Interest Rate Liberalization And The Saving-Investment Process:
An Econometric Validation Of The Mckinnon-Shaw Hypotheses In Tanzania
By A. A. L. Kilindo*

Abstract
Tanzania adopted a program of financial liberalization after a prolonged period of financial repression. After liberalization the rate of interest on bank deposits have remained low while lending rates have increased resulting into a wide spread. This short paper argues by means of an econometric model that such financial policy that keeps deposit rates low and lending rates high is likely to drain surplus out of the informal sector to finance corporate expansion at the expense of micro-, small-, and medium-scale enterprises. Policies that stimulate bank resources (for example by raising deposit rates) should be accompanied by those that allow adequate level of self-financing and re-investment of small-scale profits in the spirit of McKinnon and Shaw. This will bring desirable effects in terms of permitting a more rational distribution of resources among sectors.

Introduction
"The crucial effects of financial development lie at the micro-economic level, where individual units save more than they can invest, another that wishes to invest decides to deposit its savings with a bank, and another unit that wishes to invest more than it can save obtains credit from that bank"(FitzGerald and Vos, 1988).

Following the McKinnon-Shaw school, advocates of liberalizing interest rates have stressed that such policies ought to be pursued since formal financial intermediaries are more efficient in intermediation than informal markets characterized by numerous inefficiencies. Due to this belief, most studies have neglected to incorporate informal loan markets in their models and examined the impact of liberalizing interest rates on the economy by considering only the effects on formal finance rather than on total credit activity.

Even if the direction of change in economic activity after liberalizing interest rates were to be in line with the arguments of the McKinnon-Shaw school, policy-makers could not afford to ignore the effects of the policy changes on the drain of resources from the informal sector. To be able to assess the extent to which real as well as monetary variables deviate from their previous levels requires evaluation of both
formal and informal credit activities. It is argued that policies have not been effective because it was assumed that the relative efficiency in intermediation of the banking system would neutralize the neo-structural critique. The effects of low deposit rates and economic activity have to be addressed in order to understand the length and size of the impact of financial liberalization. The short-term contractionary effects experienced in the economy support the neo-structural critique.

Tanzania has moved from a centrally planned economic system to a more market oriented one. Liberalizing the financial sector has been in the forefront of economic policies concentrating largely on liberalizing interest rates, introducing a wider spectrum of financial assets and creating markets for various existing securities.

Before embarking on liberalization, the country was characterized by informal loan markets. The merit of liberalizing interest rates in the presence of informal finance has been questioned, whether such a policy is unambiguously expansionary or not. In what has become known as the neo-structuralist critique it is argued that financial liberalization could be contractionary and, in some cases even stagflationary (Shahin 1996). What is observed in Tanzania is that liberalization has been contractionary.

After this brief introduction, in section two we provide a brief survey of the money and finance policy evolution in Tanzania. Section three is devoted to discussion on the conceptual aspects of interest rate liberalization following assumptions and arguments behind the results of financial repression, financial liberalization and the neo-structural critique and the main arguments in the debate on the merits of liberalizing interest rates. The fourth section presents empirical evidence, both graphical and econometric and section five draws some conclusions.

**Monetary And Financial Policy Evolution In Tanzania**

**Policy**

In 1990 a Presidential Banking Commission (PBC) proposed the initiation of a reform program for the financial sector in Tanzania, with the major component being the installation of a new policy environment, which would facilitate both the implementation of the reforms and the operation of a restructured banking and financial system. The new policy environment involved four elements, namely, enactment of new banking and financial institutions legislation; major reform of the public sector, involving reform of the budgeting process and the tax system, and restructuring of parastatal enterprises; elimination of government propensity for intervention in the financial system, particularly as regards the setting of financial prices and the allocation
of credit and foreign exchange and eliminating restrictions on competition and free entry into the financial sector.

The new Banking and Financial Institutions Legislation was aimed at correcting the deficiencies of the then existing laws and legislation governing banks and institutions. Consequently new laws governing the operations of banks and financial institutions were enacted: The Banking and Financial Institutions Act (BFI) 1991, the Loans and Advances Realization Trust (LART) Act 1991, the Capital Markets and Securities (CMS) Act 1994, the Bank of Tanzania Act 1995, various amendments to financial institutions Acts, as well as new specific Acts in respect of particular financial institutions, e.g. the Tanzania Postal Bank Act 1991. The foreign exchange market, relaxation of foreign exchange control and establishment of bureaux de change was dealt with by the Foreign Exchange Act of 1992.

Public sector reform, which is closely linked to the health of the financial sector has involved reform of the tax system; reform of the links between parastatal enterprise expenditure and losses on the government budget and the financial system and restructuring of parastatal enterprises.

Reform of the tax system has enhanced tax revenue collection, consequently reducing the government’s budget deficit. Such reduction in turn reduces government’s recourse to the financial system and the resulting crowding-out of credit to the productive sector. In addition to tax reform, civil service reform has been implemented to raise productivity and reduce growth of government expenditure.

The links between parastatal losses and expenditure and the financial system have been reformed in a way that financial institutions have full autonomy in decision-making and parastatal budgets are no longer an extension of the government budget. Earlier, parastatal enterprises operated on a soft budget constraint and much dependent on the ease with which the financial system provided credit to finance parastatal losses.

Parastatal restructuring was aimed at transforming such enterprises into efficient and profitable units. Positive effects are generated by efficient and profitable enterprises in the areas of resource mobilization, improving the quality of the loan portfolio and the profitability of financial institutions.

Policies towards the end of 1960s and during the 1970s were dominated by government intervention in areas of policy, the economy and in the financial sector. The declaration provided the arguments for government ownership of the major means of production, distribution and exchange. The government was considered the principal agent for
change and development. Government intervention was considered desirable because the government knew what was best for the country, its people and the economy and in addition it had the ability to ensure the flow of resources to the government, and thus undertake development activities. In the financial sector, intervention measures would enable the government to allocate mobilized financial resources to itself and its enterprises.

The effect of government intervention in the financial sector has been shown to have been negative, (Nyagetera, 1986, 1991, 1993; Kimei, 1994). Fry (1988) verifies that such negative experience has been recorded in other countries, in particular, interventions linked with interest rate and foreign exchange controls and allocation of financial resources (credit and foreign exchange).

The Presidential Banking Commission identified the restriction on competition and free entry as serious impediments to the creation of an appropriate policy environment for the financial sector. These restrictions were repealed by the Banking and Financial Institutions Act of 1991. The Act reversed the Arusha Declaration related and accompanying measures in the financial sector, involving nationalization of commercial banks and creation of segment monopolies and administrative setting of financial prices by the government through the Bank of Tanzania.

The Bank of Tanzania, in the implementation of the Banking and Financial Institutions Act, published guidelines on the effective management of financial institutions including rules on capital adequacy and the management of risk assets as well as the need to restructure financial institutions to enable them to conform to the requirements of the BFI Act.

The Loans and Advances Realization Trust Act 1991 provided the acquisition of the non-performing assets of banks and other financial institutions falling under the public sector (the National Bank of Commerce (NBC); the Credit and Rural Development Bank (CRDB); the Tanzania Housing Bank (THB) and the Tanzania Investment Bank (TIB). A number of restructuring measures have been undertaken by respective institutions in order to conform to the BFI Act.

Another component of the BFI Act 1991 was the provision for the establishment of new financial institutions as a means of facilitating competition among financial intermediaries and enhancement of the provisions of efficient financial services. Figure 1 presents the superstructure as it stands now.
Figure 1. The Financial Superstructure in Tanzania

Bank of Tanzania

Commercial Banks:
- NBC; PBZ; CRDB;
- NMB; ACB; BB; BM;
- CTB; DB; EB; GB;
- HAB; KCB;
- STANBIC; SCB

Near Banks and other Savings mobilizers:
- DJIT; PBT;
- S&F; MCB;
- KCOB; DTB; AB;
- FAB; NBD; NP;
- F; PPF; NSSF;
- LAPF

Insurance Companies:
- NIC; ZIC; JI;
- AI; HAIL;
- RI; LTI; RI;
- PTI; II Co.

Development Finance Companies:
- TIB; TDFL;
- KCo; SFS;
- UL;
- FFC; CLF; CF

Key
- NBC = National Bank of Commerce;
- PBZ = People’s Bank of Zanzibar;
- CRDB = The Cooperative and Rural Development Bank
- NMB = The National Micro-finance Bank
- ACB = Akiba Commercial Bank;
- BB = Barclays Bank;
- BM = Bank Malaysia;
- DB = Delphis Bank
- EB = Euroafrica Bank;
- GB = Greenland Bank Ltd.
- HAB = Habib Africa Bank Ltd.
- KCB = Kenya Commercial Bank;
- SCB = Standard Chartered Bank;
- DJIT = Diamond Jubilee Investment Trust;
- PBT = The Postal Bank of Tanzania;
- KCo = Karadha Company
- NPF = National Provident Fund;
- SFS = Stanbic Financial Services
- ULC = ULC Tanzania Ltd.
- S&F = Savings and Finance;
- MCB = Mufindi Community Bank
- KCOB = Kilimanjaro Cooperative Bank;
- DTB = Diamond Trust Bank
- ABB = Azania Bancorp Bank;
- FAB = First Adili Bank
- NBD = National Bureau de Change
- NIC = National Insurance Corporation;
- ZIC = Zanzibar Insurance Corporation;
- JI = Jubilee Insurance
- AI = Alliance Insurance
- HAIL = Heritage A. I. I. Insurance
- RI = Reliance Insurance
- LTI = Lion Tanzania Insurance
- RI = Royal Insurance
- PTI = Phoenix of Tanzania Insurance
- IICo = Imperial Insurance Co. Ltd.
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PPF = Parastatal Pensions Fund;
NSSF = National Social Securities Fund;
LAPF = Local Authorities Pension Fund;
FFC = Furaha Finance Company
CLF = Crown Leasing and Finance
CF = Capital Finance

Trends in financial variables.
Table 1 shows a large monetary expansion between 1990 and 1995 (close to four fold), but later the rate declined to less than twice the rate. The post 1995 period saw the authorities deliberately tightening money supply in a bid to contain inflation.

A different trend is observed for the case of domestic credit. Domestic credit more than doubled between 1990 and 1995 but between 1995 and 2000 it increased by 125 percent. This is a period when bank restructuring was taking place, a process that involved less allowance for banks to lend. New entrants into the banking system were cautious on their lending activities and hence providing less credit flows into the economy.

Savings deposits more than quadrupled between 1990 and 1995. But after 1995 the growth was less than that experienced in the earlier period. The fact that the deposit rate increased by more than three times during the period 1990 to 1995 before declining to less than a half of its level in the previous period explains the trend in savings deposits.

The lending rate reached a high 42.8 percent in 1995, rising by 138 percent from its level of 31.1 percent in 1990. However, in 2000 it was 21.5 percent, half of its level in 1995. The rates are still high for borrowers and make the economy starved of credit. This trend is similar to that of the treasury-bill rates. They reached a high 47.9 percent in 1995 and were pulling lending rates upwards. By 2000 the treasury-bill rate was a quarter of the level in 1995. This was a result of deliberate policy put in place by the authorities in order to discourage commercial banks from investing in government paper, a tendency that deprived the rest of the economy of credit. It is likely that commercial banks will in future compete for lending to the private sector and in that process increase credit availability and higher economic growth.

The interest rate spread, the difference between the lending and deposit rate, the interest rate spread was highest in 1995. It has declined in recent years but it still indicates lack of an efficient banking system and lack of competition.
Table 1: Trends in selected financial variables (TSh. billion and percent)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>M2 a)</td>
<td>4.3</td>
<td>13.4</td>
<td>25.5</td>
<td>113.0</td>
<td>428.3</td>
<td>695.0</td>
</tr>
<tr>
<td>Domestic credit</td>
<td>5.6</td>
<td>18.3</td>
<td>51.4</td>
<td>287.4</td>
<td>693.9</td>
<td>873.3</td>
</tr>
<tr>
<td>Savings Deposits</td>
<td>1.3</td>
<td>4.2</td>
<td>13.9</td>
<td>52.3</td>
<td>329.5</td>
<td>702.7</td>
</tr>
<tr>
<td>Deposit rate (%) b)</td>
<td>4</td>
<td>4</td>
<td>4.5</td>
<td>17.5</td>
<td>7.8</td>
<td>7.4</td>
</tr>
<tr>
<td>Lending rate (%) c)</td>
<td>6.3</td>
<td>11.5</td>
<td>12.3</td>
<td>31.1</td>
<td>42.8</td>
<td>21.5</td>
</tr>
<tr>
<td>Treasury bill rate (%) d)</td>
<td>4.8</td>
<td>4.8</td>
<td>5.0</td>
<td>15.5</td>
<td>47.9</td>
<td>10.7</td>
</tr>
</tbody>
</table>

Notes:

a) Broad money supply, consisting of currency in circulation, plus demand, savings and time deposits.
b) Refers to the rate offered for time and savings deposits.
c) This is the bank rate that meets the short- and medium-term financing needs of the private sector.
d) Refers to a series representing yields to maturity of government bonds.


Interest Rate Liberalization: The Conceptual Framework

In order to expand economic activity, McKinnon (1973) and Shaw (1973) advocated liberalizing interest rates. This was regarded as the answer to financial repression policies that kept interest rates well below market clearing levels. By placing ceilings on interest rates, firms would be provided with cheap capital, since low loan rates motivate various borrowers by providing an environment conducive for capital investment. In addition, low deposit rates were advocated because high ones would attract funds away from productive investment in physical assets. Inflation would also be kept under control when low interest rates prevailed through a cheap cost of capital effect.

Other arguments in support of financial repression included: (McKinnon, 1973; Shaw, 1973).

- Preventing monopoly power from determining the level of interest rates
- Proper monetary control and financial policy
- Direct government control over savings and investment
The success of the savings-investment process. The validity of these secondary arguments are criticized by liberalization economists, with their main concern being to liberalize interest rates to promote development and growth.3

The arguments made by McKinnon, Shaw and other economists who support their tradition regarding the link between interest rate liberalization and output growth are summarized in Shahin (1996):

- Developing countries suffer from a shortage of savings rather than investment opportunities. Given proper incentives and enough funds, market forces are ready and capable of working towards growth.
- A low real return on bank deposits, especially in high inflation countries, due to official policies of fixing interest rates below market clearing levels gives rise to shortage of savings.
- By freeing interest rates, savings are encouraged by motivating more funds to the banking system. These funds are attracted from alternative assets through a substitution effect and at the expense of consumption.
- When the deposit rate is liberalized, the loan rate will increase and this motivates banks to conduct more direct financial intermediation with newly acquired funds. This increase in savings and financial intermediation increases capital accumulation and growth.
- If loan rates are high, banks can make loans to risky investments in high yielding projects causing higher levels of capital formation. Putting ceilings on these rates may make banks less likely to undertake risky loans for a return measured by a low loan rate. Capital formation could be negatively impacted when loans are made to low risk investment with a low return.

Arguments of the McKinnon–Shaw school rest on the assumption that the banking system, as opposed to informal finance, provides the most efficient channel of financial intermediation. Loans channeled through informal finance may largely support suboptimal and inefficient investments since informal credit markets suffer from many inefficiencies and monopolistic features.

Critics of the McKinnon-Shaw approach, the neo-structuralists, examined the impact of financial liberalization policies and stabilization measures on economic activity when informal loan markets are incorporated in economic models. In these models, the informal loan rate is the only market determined one and the organized loan markets are fully efficient in channeling funds in the financial intermediation process.
Under this approach, financial liberalization has been analyzed along five areas (Van Wijnbergen (1983a, 1983b; Taylor 1983; Buffie 1984; Kohsaka 1984; Lim 1987; Liang 1988; Shahin 1990).

Firstly, it is assumed that an increase in the deposit rate would motivate the unorganized market funds into the banking system. The act of siphoning assets held in informal loan markets to the banking system may convey contractionary moves to economic activity. This occurs because only a portion of the funds deposited in the banking system is channeled into investments due to the rule of holding required reserves.

Secondly, the decrease in informal market funds raises the informal market loan rate or the cost of financing working capital. This may result into inflation. When inflation and the possible contraction are combined stagflation may ensue (Shahin 1990).

Thirdly, if funds were to move into savings out of unproductive assets such as currency or gold, if the substitution effect between informal loans and bank deposits is low, and if the required reserve ratio is low, increasing the deposit rate could be expansionary. Kohsaka (1984) put across another effect that, in addition to the conditions in the third point mentioned above, a high responsiveness of flow of savings with respect to the real interest rate on bank deposits is also necessary for successful liberalization policies.

Finally, through the long-term impact of savings may become very powerful in increasing real wealth and even overcoming the decrease in aggregate loan supply, in the short run they may not expand economic activity.

Empirical Evidence From Tanzania

Graphical Analysis

Studies on the interest rate have been devoted to establishing its impact on savings and investment. McKinnon (1973) found that increase in the real return on one-year time deposits from slightly negative rates brought about a rise in personal savings. Due to the weak response of interest rates, domestic savings have been linked to the real deposit rate rather than linking interest rates to savings. Cross-country studies by Lanyi and Sarucoglu (1985) evidence the strong responsiveness of savings to the real deposit rate. Papers by, for example, Rossi (1988) explored the effect of the real interest rate on savings. It is seen that the effect is uncertain a priori. On the one hand one can expect higher interest rates to encourage savings by enabling the saver to buy more future consumption in terms of current consumption forgone (the "substitution effect", or on
the other hand, higher interest rates reduce the amount of saving needed to produce a
desired future income level (the "income effect"). Fry (1988) indicates that results from
literature seem to be that a positive effect on saving (or negative effect on household
consumption) of the real interest rate could be discerned, but that was not very strong.
Rossi (1988) arrived at the conclusion that the effective mobilization of domestic
savings through changes in savings incentives is likely to require changes in real
interest rates which, given existing constraints, may prove unfeasible especially in low
-income developing countries. Movements in interest rates in Tanzania were sticky
levels period before 1986, improved between 1986 and 1994 and declined there after
(Figure 2).

Figure 2: Movements in interest rates

Figure 2 also depicts an increasing interest rate spread, i.e. the difference between the
lending and deposit rate. When compared to the deposit rate, the lending rate spread
has risen from 7 percent in 1993 to over 25 percent in 1996 and later narrowed slightly
to 15 percent by 2000. When the lending rate is inordinately high an undue burden is
placed on production and borrowing enterprises.

The trend in domestic credit is displayed in Figure 3. The post liberalization period
marked a poor performance in terms of credit flows. This is a period when commercial
banks manifested increasing risk aversion in lending, giving preference to holding risk
free government paper. This partly reflects high risks in lending, difficulties on the part
of commercial banks to assess the credit worth of private borrowers and the problems associated with the handling of commercial disputes.

Figure 3: Trends in credit

From figure 4 it is seen that the proportion of M2 that is kept in the form of savings deposits has had an erratic trend over the period under study. It picked up during the period 1974 to 1978 but later declined before rising again to reach a high proportion in 1985. A sharp decline is observed between 1985 and 1986 but thereafter an upward trend was achieved by 1996. After 1996, less savings were recorded. This is the time when interest rates on savings declined. The proportion of time deposits to M2 recorded a similar trend to that of savings deposits for the period before 1986, i.e. an upward trend. Thereafter the two ratios were departing from each other. This indicates that depositors were moving away from time deposits in favour of savings deposits.

The pre-liberalization period witnessed a stagnant rate of lending and after 1989 there was an upshot of lending. Following a slump between 1992 and 1995 there was a decline in credit. This can be explained by restructuring of the major commercial
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banking system whereby lending by NBC and NMB was frozen under a Memorandum of Understanding with the Government.

![Figure 4: Trend in savings deposit ratios](image)

As a ratio of income, savings deposits have remained below 10 percent for most of the period under study. This is indicative of the public's preference to other types of savings like physical assets away from financial assets.

Econometric Analysis

4.2.1 Models

McKinnon (1973) developed a formal analysis of how the real deposit rate of interest affects savings, investment and growth, based implicitly on an outside money model. Two assumptions are crucial in the analysis. The first is that all economic units are confined to self-finance, and the second is that indivisibilities in investment are of considerable importance—investment expenditures are lumpier than consumption expenditures (Fry, 1995). This line of argument follows Keynes's finance motive (Keynes, 1937), where potential investors must accumulate money balances prior to their investment. The lower the opportunity cost of accumulating real money balances or the higher the real deposit rate of interest, the greater is the incentive to invest. In
such a situation, the relative lumpiness of investment expenditures implies that aggregate demand for money will be greater the larger the proportion of investment in total expenditures. This complementarity hypothesis applied by McKinnon to LDCs can be reflected in a demand for money function.

\[
\frac{M}{P} = f(Y, \frac{I}{Y}, d-n)
\]

Where \( M \) is the money stock (broadly defined to include saving/time deposits as well as demand/sight deposits and currency in circulation-M2), \( P \) is the price level, \( Y \) is real income, \( \frac{I}{Y} \) is the ratio of gross investment to GNP and \( d-n \) is the real deposit rate of interest (\( d \) is the nominal deposit rate and \( \pi \) is expected inflation).

According to this analysis, complementarity works both ways: "the conditions of money supply have a first order impact on decisions to save and invest" (McKinnon, 1973; Oshikoya, 1992; Fry, 1995). The implication is that equation 1 can also be expressed as an investment function:

\[
\frac{I}{Y} = f(\phi, d-n)
\]

Where \( \phi \) is the average return on physical capital.

Complementarity appears in the partial derivatives (Fry 1995):

\[
\frac{\delta (M/P)}{\delta (I/Y)} > 0; \quad \frac{\delta (I/Y)}{\delta (d-n)} > 0.
\]

On the contrary, Shaw favours the debt-intermediation view pioneered in the 1950s (Gurley and Shaw, 1955, 1960). Gurley and Shaw (1955) stress the great difference in financial systems in developed and developing countries. Shaw observes that in sharp contrast to the developing countries, developed countries possess sophisticated and elaborate systems of financial institutions that facilitate intermediation between savers and investors. The role of financial intermediaries under this line of reasoning is to improve resource allocation.

Shaw's monetary model is constructed in a way that money is backed by productive investment loans to the private sector. The larger this money stock is in relation to the level of economic activity, the greater is the extent of financial intermediation between savers and investors through the banking system. This line of analysis maintains that expanded financial intermediation between savers and investors resulting from financial liberalization (higher real institutional interest rates) and financial development increases the incentives to save and invest, it also raises the average efficiency of investment. Financial intermediaries raise real returns to savers while at the same time lowering real costs to investors by accommodating liquidity preference, reducing risk through diversification, reaping economies of scale in lending, increasing operational efficiency and lowering information costs to both savers and investors through specialization and division of labour.
When interest rates are administratively fixed below their equilibrium levels, financial intermediation is repressed and becomes sub-optimal.

Employing interest rates as rationing devices (allowed to find their equilibrium levels) financial intermediaries can use their expertise to allocate efficiently the larger volume of investible funds that are then forthcoming. Free entry into and competition within the banking system are prerequisites for financial liberalization along the lines of Shaw. The demand for money function produced by the debt-intermediation view is characterized as equation (3).

\[ M/P = f(Y, v, d-\pi) \] ................................. (3)

Where \( v \) is a vector of opportunity costs in real terms of holding money, proxied by the difference between the nominal yield on government bonds (short term) and expected inflation (\( \pi \)).

All forms of wealth, including money, are expected to have a positive effect on the saving ratio. In this alternative model there is no room for complementarity because investors are not constrained to self-finance simply because non-institutional markets invariably appear where institutional credit is unavailable (Fry, 1995).

### 4.2.2 Estimation Results

Table 2 displays the results of 2SLS estimates of equation (1), McKinnon’s complementarity hypothesis and equation (3), Shaw’s debt-intermediation hypothesis employing Tanzanian quarterly data spanning from 1986 to 2000.

**Table 2: Econometric results (1986:2 – 2000:4)**

<table>
<thead>
<tr>
<th>DEPENDENT VARIABLE</th>
<th>INDEPENDENT VARIABLES</th>
<th>R²</th>
<th>DW</th>
<th>F</th>
</tr>
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<tbody>
<tr>
<td>M/P</td>
<td>CONSTANT, Y/P, I/Y, v, d-\pi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M/P t-ratio</td>
<td>-127.17, 0.12, 6.54, 0.19, 0.97</td>
<td>.76</td>
<td>312.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-3.55), (28.59), (3.90), (0.81),</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M/P t-ratio</td>
<td>7.3, 0.06, 7.32, 0.46, 0.86, 1.54</td>
<td>73.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(5.23), (2.82), (2.92), (0.7),</td>
<td></td>
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</table>

\[ M/P \] = real stock of money, defined as the ratio of M2 to the general Price Index P.
$Y/P = \text{real gross domestic product, defined as GDP divided by the General Price Index}$

$I/Y = \text{ratio of gross investment to GDP, defined as Gross Capital Formation to GDP.}$

$d-\pi = \text{real interest rate} - \text{defined as the difference between the deposit rate and expected inflation}^5$

$\nu = \text{opportunity cost of holding money proxied by } b-\pi$

where $b = \text{nominal yield on government bonds (short term)}$

$\pi = \text{expected inflation}.$

The results as presented in Table 2 above are supportive of the McKinnon-Shaw hypotheses. All variables except the real deposit rate are significant at conventional levels, and have the right signs. It is seen that the real deposit rate does not influence the public’s holding of real cash balances, but rather the opportunity cost (as measured by a vector of opportunity costs) does. Both real income and investment influence demand for money.

5. CONCLUSION

The study tracks down the interest rate liberalization in Tanzania and empirically tests for the McKinnon-Shaw hypothesis and its role in the savings –investment process. A number of conclusions emerge similar to those other studies.

- According to McKinnon’s complementarity hypothesis the role of deposits in encouraging self-financed investment is emphasized. A rise in the deposit rate stimulates demand for capital by making savings accumulation more rewarding and by increasing the amount of internally financed investment. The focus of Shaw’s debt-intermediation view on the other hand, is on the role of deposit accumulation in expanding the lending potential of financial intermediaries. Higher deposit rates encourage the inflow of deposits to banks, which in turn can increase lending, thereby stimulating externally financed investment. Despite the Shaw and McKinnon theses emphasizing different aspects of the process of accumulation of financial assets and liabilities, it is clear from the results of regression analysis that these should be viewed as complementary rather than competing theories. It is plausible to find that the two theories complement each other because in most cases, and in a developing country like Tanzania in particular, most projects are financed in part with own funds and in part with borrowings.

- The expectation in theory that with liberalization, interest rates will be positive in real terms and the increased efficiency in intermediation, will narrow the spread between the lending and deposit rates is not obtaining in Tanzania. Positive interest rates are still to be achieved, but as inflationary...
pressures are abating there is a high possibility towards that direction. The spread between lending and deposit rates widened with liberalization, while the short-term rates increased at a fast rate.

- Efficiency has not been achieved in intermediation of financial assets. This is reinforced by the oligopolistic structure of the market, where a few commercial banks (NBC and NBM) are dominant.

In conclusion then, although a lot of effort has been put in the financial sector liberalization process, there is need to tighten some loose ends if positive impacts are to be realized.

The implication is that a policy of stimulating bank resources (for example by raising deposit rates) may have desirable effects in terms of permitting a more rational management by the monetary authority of the flow of funds between sectors. This will encourage adequate level of self-financing of firms out of profits while at the same time make possible the re-investment of small-scale profits by making suitable capital available through reduction of the interest rate spread. By doing so the negative effects of draining out surplus out of the informal sector to finance corporate expansion will be minimized. This calls for proper financial supervision going in tandem with deregulation of the financial sector.

End Notes

1 The Presidential Banking Commission pointed out two major deficiencies: Firstly, the financial system did not adequately specify, and vest in the Bank of Tanzania powers to license and supervise the banks and financial institutions. Secondly, no criteria were laid down for ensuring the soundness of the financial structure and management of banks and financial institutions.

2 The fact that until 1990, about 80 per cent of the National Bank of Commerce’s loan portfolio involved loans to only 20 borrowers of which 19 were parastatal enterprises points to the importance of parastatal restructuring to the health of the financial system. Worse enough, 65 per cent of the loans to parastatal enterprises were considered non-performing.

3 Financial repression has been listed as one of the ways in which Sub-Saharan African governments impeded the development of their economies by restricting the growth of the private sector.

4 Interpolation of annual series to quarterly for Investment and GDP was carried out due to lack of quarterly series.

5 Expected rate of inflation is generated following adaptive expectations method for formulated by Cagan (1956).

6 Based on comparison of tabulated \( t \) with calculated \( t \) at 5 and 1 percent levels respectively.
References


Rossi, N. (1988) "Government Spending, the real Interest Rate and the Behaviour of Liquidity Constrained Consumers in Developing Countries," *IMF Staff Papers*.


