital requirements; CRB = Capital requirement basis calculated as a sum of the risk-weighted items.

8. A number of foreign owned banks earn profits through foreign exchange transactions. This has been made possible by the transfer of project accounts to commercial banks and the growth of bureau transactions.

9. Many foreign owned commercial banks have set minimum limits on the amount of deposits that earn interest, i.e., time and savings deposits. Unfortunately, the majority of average Ugandans cannot afford to keep such large sums of money in such accounts for the duration required. Such a move by commercial banks could be a result of the falling demand for loans by the "creditworthy" group.

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