Financial Liberalization and Monetary Policy in Zimbabwe

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ABSTRACT

The severity of economic problems forced the Zimbabwe Government to embrace, albeit grudgingly, economic reforms in 1991. The inability of administrative controls and financial repression to restore macroeconomic stability became apparent. This thesis focuses on the financial sector component of the economic reforms between 1991 and 1998. Under financial repression, monetary policy relied on direct instruments. Financial reforms floundered midstream because of weak support from other policies. In particular, the deficiency and sluggishness of fiscal measures became the Achilles Heel of the wider reforms. Stop-go cycles and frequent policy reversals became the stock in trade for policy makers. Macroeconomic imbalances worsened and financial sector reforms became associated with high nominal interest rates, large budget deficits, rising inflation, mounting domestic debt, distress borrowing, widespread bankruptcies and the collapse of some financial institutions. By 1997, policy credibility had been severely undermined and reforms abandoned as the country lurched from one political and economic crisis to another.

The empirical work in this thesis focuses on: i) the tenets of the financial repression hypothesis; ii) the impact of financial liberalization on the stability of the demand for money, monetary policy and inflation; and iii) the relationship between the domestic and international financial markets. The empirical results confirm the low interest rate elasticity of savings found in other countries. Liberalization apparently had little impact on financial deepening. Moreover, the continued segmentation of financial markets, stickiness of lending interest rates and the size of spreads suggests little competition in the financial sector. The error correction model of the demand for money exhibits some stability and indicates that inflation and the dynamics thereof were dominant influences. Changes in money balances, inflation expectations, and deposit rates, fiscal deficits, import prices and demand pressures show up as the main causes of inflation. Despite financial liberalization, the domestic financial sector remained insulated from international capital markets, reflecting the dominance of domestic financial market conditions.

Notwithstanding high interest rates, monetary policy failed to break the inflationary spiral. Fiscal dominance constrained the Reserve Bank (RBZ)'s efforts to control inflation. The Government absorbed the large volume of treasury bills issued, used overdrafts extensively and left the RBZ without instruments for liquidity management. The resulting increase in domestic debt worsened fiscal deficits and fomented the reversion to controls. Central bank independence might have helped to avert this. The RBZ resorted to ad hoc administrative measures including interest rate controls and subsidized bank credit and thus reversed liberalization measures. Zimbabwe's experience illustrates the pitfalls of initiating financial reforms without the support of prudent macroeconomic policies, a strong regulatory framework and steadfast political commitment to economic reforms.

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CHAPTER 1. THE FINANCIAL SECTOR PROBLEMS AND THE ECONOMIC SETTING

1.1. Introduction

The increasing integration of world capital markets and the pre-eminence of liberal economic systems are consistent with the initiatives to reform financial systems in both developed and developing countries. Some country experiences have affirmed the benefits of this process while others have highlighted the potential dangers, especially in the absence of certain conditions.

In 1991, the Government of Zimbabwe embraced economy-wide reforms, which were to be implemented through a stabilization cum structural adjustment programme. The key elements of these reforms were fiscal consolidation, the attainment of macroeconomic stability, the liberalization of the trade and exchange regimes and financial liberalization. The objective was to eliminate the distortions that had been brought about by the interventionist policies of the government in capital, goods and labour markets. The reforms were adopted against the background of deteriorating economic conditions and a grudging realization by the government of Zimbabwe that administrative controls and extensive government intervention in the economy generated distortions and rent seeking behaviour and were also unsustainable. This was a major feat for a Government that espoused a socialist ideology and harboured suspicions on the functioning of markets.

This thesis focuses on financial liberalization and monetary management in Zimbabwe. In this case, financial liberalization has been associated with high nominal interest rates, rising inflation, problems of liquidity management, rising domestic debt, collapse of some financial institutions, increasing domestic and other macroeconomic imbalances. As in many developing countries, the financial system was repressed. Economic policy in general and monetary policy in particular has been subject to frequent policy reversals as the country has lurched from one political and economic crisis to another since 1991. The economic and political conditions have deteriorated further as has policy credibility.

1 Despite the financial assistance from multilateral institutions and other creditors, the head of state routinely attacks these agencies. The harshest of his invective is directed at the International Monetary Fund. To many observers, this reflects the lack of political commitment to reforms.
This chapter sets out the context in which Zimbabwe's financial system was liberalized. The issues highlighted include the problem of financial repression and its manifestation, the objectives of the financial liberalization programme adopted by the government of Zimbabwe and the economic problems which financial liberalization was expected to address. The objectives of the study are outlined and the methodology stated. With its independence in 1980, Zimbabwe emerged from its pariah status of the Unilateral Declaration of Independence (UDI) from 1965 to 1979. The new government not only adopted the administrative controls that were in place, but it extended their coverage as described below. By the late 1990s, the country had gone full cycle and almost relegated itself into yet another pariah status because of the breakdown in law and order, which seemed to have the approval of the executive branch of government.

There are divergent views on financial liberalization and the significance of finance to the real economy. The work of McKinnon (1973) and Shaw (1973) henceforth referred to as MS, has been most influential in guiding policies to deal with financial repression. In essence, the MS hypothesis argues that distortions of financial prices including interest rates and exchange rates reduce the real rate of growth and the real size of the financial system relative to non-financial variables. Furthermore, the fragmentation of money and capital markets, and the dispersion of rates of return on financial assets retard growth. The expectation that low interest rate policies encourage investment and growth has generally not been confirmed since investment decisions hinge on many other factors. Artificially low rates of interest tend to constrain the development of financial instruments and markets, and at the same time undermine the efficiency with which resources are allocated. As defined in the work of MS, financial repression entails a situation whereby government induces distortions on the capital market through interest rate controls and/or credit allocation and interferes with financial intermediation.

Contrary to the early vintage of the financial repression paradigm associated with MS and its emphasis on real interest rates, financial liberalization has a number of elements, the linchpin of which is the market orientation of financial assets such as to reflect their risks, maturity and costs. Included among the elements of financial liberalization are the freeing of interest rates, the adoption of indirect instruments of monetary control, fostering competition among financial institutions by allowing new entrants (both domestic and foreign), integrating domestic financial markets with international capital markets, reducing market fragmentation, strengthening prudential and
supervisory functions of the monetary authorities, strengthening the capital bases and portfolios of weak financial institutions, and widening and deepening the capital market.

Before liberalization, the financial sector in Zimbabwe was highly segmented, real interest rates were negative and the balance sheets of financial institutions were subject to portfolio restrictions that were geared to facilitate government access to cheap finance for its deficits. Credit rationing, directed lending, asset prescription and exchange controls were notable features of the financial sector. After liberalization, the government increasingly relied on bank financing and overdrafts to finance its deficits. Previously it relied on non-inflationary finance from nonbank financial institutions. The main ones among these were pension and insurance funds, which were statutorily subject to asset prescription. As shown below, the economic and political setting in which financial repression emerged and financial liberalization occurred provide some useful insights.

1.2. Political and Economic Background

a. Country Characteristics

Zimbabwe is a landlocked country with an area of 390,000 square kilometres mainly composed of high plateau and mountains in the east and a population of about 12 million people. The country has a diverse resource base comprising various minerals and a vibrant agricultural sector, which under normal circumstances, feeds into an equally vibrant manufacturing sector. Originally governed by Cecil Rhodes' British South African Company until 1923, the country became a self-governing colony and joined Zambia and Malawi to form the federation of Rhodesia and Nyasaland in 1953. Opposition from the African population and the independence of Zambia and Malawi hastened the end of the federation in 1963.

In 1965, the Rhodesian Front under the leadership of Ian Smith, declared unilateral independence from the British government. This earned the country a pariah status, which was enforced by the imposition of international economic sanctions. Perforce, the country adopted inward looking economic policies, which were buttressed by extensive a wide range of administrative economic controls and sanctions busting activities through South Africa. Increased militancy in the agitation for independence by African nationalists culminated in a guerrilla war, which ended with the Lancaster House Constitutional Conference for independence in 1979. Inequality in land distribution, access to
government services and skewed wealth and income distribution stood out among the factors generating increased militancy.

The country attained independence in 1980 under a constitution, which contained safeguards for the protection of minorities and thus guaranteed parliamentary seats to Rhodesian Front representatives for the first few years. Zimbabwe National Union (ZANU) and Zimbabwe Peoples' Union (ZAPU), the two main nationalist parties led by Robert Mugabe and Joshua Nkomo respectively, formed the Patriotic Front (PF) at the Lancaster house conference but parted company at the time of elections. Mugabe's party, ZANU (PF) won the elections, formed a government of national unity and adopted a conciliatory stance. After a fall out and dismissal from the government, the Zimbabwe People's Union (ZAPU-PF) was co-opted into a virtual one-party state system which enjoyed the monopoly of political power without any significant opposition until the surprise performance of a newly formed political party, the Movement for Democratic Change (MDC) in elections of June 2000. MDC won 48 percent of the contested 120 parliamentary seats. The success of the MDC seems to have been premised on the deteriorating economic conditions, graft and increasing unpopularity of the ruling party. In parliament, ZANU-PF's majority in parliament was substantially increased because of the 30 non-constituency members of parliament, which the country's constitution empowers the president of the ruling party to appoint.

The socialist orientation was more apparent in the Government's rhetoric than in coherent economic policies. To the surprise of many observers, the government did not undertake wholesale nationalization. The initial intervention in the economy beyond what was already in place during the UDI period was limited mainly to assets given up by South African capital in its flight to safety. Mugabe's Government extended and intensified many of the controls and interventions that had been put in place during the UDI period. There was nothing much to distinguish the post independence government from its UDI predecessor in terms of economic intervention. What initially set the new government apart from its predecessor were explicit policy actions to improve access to social services notably health and education to the hitherto disenfranchised populace. By the end of two decades, it appeared as if the government had abandoned all its earlier pronouncements and was serving the interests of the politically powerful and connected. It had also internalised an ad hoc approach to economic management.
b. Economic background

The Zimbabwean economy has a long tradition of extensive administrative controls in goods, financial and exchange markets. The initial shock and effects of economic sanctions during the UDI period dissipated as the government of the day effected structural changes to the economy, utilized the excess capacity created during the buoyant economic growth prior to 1965 and devised ingenious ways of circumventing sanctions. During period 1964-73, the economy experienced an annual average growth rate of 7 percent. The structural changes initiated in the economy resulted in a shift in the internal terms of trade in favour of the manufacturing sector and also shifted the focus of the agricultural sector towards maize, sugar, cotton, tea, coffee and meat and away from tobacco which was most affected by sanctions. Structural shifts in the productive structure of the economy were backed by access to credit and export subsidies.

In 1965, the respective shares of composition of agriculture, manufacturing, and mining in GDP were 19 percent, 18 percent and 7 percent. UNCTAD (1980) noted the dualistic nature of the colonial economy and described it as sophisticated and modern but comprising two economic subsystems, two societies, two consumption patterns and life styles. By 1980, the manufacturing sector accounted for 25 percent of GDP, agriculture 14 percent and mining 9 percent. The country was not dependent on any single commodity for export earnings. The agricultural (tobacco), mining (gold) and manufacturing (ferro-alloys) sectors each contributed a third to total exports.

Economic sanctions provided an incentive for import substitution to carry out manufacturing, mining and to some extent agricultural expansion. Restrictions on the remittance of factor earnings led to the accumulation of a large pool of blocked funds, which added to the excess liquidity in the banking system. This pool of funds, which could not be repatriated, could be viewed as forced foreign savings. The main elements of the import substituting industrialization strategy were:

- elaborate foreign exchange allocation procedures to keep imports low;
- fiscal, credit and wage policies to support the foreign exchange allocation system;
- sophisticated parallel (sanctions busting) marketing arrangements to preserve global market access through intermediaries;\(^2\)

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\(^2\) Green and Kadhani (1985) reported that these marketing arrangements often cost as much as 15 percent on imports and 20 percent on exports.
• restrictions on current account and capital transfers and the building up of blocked account balances;
• various subsidies for manufactured exports and;
• increased power for the Reserve Bank (RBZ) and the Treasury to control the use of foreign exchange and participate directly in productive sectors.

This strategy was supported by regular balance of payments projections to identify potential current account deficit levels.

Economic activity declined significantly during the period 1975-79, registering an average annual decline of 1 percent (Table 1.1). Among the explanatory factors for the declining economic growth were the import and spending constraints imposed by the government in order to maintain a strong external current account balance, the world recession and the disruptions from the war for independence. Plan documents of the period placed great importance to the attainment of viable balance of payments positions and this was to be achieved directly through import controls and exchange controls. Increased government outlays to finance the war effort led to large budget deficits, which increased from about 2 percent of GDP in 1976 to about 10 percent by 1979. Although the underlying budget structure has changed, high fiscal deficits continue to be the bane of economic policy.

The post independence government inherited an economy with a well-developed infrastructure, a diversified production and export base and rising expectations from the hitherto marginalized African population. The financial sector was fairly sophisticated, providing a wide range of services albeit under the sheltered environment of a closed economy and the absence of competition. Apart from the significant improvements in the social sectors and education, the government was unable to address effectively, many of the country's historical inequities as it became mired by issues of governance and rent seeking behaviour among its ranks and became less tolerant to opposition.

Mugabe's government focused economic policy on redressing past inequities through government expenditure and an extensive use of administrative controls. It

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3 According to the 1967 Development Plan authored by Professor Sadie, the tightening or relaxation of exchange and import controls was to depend on the availability of export earnings and imports of consumer goods were the component to be adjusted.
characterized its economic strategy as one of growth with equity. Consequently, government consumption increased sharply, as did expenditure on health and education sectors and these quickly strained public finances. Borrowing from the private sector at low interest rates largely financed the resultant budget deficits. The post independence growth pattern of the economy has been quite erratic, driven mainly by the outturn of the agricultural sector, which in turn was subject to severe droughts in 1982-84, 1992 and 1995.

Table 1.1 shows some averages for some of the economic indicators for various sub-periods. Average economic growth recovered strongly especially during the period 1980-90, but slowed down considerably during the first half of the 1990s. This reflected the impact of droughts and negative changes in the policy environment. Extensive price controls account for the low average annual rate of inflation before 1991. From an annual average of less than 13 percent, inflation increased sharply after the introduction of reforms. Budgetary problems persisted as reflected by the deficits the financing of which shifted from reliance on the nonbank financial institutions to bank borrowing and overdrafts. As a result, monetary growth accelerated as reflected by the growth in the monetary base from an annual average of 12 percent before 1980 to at least 20 percent for the rest of the period shown in table 1.1. The current external account deteriorated and the nominal exchange rate depreciated on account of high levels of domestic absorption. Average interest rates were generally negative. Given the extensive use of exchange controls and price controls, monetary policy had a minimal role in addressing external and internal imbalances.

Economic policy has been characterized by stop-go cycles as the government has often moved back and forth from controls to liberalization. The initial improvements in social welfare indicators bear testimony to the government's strategy of redressing past social inequities and improving living standards of the poor through budgetary means while maintaining external balances through the exchange control regime. However, progress attained in the areas of education, health and smallholder agriculture was not matched by improvements in economic growth and per capita income.

A number of structural problems emerged as the government tried to redress past distortions and among them were:

- persistently high budget deficits despite high tax effort and rising public debt;
• large financial losses by public enterprises resulting in increased direct subsidies and guarantees for their commercial borrowing;
• increases in the Government’s wage bill as the civil service was expanded rapidly;
• a tight foreign exchange control regime and rationing procedures as foreign exchange shortages became a binding constraint on investment and capacity utilization;
• administrative controls on domestic prices and the labour market in the form of controls on wages as a way of attaining Government distributional objectives and placing restrictions on hiring and firing practices;
• a cheap food policy whereby agricultural marketing boards set farm gate prices and held them above the purchase and export prices with a view to saving/earning foreign exchange and providing food security;
• bureaucratic investment approval procedures, import licensing and restrictions on remittances of profits and dividend;
• a passive monetary policy relying on administrative directives and controls on interest rates and credit allocation; and
• rising unemployment as the supply of labour from the expanded education system by far exceeded new job opportunities.

Fiscal deficits resulted in financial intermediation between savers and investors being undertaken by the government through forced savings mechanisms. The deficits were financed mainly through borrowing from a captive nonbank financial sector whose portfolio was prescribed through statutes. These institutions were required to take up government paper and this contributed to the situation of financial repression, which in turn had a negative impact on financial intermediation.

In 1980-95 Zimbabwe undertook two major economic stabilization and adjustment programmes supported by the IMF, IBRD and other creditors. The first programme, which was introduced in 1982, did not run its full course because of major disagreement over fiscal policies. During this program, no significant efforts were made to liberalize the trade and exchange regime, labour and goods markets, and the financial sector, or to eliminate other administrative controls generating distortions in the economy. However, interest rates, which had remained more or less fixed prior to independence, were varied a little but did not become an active part of liquidity management. With the post-sanctions boom and substantial external finance for investment and reconstruction, the government relaxed
some controls and cut subsidies only to re-impose them when the IMF programme was abandoned in 1984. Tight exchange controls generated trade surpluses but at the expense of imported consumer goods and much needed imports of industrial inputs. The country maintained a good track record in servicing its foreign debt but this was ephemeral.4

Table 1.1. Zimbabwe: Selected Financial and Economic Indicators

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<td>GDP growth %</td>
<td>5.5</td>
<td>-9.0</td>
<td>1.3</td>
<td>6.8</td>
<td>-0.7</td>
<td>7.3</td>
<td>3.2</td>
<td>1.6</td>
<td>-1.0</td>
<td>5.0</td>
<td>1.2</td>
<td>2.9</td>
</tr>
<tr>
<td>Inflation %</td>
<td>23.3</td>
<td>42.1</td>
<td>27.6</td>
<td>22.2</td>
<td>22.6</td>
<td>21.4</td>
<td>18.7</td>
<td>46.6</td>
<td>11.0</td>
<td>13.2</td>
<td>28.8</td>
<td>27.3</td>
</tr>
<tr>
<td>GNP per capita, Atlas method (US$)</td>
<td>910</td>
<td>740</td>
<td>670</td>
<td>650</td>
<td>630</td>
<td>700</td>
<td>710</td>
<td>620</td>
<td>722</td>
<td>909</td>
<td>742</td>
<td>665</td>
</tr>
<tr>
<td>Budget deficit /GDP</td>
<td>-5.4</td>
<td>-5.0</td>
<td>-6.2</td>
<td>-3.8</td>
<td>-9.4</td>
<td>-7.7</td>
<td>-6.5</td>
<td>-4.9</td>
<td>-4.8</td>
<td>-7.5</td>
<td>-5.1</td>
<td>-7.1</td>
</tr>
<tr>
<td>External current account/GDP</td>
<td>-8.3</td>
<td>-15.2</td>
<td>-5.6</td>
<td>-4.6</td>
<td>-5.2</td>
<td>-2.1</td>
<td>-9.9</td>
<td>-6.1</td>
<td>-0.6</td>
<td>-3.8</td>
<td>-8.4</td>
<td>-5.8</td>
</tr>
<tr>
<td>Gross international reserves in months of imports</td>
<td>1.7</td>
<td>1.8</td>
<td>3.1</td>
<td>2.5</td>
<td>3.3</td>
<td>2.9</td>
<td>0.8</td>
<td>1.1</td>
<td>3.1</td>
<td>2.2</td>
<td>2.3</td>
<td>2.0</td>
</tr>
<tr>
<td>Change in monetary base% 1/</td>
<td>25.9</td>
<td>7.7</td>
<td>47.8</td>
<td>23.5</td>
<td>8.8</td>
<td>11.3</td>
<td>37.8</td>
<td>29.9</td>
<td>11.8</td>
<td>20.0</td>
<td>26.2</td>
<td>22.0</td>
</tr>
<tr>
<td>M2 Velocity</td>
<td>5.8</td>
<td>6.0</td>
<td>4.4</td>
<td>4.2</td>
<td>3.7</td>
<td>3.8</td>
<td>3.2</td>
<td>3.9</td>
<td>3.8</td>
<td>3.7</td>
<td>5.1</td>
<td>3.7</td>
</tr>
<tr>
<td>M2/GDP</td>
<td>17.1</td>
<td>16.6</td>
<td>23.0</td>
<td>23.6</td>
<td>26.9</td>
<td>26.0</td>
<td>31.2</td>
<td>25.8</td>
<td>27.0</td>
<td>27.4</td>
<td>20.1</td>
<td>27.5</td>
</tr>
<tr>
<td>Domestic Credit /LPS % 2/</td>
<td>133.6</td>
<td>140.1</td>
<td>131.7</td>
<td>111.5</td>
<td>116.7</td>
<td>113.2</td>
<td>137.9</td>
<td>181.7</td>
<td>90.4</td>
<td>99.1</td>
<td>129.2</td>
<td>137.4</td>
</tr>
<tr>
<td>Credit to the public sector/LPS %</td>
<td>34.1</td>
<td>37.5</td>
<td>45.3</td>
<td>33.7</td>
<td>28.6</td>
<td>31.4</td>
<td>55.6</td>
<td>79.1</td>
<td>33.2</td>
<td>53.7</td>
<td>37.7</td>
<td>48.7</td>
</tr>
<tr>
<td>Credit to private sector/LPS %</td>
<td>96.3</td>
<td>100.0</td>
<td>85.1</td>
<td>77.1</td>
<td>87.0</td>
<td>80.3</td>
<td>79.5</td>
<td>101.7</td>
<td>57.2</td>
<td>45.1</td>
<td>89.6</td>
<td>87.1</td>
</tr>
<tr>
<td>Real deposit rate (3 months) %</td>
<td>-9.1</td>
<td>-13.5</td>
<td>1.8</td>
<td>4.5</td>
<td>3.3</td>
<td>0.2</td>
<td>-0.1</td>
<td>-17.5</td>
<td>-7.5</td>
<td>-3.6</td>
<td>-4.1</td>
<td>-3.5</td>
</tr>
<tr>
<td>Real Discount Rate %</td>
<td>-3.3</td>
<td>-12.6</td>
<td>0.9</td>
<td>7.3</td>
<td>6.9</td>
<td>5.8</td>
<td>12.8</td>
<td>-7.1</td>
<td>-6.5</td>
<td>-4.5</td>
<td>-1.9</td>
<td>4.5</td>
</tr>
<tr>
<td>Real Treasury Bill Rate %</td>
<td>-8.9</td>
<td>-15.9</td>
<td>5.4</td>
<td>7.0</td>
<td>5.4</td>
<td>3.1</td>
<td>3.4</td>
<td>-13.8</td>
<td>-7.4</td>
<td>-5.4</td>
<td>-3.1</td>
<td>-0.5</td>
</tr>
<tr>
<td>Real Commercial bank lending rate %</td>
<td>-7.8</td>
<td>-22.3</td>
<td>8.7</td>
<td>12.6</td>
<td>12.1</td>
<td>12.8</td>
<td>13.8</td>
<td>-4.5</td>
<td>3.8</td>
<td>3.5</td>
<td>-2.2</td>
<td>8.6</td>
</tr>
<tr>
<td>Interest rate spread (lending rate minus LIBOR) %</td>
<td>9.5</td>
<td>15.9</td>
<td>33.0</td>
<td>30.1</td>
<td>28.7</td>
<td>28.8</td>
<td>26.8</td>
<td>36.8</td>
<td>6.9</td>
<td>6.6</td>
<td>22.1</td>
<td>30.3</td>
</tr>
<tr>
<td>Exchange Rate Z$ per US$ (end of period)</td>
<td>5.05</td>
<td>5.48</td>
<td>6.94</td>
<td>8.39</td>
<td>9.31</td>
<td>10.84</td>
<td>18.61</td>
<td>37.37</td>
<td>0.65</td>
<td>1.56</td>
<td>6.46</td>
<td>19.03</td>
</tr>
<tr>
<td>Change in exchange rate</td>
<td>91.6</td>
<td>8.6</td>
<td>26.5</td>
<td>20.9</td>
<td>11.0</td>
<td>16.4</td>
<td>71.7</td>
<td>100.8</td>
<td>2.0</td>
<td>13.5</td>
<td>36.9</td>
<td>50.0</td>
</tr>
<tr>
<td>Stock Exchange Capitalization US$ (millions)</td>
<td>1394</td>
<td>628</td>
<td>1433</td>
<td>1828</td>
<td>2035</td>
<td>3635</td>
<td>1969</td>
<td>1310</td>
<td>-</td>
<td>-</td>
<td>1320</td>
<td>2237.3</td>
</tr>
</tbody>
</table>

Sources: IFS data supplemented with Official Publications, World Bank and IFC data.

1/ Base money comprises reserve money and currency in circulation.

2/ LPS= liabilities to the private sector.

On October 2, 2000, the Daily Mail and Guardian newspaper of South Africa cited a World Bank spokesman saying that Zimbabwe would be accorded non-accrual status because of its inability to service its loans to the bank and it would join countries such as Somalia, The Democratic Republic of Congo (DRC), Sudan, Afghanistan and Yugoslavia which are in arrears to the Bank.
c. Economic Structural Adjustment Programme (ESAP) 1991-95

After poor economic performance, declining per capita income and mounting problems, the Government realized the limitations of dirigisme and adopted market reforms (with the support of multilateral institutions and the donor community). Liberalization of the financial sector was an integral part of the adjustment effort, which sought to make the financial sector more responsive to market forces and open to competition. However, the timing of the liberalization measures coincided with supply shocks that were caused by drought in 1991-92. The major reforms in respective areas of the domestic economy, the exchange and trade regimes during the period 1991-95 are shown in table 1.2.

d. Outcome of ESAP and Recent Economic Problems and Challenges

The ESAP programme was set back by a number of problems. These included the severe droughts of 1991-92 and 1995 which led to the contraction of the economy, delays in the disbursements of donor funds pledged at the Paris Club meetings, mounting domestic opposition to the reforms in the form of agitation by civil society, students and workers and policy reversals by the Government. The results of the economic reform programme supported by parallel Enhanced Structural Adjustment/Extended Fund Facility (ESAF/EFF) arrangements of the International Monetary Fund and funding from other donors in 1991-95 were mixed. On the positive side, progress was made in deregulating the domestic economy and liberalizing the foreign exchange and trade regimes. On the negative side, was the inability to handle budget problems mainly originating from the expenditure side, continued operational losses of public enterprises, high public sector borrowing which pushed up interest rates and crowded out the private sector, low growth rates aggravated by droughts, declining per capita income, high levels of inflation, declining import coverage, increasing unemployment, frequent policy reversals, increasing social tensions, and failure to meet performance targets.5

Government dissaving continued to undermine the required increase in savings and investment rates to ensure sustainable economic growth. There were major structural

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5 As indicated in ZIMPREST 1998, the Government noted that per capita GDP, private consumption and expenditure on health and education had all declined from their 1990 levels to their 1985 levels. During the period 1991-95, there was an annual average of 8,300 net additional jobs compared to a yearly addition of over 100,000 school leavers.
problems of the budget as reflected by the high tax effort (30 percent of GDP), expenditure larger than 40 percent of GDP, and rising domestic debt. Monetary aggregates exceeded set targets as the granting of ad hoc exemptions from reserve requirements and the high cost of sterilization weakened monetary control. Incipient banking sector problems such as non-performing loan portfolios, prudential and supervisory issues were not addressed promptly and revisions to banking legislation were delayed.

The government initiated the Zimbabwe Programme for Economic and Social Transformation (ZIMPREST) as a sequel to ESAP. This program was touted as a consolidation of the gains made in by the reforms of 1991-95 and a launch pad for additional reforms. The elevation of the role of the private sector in the production and distribution of goods and services in an environment where the Government's role would be relegated to providing an enabling environment was an integral theme of ZIMPREST.

Low economic growth, unemployment and poverty were viewed as the immediate constraints which needed to be addressed through the urgent restoration of macroeconomic stability, increasing public and private savings and investment, pursuing economic empowerment by creating employment opportunities, encouraging entrepreneurial initiatives, redistributing land, promoting indigenization, investing in human resource development and providing safety nets for the disadvantaged.

The importance of ensuring socio-political stability was underscored and initiatives to address this endeavour would include improvements in the quality of democratic institutions, the pursuit of good governance and the elimination of corruption. There was a clear recognition of a number of pending issues from the initiatives of 1991-95. The pending issues included budget consolidation, public enterprise, and financial sector and civil service reforms. Despite all the pronouncements, the economic policies that followed fell short of expectations primarily because of policy reversals and weak political commitment in the face of increasing constraints.

In November 1997, the exchange rate depreciated by about 50 percent. This was a result of poor export performance, economic agents' lack of confidence with the direction of economic policy and a number of policy mistakes as the Government responded to domestic pressures.
Table 1.2. Zimbabwe: Selected Policies before and after Reforms.

<table>
<thead>
<tr>
<th>Policy Area</th>
<th>Before Reforms</th>
<th>After Reforms (1991-98)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pricing</td>
<td>Controls covering over 60 percent of production</td>
<td>Price controls lifted but prices of many commodities continued to be determined by state-owned monopolies- subject to reversals</td>
</tr>
<tr>
<td>Budget</td>
<td>High budget deficits, Government participation in productive activities, subsidies, increasing reliance on financial sector to finance deficits, loss making public enterprises</td>
<td>Worsening fiscal problems:-deficits, inflationary financing, slow privatization, rising domestic debt, high interest payments, tax reforms-shift toward indirect taxes</td>
</tr>
<tr>
<td>Financial sector</td>
<td>Financial repression- interest rate ceilings, directed credit, asset prescription, direct monetary controls</td>
<td>Interest rate liberalization, adoption of indirect instruments of monetary control, issuance of large stock of treasury bills</td>
</tr>
<tr>
<td>Trade and Exchange Regime</td>
<td>Official Exchange rate pegged</td>
<td>Exchange rate became market determined but was subject to manipulation under an gentlemen’s agreement of the Bankers’ association and with the tacit approval of the RBZ</td>
</tr>
<tr>
<td>Existence of a dual exchange rate system</td>
<td>Exchange rate unified, foreign exchange bureaux and brokers allowed in July 1994</td>
<td></td>
</tr>
<tr>
<td>100 percent surrender requirement and a 15 percent export retention scheme</td>
<td>Surrender requirements relaxed and the Export Revolving Scheme was broadened to allow 100 percent retention of export proceeds in foreign currency accounts. Export incentive scheme eliminated (1994).</td>
<td></td>
</tr>
<tr>
<td>Forward cover at subsidized rates provided for selected imports</td>
<td>Withdrawal of forward cover by the Reserve Bank (1994)</td>
<td></td>
</tr>
<tr>
<td>Import licensing linked to foreign exchange</td>
<td>Foreign exchange allocation, OGIL, and import licensing</td>
<td></td>
</tr>
<tr>
<td>Negative list operational</td>
<td>Removed except negative list. Narrowed to health and security related items (1994).</td>
<td></td>
</tr>
<tr>
<td>Restrictions on current and capital accounts-blocked accounts emerged</td>
<td>Partial liberalization of current and capital accounts-liberalization of dividend remittances for all post 1980 investment. Foreign investment- subject to ad hoc policy reversals</td>
<td></td>
</tr>
<tr>
<td>Foreign currency accounts prohibited</td>
<td>Individual and corporate foreign accounts introduced June1993 and January,1994 respectively- subject to ad hoc policy reversals</td>
<td></td>
</tr>
<tr>
<td>High import surtax</td>
<td>Reduced from 15 percent to 10 percent in August 1994 but subject to policy reversals</td>
<td></td>
</tr>
<tr>
<td>Controls on rates in the foreign exchange interbank market</td>
<td>Controls on rates in the interbank market removed</td>
<td></td>
</tr>
</tbody>
</table>

The situation was worsened by the indecisiveness of the government as it capitulated on a number of issues and further undermined its own credibility. The Government worsened
the size of the budget deficit by disbursing an unbudgeted sum of about Z$3.5 billion in payments to war veterans. This capitulation on the part of government unleashed strong reactions from the population at large and from the trade union movement which successfully organized industrial action to challenge some of the tax measures adopted in order to finance the additional budgetary outlays necessitated by the payments to war veterans.\footnote{The trade union movement successfully forced the Government to remove the development levy and reduce sales tax.}

The Government's designation of over 1,500 commercial farms for expropriation worsened the uncertainty in the economy as the donor community expressed concerns about the developments.\footnote{At a donors' conference on the land issue, the Government softened its position and rhetoric and undertook to conduct the land distribution programme in a fair and transparent way guided by the laws of the country. This commitment strengthened the hopes for the release of donor funds. Despite the commitment, the Government seized over 841 commercial farms in November 1998. The process of forced acquisition of land was intensified in 2000, amidst a break down of law and order. War veterans whose actions appeared to have the blessing of the executive branch of government spearheaded this.} In an attempt to shore up the currency, the RBZ intervened in the foreign exchange market and introduced a number of measures. The measures included: further raising the discount rate; increasing import tariffs and surcharges; introducing selective capital and exchange controls; and raising reserve requirements for banks. Apart from being knee-jerk reactions and short-term palliatives, these measures worsened the underlying economic problems. Inflationary forces unleashed by the economic policies led to food riots; student demonstrations and work stay ways by the unions. The country's involvement in the regional conflict in the Democratic Republic of Congo (DRC) further worsened the budget deficit and the currency crises.

The challenge for financial sector reforms was to eliminate the constraints imposed by financial repression and to adopt indirect instruments of monetary policy. As stated in the Economic Policy Statement (EPS) presented in the 1990/91 budget speech, the objectives of financial liberalization included the stimulation of private sector savings through higher real interest rates; removal of direct credit allocation for sectoral support; the promotion of market determination of exchange rates and interest rates; the shift from direct controls to open market operations as the main instruments of monetary and
exchange rate policy, the reduction of market segmentation through deregulation of activities, the promotion of new entrants into the financial system and an overhaul of prudential regulations. Early in the programme, interest rates were liberalized and many institutional changes were made in the financial sector. However, the efficacy of these measures was undermined by poor performance in other policy areas as well as some aspects of the financial sector itself.

The theoretical basis of this study is the vast literature on financial intermediation, liberalization, savings and investment, empirical studies on the demand for money function and the transition to indirect instruments of monetary policy. Many researchers have cast some doubts on the efficacy of financial liberalization to increase savings and investment as suggested by the financial liberalization thesis inspired by the work of MS. One of the criticisms levelled against the empirical work on financial liberalization is that many of the models do not make a clear distinction between financial and total saving. Most empirical work has been conducted using national accounts concept of saving, which is usually derived as a residual in the accounts and thus may be subject to errors of measurement. An increase in deposit rates may simply lead to a substitution between financial assets and other assets without changing the volume of total saving.

The empirical evidence on the interest elasticity of savings is ambiguous because of the income and substitution effects. The substitution effect leads to an increase in savings in so far as individuals are motivated to decrease current consumption on the basis of a favourable rate of transfer (interest rate) between future and current consumption. The income effect leads to a decrease in savings given that the higher rate of interest implies less effort in achieving a given level of income. As a result, consumption may increase as a result of the rise in interest rate. The net effect depends on which of these two effects is dominant. Many researchers have provided evidence that interest rates have a predictable and definitive impact on the form in which savings are held rather than on its overall amount, (Williamson, 1968; Chandavarkar, 1971; and Mikesell and Zinzer, 1973. Gibson and Tsakalotos (1994) refer to similar studies on some sub-Saharan African countries which also draw the conclusion that financial liberalization and interest rate deregulation have had very little impact on improving the size and allocation of savings. There is thus little empirical support for the repression hypothesis that the positive substitution effect of real interest rates on savings dominates the negative income effect. These issues are discussed in Chapter 2.
In discussing savings, confusion often arises as to which measure is being used. This study addresses this issue by distinguishing between financial savings and the national accounts concept of savings. Yet another identified shortcoming of the literature is the scant attention paid to the capacity of the banking system to create credit. There seems to be some assumption that banks are only used as savings depositories. Consequently, the supply of loans is dependent on deposits held by the banks. This need not be so because loans given by banks will to a large extent end up as deposits in the banks. The implication of such a situation is that the amount of loans determines deposits rather than the other way around. With the central bank assuming the responsibility of the lender of last resort, reserve requirements can cease to be a binding constraint on bank behaviour. Subject to the cost of such borrowing from the central bank, banks can be expected to meet reasonable demand for loans. The critical factor under such a situation is therefore not incentives for saving but rather incentives for investment. If banks can create credit without having to increase their deposits, an increase in financial saving may make no difference to the amount of total credit given to the private sector (Gibson and Tsakalotos, 1994).

1.3. **The Problem: Financial repression and direct instruments**

From a history of extensive government intervention in the economy, Zimbabwe undertook financial liberalization measures simultaneously with a macroeconomic stabilization programme. Unstable macroeconomic conditions were a major setback not only for financial sector reforms but also for other economic reforms. Additionally, the culture of control was ingrained and was not an insignificant contributor to some of the problems that were experienced. This section describes the financial repression measures that existed during the period before 1991.

Prior to financial liberalization, Zimbabwe’s financial system comprised the Reserve Bank of Zimbabwe (RBZ), five commercial banks, two discount houses, four acceptance or merchant banks, three building societies, six finance houses, the Post Office Savings Bank (POSB), over fifty insurance companies, several development finance institutions including the Zimbabwe Development Bank, a large number of pension funds, the Agricultural Finance Corporation and a stock exchange. In the 1970s, the financial structure was relatively stable. The number of financial institutions increased after liberalization. The details on institutional issues are discussed in Chapter 3. Commercial banks, three of which were locally incorporated branches of foreign banks, dominated the
financial system. Two commercial banks were partly owned by the government. There were close linkages among the few financial institutions and these took the form of joint ownership of specialized institutions such as discount houses, as discussed in Chapter 3.

Monetary policy was passive and accommodating. Price and exchange rate stability were addressed directly through price controls and a tight exchange control regime. The monetary policy approach followed the real bills doctrine especially with respect to the link between foreign exchange allocations and bank credit availability. The system of allocating foreign exchange effectively became a signalling and credit-rationing device. Access to foreign exchange became the main consideration for credit extension. Those allocated foreign exchange were invariably assured of bank credit. In that sense, the supply of foreign exchange became an effective constraint on credit availability and in some sense fostered conservative lending operations of banks. This may explain the low incidence of bad loans especially before 1980.

After 1980 the banks in which the government held shares aggressively extended loans to emerging businesses, which previously had no access to bank credit, a legacy of the country's political history. Other indigenous banking institutions followed suit after liberalization. The weaknesses of the unchanged regulatory statutes and practices became apparent. Thus systemic problems arising from the expansion of activities by some financial institutions went unchecked. The higher incidence of poor portfolios and a weak supervisory framework were the underlying causes of these problems.

With the advent of financial liberalization, there was a dramatic shift from an accommodating monetary policy to a proactive and tight one (initially) as reflected by the regime shift in interest rates. Interest rates were increased sharply as the RBZ changed the discount rate in an effort to rein in inflation and restore macroeconomic stability. However, without a similarly tight fiscal policy, the tight monetary policy stance was unable to contain inflation, which increased from an average of less than 12 percent in 1975-1990 to an annual average over 25 percent after 1992. The poor outcome undermined policy credibility and gave rise to policy reversals. The rise in inflation struck at the core of the main policy objective of the RBZ to control inflation. Inflationary pressures became more obvious as price controls, hitherto applicable to over 50 percent of domestic production, were partly removed. Over the years, macroeconomic conditions worsened as a result of droughts and profligate budgetary practices. High and inflationary
fiscal deficits exerted upward pressure on domestic interest rates. The high interest rates contributed to increased capital inflows and problems for monetary control. Capital inflows resulted in an appreciation of the exchange rate. The capital inflows were ephemeral possibly because of some perceptions of country risk and credibility of the policy framework.

Financial Repression in Zimbabwe

The quest for a liberalized financial system presupposes the existence of some form of financial repression or impediment to the efficient functioning of financial intermediation. Typically, financial repression manifests itself through distortions in financial prices, ceilings on interest rates, negative real interest rates, taxes on financial intermediation and other distortions. In Zimbabwe, the distortions originating from macroeconomic controls were associated with interest rate ceilings, liquid asset ratios, trade and exchange controls, portfolio restrictions on financial institutions (asset prescription), creation of special institutions for the provision of subsidized credit to chosen sectors, selective credit policies and directed lending programmes. Under these circumstances, monetary policy relied on direct controls.

a. Interest rate controls and ceilings

Financial repression worked in tandem with other economy-wide distortions that were induced by the extensive government interference with markets. Due to ceilings on lending interest rates and administrative controls on other interest rates, interest rates remained more or less at the same levels after 1965 and were changed only marginally in 1980 as the authorities sought a more active role for monetary policy. Only after the more substantial interest rate changes initiated in 1991 did real interest rates become positive and even then, they were positive only between 1993 and 1997. Thereafter, and as inflation accelerated, they became negative (Table 1.1).

In 1989, the RBZ replaced the minimum lending rates (MLR) for commercial banks and finance houses with the base-lending rate (BLR). The BLR became a reference rate, which the lending rates for preferred activities were not allowed to exceed by more than specified percentages. Initially the BLR was set at 13 percent, the same level as the MLR that it replaced. Banks were allowed to charge a maximum of 22 percentage points above the BLR for productive lending and 3 percentage points for nonproductive lending.
The RBZ took into account the level of excess liquidity and inflation in setting the BLR. At the same time minimum lending rates were set for what were considered as less desirable activities including speculation. The interest rates paid on deposits in commercial banks, building societies and finance houses were set or stipulated by the RBZ. Interest rates on commercial bank fixed deposits, negotiable certificates of deposit, treasury bills, call deposits and inter-bank loans were not directly controlled and thus could be determined freely in the market albeit within a narrow range. Other interest rates were set in line with various sectoral objectives.

b. Trade and exchange controls

The Government's intervention in the financial sector before 1991 contributed to the emergence of financial repression which could have had far-reaching effects on the saving and investment if it were not for the extant trade regime and exchange controls. The exchange control regime and quantitative restrictions on imports contributed to the paradoxical existence of substantial forced savings in a situation of capital scarcity. Foreign exchange was administratively allocated and the main criterion was a strong export bias to ensure foreign exchange earnings. Only recipients allocated foreign exchange could undertake major investments. The import content of investment undertaken under the import substitution strategy that was adopted during the period of economic sanctions was a quite high.

Investment was constrained by the shortage of foreign exchange, the allocation of which became a rationing device for the allocation of credit. With foreign exchange shortage as a major binding constraint on investment activities, the demand for domestic credit was derived in the sense of it being dependent on the availability of foreign exchange. Due to the lack of adequate information on the quality of borrowers and also given the signalling effect of foreign exchange allocations, financial institutions were content to rely on the government in resolving the adverse selection problem arising from asymmetric information. The entities receiving foreign exchange allocations were deemed good risks while those excluded were considered bad risks. The task of rationing credit through foreign exchange allocation procedures resided with the government and

8 This is discussed in detail in Asea, Leape and Ncube (1996).
this usurping of allocative decisions from the financial market constituted one of the elements of financial repression in Zimbabwe.

Under the tight exchange control regime and quantitative restrictions on imports, all foreign exchange earned by residents had to be surrendered to the RBZ. Together with an inter-ministerial committee, the RBZ was responsible for allocating foreign exchange at the official exchange rate. Foreign exchange transactions in the inter-bank market were limited and had to be within bands of the official buy and sell rates set by the RBZ. Adverse balance of payments developments resulting in foreign exchange shortages often triggered ad hoc measures to intensify controls on both the current and capital external accounts.

c. Portfolio restrictions and liquid asset ratios (asset prescription)

A liquidity overhang developed and was driven by government restrictions and the lack of foreign exchange needed for investment. Most investment had significant foreign exchange requirements such that the less foreign exchange was available, the lower the level of investment which could take place. Banks' ability to extend credit was limited by foreign exchange shortages, hence the build up of high levels of liquidity in the financial system. Government restrictions were designed to ensure access to nonbank financing of budget deficits and these restrictions operated through statutory requirements, which for example stipulated that nonbank financial institutions invest about 60 percent of their assets in government securities (asset prescription). The combination of weak credit demand and the lack of alternative investment opportunities often resulted in an overfulfilment of this portfolio requirement. Nonbank financial institutions took up most of the Government stocks whose yield was determined by the RBZ in line with prevailing conditions and budgetary implications.

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9 For example, the Pension and Provident Fund Act stipulates that a registered fund shall at all times hold its assets in Zimbabwe and in a form that is realizable in Zimbabwe, it shall at all times hold not less than 35 percent of the value of its assets in local registered securities which are issued or guaranteed by the State or issued by a local authority or statutory body or in loans approved by the registrar to a local authority or statutory body. The Insurance Act states that insurance funds shall be held in prescribed securities as specified by the Minister of Finance who shall from time to time specify the proportions. According discretionary powers to the minister was convenient for purposes of tightening or loosening the requirement as needed for policy purposes.
A wide range of institutions as well as companies took up treasury bills. The two discount houses were the market makers for treasury bills and other short-term instruments. The discount houses were the intermediaries between the RBZ and other financial institutions and had exclusive access to the RBZ's discount window. The constraints on the demand for credit contributed significantly to the substantial excess liquidity that prevailed in the banking system.

d. Directed lending programmes and selective credit policies

Special financial institutions were created for purposes of directing credit to specified sectors. Such allocative controls sought to direct financial resources towards projects and sectors that financial institutions shied away from either because of risks involved or long gestation periods. The measures included selective credit programmes, compulsory investment requirements and preferential tax treatment. Apart from the second best argument, some of these policies could simply have been a means to cater for special interest groups. However, it needs to be noted that the success of such selective credit policies turns on the ability of the authorities to segment and restrict financial markets effectively. Failure to effectively segment and restrict the financial markets negates the objectives of the policy since many opportunities for arbitrage resulting in the rerouting of subsidized credit to uses with the highest private returns would be created. As indicated, Zimbabwe's financial market was highly segmented. Through the foreign exchange allocation procedures, the authorities set up specific targets for credit to small-scale enterprises.

The RBZ mobilized special funds through the issuance of certificates of deposit (CDs) for on-lending to development institutions such as Zimbabwe Development Bank, Small Enterprise Development Corporation (SEDCO) and the Credit Guarantee Company for small to medium-scale enterprises for approved projects. Additionally, the RBZ used moral suasion to induce banks to increase lending to new small and medium sized exporters, newly established and mostly black owned enterprises. Quantitative targets were set for commercial banks and banks that achieved such targets became eligible for special funds while those that failed to do so were denied such access. Before 1980, commercial and merchant banks assured large scale and traditional exporters pre-and post-shipment credit at lower rates of interest. This amounted to subsidizing export-oriented
sectors. Such preferential treatment of some sectors continues to be a feature of the financial system even under the measures that were introduced in year 2000.\textsuperscript{10}

The government used selective credit techniques including subsidized lending through non-price rationing systems. Preferential lending rates were set for what were considered productive activities while unproductive activities attracted penal interest rates. The RBZ extended credit to the government and parastatal organizations at preferential rates. The institutional framework, taxation of some financial assets and unequal reserve requirements were geared to promote the microeconomic objectives as indicated above. Credit objectives were achieved through direct contacts with financial institutions to ensure that credit was allocated to productive uses. The RBZ influenced the quotas for the Agricultural Marketing Authority (AMA) overdraft loans and securities. These were apportioned among the banks on the basis of market share. The AMA would contact and arrange loans for purchase, transportation and storage of crops with each bank. The government guaranteed up to 40 percent of AMA’s loans. The guaranteed portion attracted a lower interest rate.

e. Taxation and regulations

The differential taxation of some financial instruments depending on the type of institution in which they are held creates arbitrage opportunities, which lead to the gravitation of financial intermediation to the financial instruments with low taxes. In Zimbabwe, a 15 percent withholding tax on treasury bills had the effect of reducing discount houses and commercial banks’ demand for treasury bills; the exemption of POSB deposits and building society “c” shares attracted deposits to these institutions and the tax on pension contributions acted as a disincentive for long-term savings mobilization.

Regulatory requirements tend to vary across institutions and not infrequently on similar financial instruments. In particular, there are differences in the level and type of supervision, in the required capital adequacy guidelines and minimum capital requirements. The differentiation in regulatory and supervisory requirements also creates

\textsuperscript{10} See Chapter 4 for details of the new measures including the release of 50 percent of reserve requirements for purposes of granting subsidized credit to selected sectors.
arbitrage opportunities and encourages institutions to set up subsidiaries in activities which are subject to less onerous requirements.

f. Direct Instruments of Monetary Policy

Monetary policy was conducted through direct mechanisms, the main ones of which were liquid asset ratios, interest rate controls, direct credit controls, hire purchase arrangements and import deposits. The discount window was used at the initiative of financial institutions and the RBZ stood ready to discount any bills brought to it. The shortcomings of some of these measures are discussed in chapter 3.

The negative effect of financial repression on the savings and investment processes and economic growth is one of the issues widely discussed in literature. Empirical evidence on the impact of interest rate liberalization on saving is at best, inconclusive (Mikesell and Zinser, 1973; Boskin, 1978; Fry, 1978; de Melo and Tybout, 1986; Giovannini, 1983 and many others). Sure enough, the distortions in the financial market made for an inefficient allocation of scarce financial resources in Zimbabwe. However, the major breakdown in the savings and investment process arose from the serious foreign exchange shortages. There were sizeable savings, which could not be invested because of the binding foreign exchange constraint and the administrative allocation procedures adopted by the Government.

The removal of the constraint on imports, the availability of credit to fund such consumption and the need to hedge against inflation seems to have dominated the possible increase in savings due to the wealth effects as agents tried to compensate for the decline in the real value of their wealth. Consequently, the savings rate declined following the financial liberalization measures. This was also mirrored by the sharp increase in the resource gap as measured by the deficit on the external current account. Gross national savings averaged 18 percent of GDP in 1988-91 but declined to an average of 13 percent of GDP during the period 1992-95. The resource gap increased from an average of about 3 percent of GDP to about 8 percent of GDP in 1992-95.

The high nominal interest rates associated with financial liberalization encouraged significant capital inflows in 1994. This contributed to monetary control problems, as the authorities did not sterilize the externally induced increase in monetary aggregates. Consequently, there was a wide gap between targeted and actual growth in broad money.
Prior to liberalization and the removal of exchange controls, external sources of monetary expansion were easily handled through variations in the foreign exchange allocations for imports. With the liberalization of the trade and exchange regime, it became difficult to sterilize external sources of monetary expansion and this required the monetary authorities to re-examine their specification for the operational instruments of monetary policy. These issues beg the question of what monetary aggregate the authorities should focus on for purposes of monetary policy. Even outside the context of financial liberalization and developing countries, the question of the appropriate monetary aggregate or target variables is an open issue.

1.4. Objectives of the Study

This study examines the process of financial liberalization in Zimbabwe with a view to acquiring a better empirical understanding of the behaviour and changes generated by this process on macroeconomic variables. Econometric evidence is examined in order to establish whether the Zimbabwe data supports the links between higher interest rates and savings and investment hypothesized by McKinnon and Shaw. In addition, the impact of financial liberalization on the relationships among monetary aggregates and the real variables is examined, as is the scope for an active use of the indirect instruments for monetary policy. Attention is paid to the link between price stability, domestic interest rates, and monetary policy.

The experiences of some countries such as South Korea have shown the importance of the intermediary role of curb markets under conditions of financial repression. This takes place through financial intermediation under informal arrangements. Activities in this sector are difficult to document because of data deficiencies. The analysis in this study is limited to financial intermediation in the formal sector. The level of development and sophistication of this process is reflected by the ratio of financial assets to income as well as by the levels of saving and investment.

Many of the existing empirical studies on the financial sector have focused on the experiences of some Asian and Latin American countries and a few studies have focused on African economies (e.g. Adam and Ncube, 1994; Aryeetey, 1997; Bhatia and Khatkhate, 1975; Callier, 1990; Galbis, 1995; Honohan and O'Connell, 1997; IMF, 1998; Leite, 1982; Montiel, 1996; Ncube, 1997; Popiel, 1994; and World Bank, 1989).
Country specific work remains one of the gaps in the research on the financial sector in Africa. Apart from some work of Jenkins (1999), Moyo (1998) and Ncube (1997), Zimbabwe has no tradition of empirical studies on the financial sector that are in the public domain. This research adds to the stock of such studies. An empirical investigation of such issues as the determinants of savings, interest elasticity of savings, demand for money function, bank supervision issues and the institutional framework for the RBZ, Government budget deficits and the inflationary process contributes not only to the debate on financial sector liberalization in Zimbabwe and the transition to indirect instruments of monetary policy but also to macroeconomic debates. There has been no evaluation of the financial sector reforms that were introduced in 1991. This study attempts to fill that void. It addresses the issue of stability in the demand for money function in Zimbabwe through the application of error correction methodology. Insights are gained as to the requisites for successful financial liberalization including the sequencing, prudential regulations and supervision.11 The study focuses on the macroeconomic effects of financial liberalization. Consequently, specific issues about the operations of the financial institutions at the micro level and the operations of informal financial markets are not addressed.

1.5. Methodology

This study examines Zimbabwe’s experience with financial liberalization and sets the analysis against the policy makers’ stated objectives for the process of financial liberalization. The empirical work related to this endeavour, investigates the relationships among selected macroeconomic variables on which financial liberalization might be expected to exert some influence. The intention is to establish the extent to which the theoretical tenets of the financial liberalization literature are borne out by the Zimbabwe data. The work revolves around three main issues. First, it seeks to establish whether the change in the interest rate regime from one of controls to one of market determined rates ushered in by financial liberalization led to increases in savings and investment as suggested by the MS (1973) financial repression paradigm. Second, the importance of the demand for money function and its stability in the calibration of monetary policy

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11 Experiences with financial sector liberalization in Latin American and Asian countries seem to suggest that the liberalization of labour and goods markets precede financial sector reforms. In Zimbabwe, financial liberalization was simultaneously undertaken with a stabilization program.
necessitates an examination of the underlying relationships in order to make a meaningful interpretation of the conduct of monetary policy. The empirical work on the demand for money draws on the rich literature and empirical work on other countries. Third and finally, high levels of inflation and interest rates have dogged Zimbabwe’s economic liberalization program. It is useful to establish the driving forces behind these phenomena and identify the implications for the adoption of indirect instruments of monetary policy.

The methodology applied on the specified relationships is of the partial equilibrium genre. The main determinants of savings and investment, money demand and inflation over the period 1975-98 are established. This approach facilitates the estimation of the determinants of the variables of interest on the basis of which some inferences about the impact of financial liberalization can be made. Caveats are in order regarding this approach. Financial reforms were introduced in 1991 and within the context of other reforms, which included changes in the trade and exchange regime, efforts at fiscal reforms, the removal of price controls etc. Consequently, the number of observations is small and the process of financial liberalization is only a part of the wider reforms that were introduced. A partial equilibrium approach to identify the determinants of the macroeconomic indicators identified above provides a way around the problem of a limited number of observations in that the estimates can be made for the period 1975-98 for which data are available and then specific dummy variables and indicators of financial intermediation can be incorporated to take account of the process and timing of financial liberalization. The sources of the data used are described in the data appendix.

1.6. Objectives of financial liberalization in Zimbabwe

Within the liberalization framework, the objectives for monetary policy were to contain inflation to single digits and maintain a stable and market determined exchange rate, especially against the background of the inflationary pressures.\textsuperscript{12} The secondary market for government securities was to be strengthened with a view to enhancing the use of indirect instruments of monetary control. In that regard, the Stock Exchange was to be

\textsuperscript{12} Fiscal deficits, the removal of exchange controls, surges in credit and import demand, increases in both private and public sector wages and drought-induced supply shocks put upward pressure on prices. Further upward adjustments in prices followed the removal of price controls. These developments generated pressures on the balance of payments and the exchange rate.
further developed to become a vibrant source of equity finance and a Securities Exchange Commission was to be set up. Trading in government and other commercial paper was to be opened up to wider participation. The adoption of indirect instruments of monetary control was predicated on a successful reduction of the budget deficit and domestic public debt.\textsuperscript{13} Interest rates were to be liberalized and kept positive in real terms, with a view to improving financial intermediation and savings and investment. The complete liberalization of interest rates was to be gradual and to coincide with the switch to indirect instruments of monetary control and 1995 was set as the target date for completion.

Open market operations were to become the main instrument for money market intervention to influence monetary aggregates and interest rates. It was expected that the government would abandon the policy of setting rates on government stock in favour of market-determined interest rates. Competition was to be fostered among financial institutions and through it, spreads between lending and savings interest rates were to be narrowed. Barriers to entry were to be gradually removed and market segmentation was to be eliminated by unifying reserve requirements and applying uniform regulations for similar banking activities. Wider branch networks were to be encouraged in order to deepen financial intermediation. New legislation was to be enacted to guide the emergence of new money market instruments and financial services and to set and strengthen the regulatory and supervisory framework.

1.7. Liberalization Measures

The measures taken to liberalize the financial system included: the freeing of interest rates, introduction of foreign currency deposit accounts, removal of exchange controls, acceptance of Article VIII of the IMF, adoption of market-based procedures for monetary control, development of the money market, and opening up the financial system to new entrants.\textsuperscript{14} These developments posed new challenges for the conduct of monetary and other policies.

\textsuperscript{13} In 1996, interest costs of central government domestic debt were about 9 percent of GDP while interest cost of external debt were about 2 percent of GDP. The stock of the domestic debt increased to 47 percent of GDP compared to an annual average of 32 percent of GDP in the preceding five years. The average stock of external debt remained about 37 percent of GDP over the same period.

\textsuperscript{14} Given the fragmented institutional set up for the supervisory responsibilities, considerations were made for the revision of the relevant pieces of legislation but this (continued)
After financial liberalization, Zimbabwe experienced problems with the health of the financial system resulting in the collapse of two financial institutions, and near collapse of a few other institutions. The RBZ provided support to some banks through inter alia, waivers of reserve requirements. These developments underscore the weaknesses of the banking sector. The changes in banking legislation were not timely to avert financial sector problems. Proposed changes in the statutes were on the drawing board for a long time and the version that was adopted in 1999 somewhat reduces the autonomy of the central bank and leaves the licensing authority with the Ministry of Finance. The potential for political interference, patronage and rent seeking behaviour abound in such arrangements. In Zimbabwe there is the precedent of the government disregarding the better judgment of the RBZ and granting a license to a bank that eventually collapsed. There were allegations of political interference and rent seeking behaviour on the part of the license granting authority.15

The promotion of savings and investment was one of the objectives of the financial liberalization measures adopted in Zimbabwe. The savings-investment process constitutes one of the main elements for attaining economic growth and adjusting to macroeconomic imbalances. Early growth models of the Harrod-Domar genre emphasized the importance of savings in the investment-growth nexus. A higher domestic savings rate was viewed as an important intermediate policy objective. Two issues come to mind in this regard and these pertain to the sectoral composition of the savings and the efficiency of the financial system in transforming the savings into productive investments. Accordingly, many developing countries emphasize domestic resource mobilization efforts as a basis for capital formation and economic growth especially in an environment of declining foreign capital inflows hitherto providing a cushion for the deficiency in domestic savings.16

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15 Press reports on the problems of the United Merchant Bank and other problem cases exposed a number of these issues. For an example, see the Zimbabwe Independent Newspaper of November 3, 2000 entitled “Court orders probe into graft claims at bank registry”.

16 The 1980s witnessed a general decline in the net resource transfers to developing countries. The resource deficiency was further complicated by fluctuations in commodity export earnings of some of the developing countries. However, until the recent upheavals (continued)
Questions have arisen as to whether differences in growth rates among countries could be explained by differences in their savings rates. The Solow growth model, which was most influential until the endogenous growth theories suggests that the accumulation of physical capital can not fully explain both the growth over time and regional differences in output per person. The model settles on the rate of change in technical progress as an explanation for differences in economic growth; changes in the saving rate have a level effect and not a growth effect as suggested by early theories of growth.¹⁷ Feldstein and Horioka (1980) found high levels of correlation between saving and investment rates and this lends support to the importance attached to savings rates. One possible explanation for this finding is the existence of barriers to capital mobility.¹⁸ Endogenous theories of growth find an explanation for the differences in economic growth in endogenous technological progress and widen the concept of capital to include the accumulation of knowledge. Researchers following these theories incorporate financial sector variables in their empirical work. These are discussed in Chapter 2. As shown in chapter 5, the causal directions of the relationships between saving, investment and growth are not straightforward.

When Zimbabwe undertook financial liberalization, the macroeconomic environment was unstable and continues to be so, as reflected by high fiscal deficits, high levels of inflation, declines in economic activity, high nominal interest rates and large external account deficits (Table 1.1). The entry of new financial institutions was expected to lead to increased competition.¹⁹ Concerns were raised as to whether the country was becoming over-banked and that some of the competition among the financial institutions in world financial markets, there has been some rebound of capital flows especially to emerging markets.

¹⁷ See Romer (1996, 16-17) for graphic exposition of the effects of an increase in the saving rate on investment, productivity and consumption.

¹⁸ See Romer (1996, 32) for other explanations of this result.

¹⁹ Including many unregulated and unauthorized financial institutions such that in April 1995, the Ministry of Finance found it necessary to publish a list of authorized financial institutions and warned the public about a range of bogus institutions that had emerged.
has spawned the potential for a crisis and that the authorities should restrict entry. Critics may dismiss these concerns as being motivated by a desire, on the part of the established financial institutions, to protect their profitable business by limiting competition and yet miss the potential pitfalls of the developments in this sector especially in the absence of a strong regulatory and supervisory framework.

The high profits that generally reported in Zimbabwe's financial sector have motivated entry by new players. Part of the profitability is attributed to transactions in the foreign exchange market amidst the regime of controls that have been enforced through the bankers' association and the large volume of lucrative government securities. The RBZ has responded to calls for limiting the number of banks by suggesting that the market is best placed to determine the optimum number of banks as long as supervisory and prudential measures are enforced effectively. Recent events resulting in the withdrawal of a bank licence and the temporary waiver of legal reserve requirements for some institutions point to some weaknesses in the regulatory and supervisory framework.

Barring recent policy reversals, the trade and exchange rate and financial liberalization components of reforms had progressed faster than fiscal and structural reforms. However, some distortions continue to exist in the financial sector and these are mostly due to the differential treatment of financial institutions with respect to reserve requirements, areas of activity, taxation and ceilings on some interest rates and the use of high and unremunerated legal reserve requirements, which are an implicit tax on financial intermediation. Furthermore, the reforms have been undermined by frequent policy reversals.

The use of indirect instruments of monetary control such as open market operations, brings into focus the issue of quasi-fiscal costs implied, the need to sterilize funds injected into the banking system and the need for a tighter fiscal policy stance in order to minimize interest costs to the budget and to limit monetary growth. Another

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20 See "The Financial Gazette, July 31, 1997, January 8, 1998 and "The Zimbabwe Independent" of November 11, 1997. The commentators predicted a series of mergers and acquisitions as banks try to consolidate their positions. Mergers have already started taking place as two new banks merged and an older discount house was about to be acquired by a new merchant bank. (Merger of Heritage Investment bank and First Merchant Bank of Zimbabwe and the merger of Bard Discount house, the Discount Company of Zimbabwe and Kingdom securities).
source of quasi-fiscal costs could be losses associated with the operations of the central bank including, in the case of Zimbabwe, exchange losses associated with the RBZ's past practice of providing foreign exchange cover. Central bank losses seriously undermine the role of the central bank and confidence in the financial system.\(^\text{21}\) The Zimbabwe experience seems to suggest that budgetary problems have delayed a more extensive use of indirect instruments of monetary policy because the government has often resorted to overdrafts from the RBZ and a large volume of treasury bills which have further compounded the fiscal problems and liquidity management. The increased use of overdrafts runs counter to the Government's pronounced intention to dispense with this facility.

While there are clear advantages associated with financial liberalization, the process might also be fraught with dangers and some undesirable effects. If liberalization is introduced in an inflationary environment, as was the case in Zimbabwe, there could be a decline in household savings as small savers may liquidate financial assets in order to maintain their standard of living. Higher interest rates such as ensued could have lowered household savings by making it feasible to attain a target income with smaller current savings. Financial liberalization could also lower savings by making it easier to access credit and thus relaxing the income constraint on consumption spending. High interest rates could spell disaster for the corporate sector not only by raising the cost of borrowing but also by making it more costly to service existing debt.

The corporate sector in Zimbabwe has suffered the adverse effects of high interest rates and some segments of it have engaged in distress borrowing. Interest rates have been volatile in a setting of general macroeconomic instability and low growth. A significant component of what is traditionally measured as financial deepening may be symptomatic of a deterioration in the finances of the corporate and public sectors which are forced to accumulate large debt in order to finance the interest bill rather than finance new investment (the greening effect). Financial deepening driven by such Ponzi financing has been observed in a number of countries (e.g. Turkey, Yugoslavia and New Zealand) where

\(^{21}\) Combined with high levels of inflation, exchange rate volatility, the lack of confidence in the financial system could result in dollarization, which in turn would weaken the effectiveness of monetary policy.
financial liberalization redistributed income in favour of creditors and encouraged distress borrowing (Akyuz, 1993).

High and increasing real interest rates tend to contribute to increasing non-performing loans. However, the opposite—persistently negative real interest rates—indicate distortions in the financial market, which may be a direct result of government controls on nominal interest rates. Lending booms tend to be a precursor of financial crisis. These could reflect lax lending criteria, weak regulatory environment and prevalence of public sector guarantees. This encourages excessive risk taking by some financial institutions, stock market and real estate asset price bubbles in context of an expansionary monetary policy (monetary policy tightening would lead to a burst in the bubbles). A deterioration in the external current account is usually financed by large capital inflows (these inflows could fund domestic credit booms). The financing of current account deficits by short-term portfolio capital inflows could create serious liquidity problems for the financial sector when these flows are reversed as economic agents’ view the current account deficit unsustainable.

1.8. Issues and chapter outline

The process of financial liberalization in Zimbabwe has been characterized by increases in nominal interest rates, inflation, budget deficits and reliance on overdrafts and financing from the banking system by the government. Other notable features have been the collapse of the exchange rate, non-convergence of domestic interest rates to international interest rate levels, continued spreads, and loss of control on monetary aggregates. These issues are addressed in chapters 3-7 of this thesis. Chapter 2 reviews selected theoretical issues on liberalization and takes stock of the stylized facts on financial sectors in developing countries. Chapter 3 examines the institutional framework of the financial sector and monetary policy. Chapter 4 assesses the financial reforms and the changing monetary policy framework in Zimbabwe. Chapter 5 examines the demand for money and the implications for policy. Chapter 6 analyses the effects of liberalization on savings, investment and growth and Chapter 7 analyses the underlying causes of inflation and high interest rates. Chapter 8 concludes with some policy lessons and suggestions for further research.
CHAPTER 2. REVIEW OF LITERATURE ON SELECTED FINANCIAL SECTOR ISSUES

2.1. Introduction

This chapter reviews several theoretical issues underlying the debates on financial liberalization and the adoption of indirect instruments of monetary control. It draws on the extensive literature on the links between money and real variables and the associated transmission channels, financial intermediation, the conduct of monetary policy and regulatory issues. A general set of stylized facts about financial sector development sets a useful context in which to review the empirical evidence on financial liberalization. The insights gained from this exercise are an important building bloc for the empirical work on the Zimbabwe data.

The work of McKinnon (1973) and Shaw (1973) referred to in Chapter 1 emerged against the background of a predominant view that the financial sector functioned efficiently and therefore needed no special role in economic models.22 Debates about the influence of money and the financial system on real economic variables date back to the classical controversies between the banking and currency schools during the “Bullionist Controversy” about British monetary theory and policy during the period 1797–1821.23 The debates have been carried forward between the various perspectives of economic thought i.e. Keynesians versus monetarists, post-Keynesians, neoclassical and new classical theorists. At the policy level, these differences are often reflected in the differences of emphasis on such issues as liquidity and total credit controls and the endogeneity or exogeneity of money supply.24 Interest in the importance of the financial

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22 Efficiency can have different meanings. Tobin (1984) defines at least three: information arbitrage efficiency; fundamental valuation efficiency—referring to the idea that the current valuation of a financial asset accurately reflects future payments to which the asset gives title to rational expectations; and the Arrow-Debreu sense full-insurance efficiency and functional efficiency, which in the case of the financial system refers to the mobilization of saving and allocation to more socially productive uses.

23 The banking school advocated discretion in the authorities’ implementation of monetary policy and claimed that money supply would change in response to demand such that monetary policy could not influence the economy. Its real bills doctrine variant asserted that money would not cause any problems if loans were made only for productive purposes. The currency school espoused the view that paper money should be statutorily regulated so that it would be neither excessive or deficient otherwise fluctuations in the currency would exacerbate cyclical tendencies in the economy (Schwartz, 1989).

system focuses on the role of money as a conduit of financial resources from savers to investors, the efficiency with which this allocation process occurs and its susceptibility to deliberate policy changes.

Many researchers have expended efforts in trying to establish the relationships among such variables as savings, investment and economic growth. However, the evidence is mixed with some researchers confirming the postulates of the MS hypothesis and others refuting it. MS examined the financial sector problems of developing countries and concluded that there was financial repression characterized by negative real interest rates and other forms of distortions. These distortions were viewed as inimical to savings, investment and growth. Financial liberalization emerged as the main policy recommendation to deal with financial repression. The main elements of this process are the removal of controls on interest rates and other economy-wide distortions, getting rid of public banks and stopping directed credit. Disappointing country experiences and the continued allure of financial repression and direct instruments of monetary control underscored the necessity for more comprehensive financial sector reforms. The concept of financial liberalization has since been broadened to include transition to indirect instruments of monetary policy, institution building, regulatory and supervisory issues.

A view adapted from the flow of funds analysis and articulated by Gurley and Shaw (1955), herein referred to as OS, recommends an increase in the range of attractive financial assets in order to encourage sectors where savings exceed investment to acquire these assets. Such acquisition transfers savings to increase investment in sectors that are deficient in savings. Market-related interest rates are the mechanism, which fosters the transfers across sectors. In the GS scheme of things, high interest rates have the dual role of increasing aggregate savings and motivating the shift of savings from real estate, consumer durables and other inflation hedges to bank deposits or other liabilities of financial intermediaries, which would increase the supply of credit for investment. The GS approach thus makes the case for high interest rate policies more strongly than the MS framework. From an efficiency point of view, what is crucial is the effect of high real interest rates on the stock shift between unproductive and transferable savings regardless of whether or not savings are interest elastic. The view that high equilibrium real interest rates are growth promoting because they bring about an improvement in the quality of the capital stock is also supported by the work of Galbis (1977). High interest rates reflect the scarcity of capital and therefore foster efficiency in its use. The fact that total real savings may be inelastic to interest rate changes does not detract from this result.
The interaction between macroeconomic variables, the financial sector and its regulatory framework has attracted a lot of attention especially in the wake of recent financial crises. The contagion effect of financial crises has become a major global concern. Problems in the financial sector were identified as the major cause of these crises. This explains the importance that is now attached to financial liberalization and the general health of financial systems in both developed and developing countries. Concerns with the health of the financial sector and their ramifications have led to the development of codes for best practices in the financial sector. The Core Principles for banking behaviour developed by the Basle Committee is an example of standards being set up. International Financial Institutions (IFIs) now place particular emphasis on safeguarding the health of financial sectors. For example the IMF and the World Bank now incorporate financial sector assessment programmes (FSAPs) in the surveillance work.

The review of the literature in this chapter provides a framework for addressing the financial sector problems indicated in Chapter 1. The theoretical predictions of the financial liberalization literature serve as a backdrop for an evaluation of what happened in Zimbabwe. The ingredients of such an evaluation seek to answer the following questions: Did the increase in interest rates associated with financial liberalization lead to an increase in savings and investment? Was financial repression eliminated and did the domestic financial sector become integrated to international financial markets? Did liberalization lead to instability in the demand for money function and problems for monetary control? Was the adoption of indirect instruments of monetary policy successful? Did liberalization worsen inflation and aggravate macroeconomic instability? These issues are the focus of the empirical chapters of this thesis.

The chapter is organized as follows; section 2.1 introduces the issues, section 2.2 identifies the stylized facts about financial structures in LDCs, section 2.3. tackles the issue of the linkages between the financial and real sectors of the economy paying attention to the transmission channels for monetary policy, section 2.4. draws out the various strands of literature on financial liberalization, identifies the pre-requisites for liberalization and reviews empirical evidence and criticisms of the literature and its associated policy recommendations. Issues on monetary control and indirect instruments are raised in section 2.5. while a summary and conclusions on the state of the literature on financial liberalization are presented in section 2.6.

Three main themes emerge in the literature on financial liberalization. First is the financial repression thesis popularized by the work of MS and its focus on the analytical
and empirical relationships between financial intermediation and growth and its recommendations for the removal of distortions. Second is the focus on the prerequisites for successful reforms and the importance of sequencing. The prerequisites include macroeconomic stability and adequate supervisory and monitoring capacity. Emphasis on prerequisites and the adequacy of supervision has been dubbed a post hoc theoretical revision designed to defend the disappointing empirical record of the original financial repression thesis of MS. The third addresses the issue of monetary control and the transition to indirect instruments of monetary policy.

2.2. Stylized Facts about Financial Structures in Developing Countries

Researchers examining economic problems of developing countries often refer to stylized facts about the production structures and other peculiar characteristics which may require different interpretations of the observed phenomena. Dispersions in rates of return of different investments are common place. This is mainly because of the differences in the efficiency of the use of physical and human resources by two disparate technologies (old and modern) existing side by side.\(^{25}\) To varying degrees, financial intermediation is less sophisticated and self-financing is significant. The role played by governments has not been positive in so far as interventionist policies have generated distortions. Distortions such as ceilings on interest rates and the perpetuation of informal financial markets contribute to the malfunctioning of financial markets and an inefficient use of resources. Interest rate controls often result in a mismatch between the demand and supply of funds while the perpetuation of informal financial markets contributes to the segmentation of financial markets.

2.3. Financial sector and the Real Economy

a. Financial Intermediation

Debate about the relationship between the functioning of financial systems and economic growth is not new. The resurgence of interest in economic growth sparked off by work on endogenous growth has brought a sharp focus on the possible impact of the

\(^{25}\) The significance of the coexistence of the old and modern technologies for growth and financial intermediation is illustrated in Galbis (1977).
state of finance on economic growth. The endogenous growth literature following the
work of Romer (1986), Lucas (1988) and Barro (1991) has strengthened the belief in the
role of the financial sector. A number of researchers have articulated the view that
improvements in financial intermediation are a precondition of economic growth
(Bagehot, 1873; Fry, 1978; Galbis, 1977; Gerschenkron, 1962; Goldsmith, 1969; Gurley and
Shaw, 1955; Hicks, 1969; Kapur, 1976; Khatkhate, 1972; Khan and Senhadji, 2000;
Locke, 1691; Mathieson, 1980; McKinnon, 1973; Patrick, 1966; Shaw, 1973; and
Schumpeter, 1912). Without necessarily settling the question of causality, some
researchers (King and Levine, 1993a; Levine and Zervos, 1998; Rousseau and Wachtel,
1998) have shown that the level of financial development is a good predictor of economic
growth.

Others have expressed some scepticism about the role of finance. Among these are
Robinson (1952) who argued that “where enterprise leads—finance follows”, Kuznets
(1955) who viewed financial markets as growing only after an economy has matured and
Lucas (1988) who suggested that “the importance of financial matters is very badly
overstressed”. Improved financial development has also been seen as possibly leading to
slower economic growth (Bencivenga and Smith, 1991; King and Levine, 1993b). This
arises if the higher returns from improved resource allocation depress saving rates
significantly. Neostructuralist critics of financial liberalization, Taylor (1983) and
Wijnbergen (1983) suggested that finance matters in the way financial crises adversely
affect economic growth, macroeconomic stability and trigger stagflation. Stiglitz and
Weiss (1981) are critical of financial liberalization on the grounds that there are market
imperfections and adverse selection, which can generate sub-optimal results.

Banks engage in maturity transformation by simultaneously offering liquidity to
savers and long-term funds to investors. There is a vast literature on banking and financial
intermediation ranging from analyses on the raison d’être of banks to microeconomic
models of banking behaviour. In recent years, the focus has been on information-based
theories of loan commitments, credit rationing, collateral and the bank client relation

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26 De Gregorio and Guidoti (1995); King and Levine (1993); Pagano (1993); and Roubini
and Sala-I-Martin (1992), provide extensive literature on these.
27 Fry (1995); Khan and Senhadji, 2000 and Levine (1992) provide surveys on most of
these.
(Swank, 1996). Relative to other types of firms, banks are peculiar for the following reasons:\(^{28}\)

(a) they accept and transform risks, provide liquidity and facilitate transactions and their specialization in information gathering and analysis enables them to perform their role as intermediaries between lenders and borrowers;

(b) the inter-bank market (the system whereby banks hold substantive positions with each other) makes banks highly susceptible to failures of other banks in the system and this has economy-wide effects; and

(c) banks' behaviour has important implications for the monetary authorities' ability to influence the real sector through monetary policy because of the determination of the monetary policy transmission mechanism.

The literature on banking falls into two broad categories with some elements straddling both categories. In taking the existence of banks for granted, the first category is similar to the early views about the significance of the financial sector that are discussed above. This approach focuses on specific aspects of bank operations. The second category examines the reasons for the existence of banks and the conditions under which they conduct intermediation efficiently. This is similar to the functional approach to the study of the finance-growth nexus.

In the functional approach, the financial system is considered a "real" sector that researches firms and exerts corporate control, facilitates risk management, exchange and resource mobilization. This approach focuses on the relationship between economic growth and the quality of services provided by the financial system. The financial system emerges to alleviate the problems of information and transactions frictions. The corollary of this is that there would be no need for a financial system in an Arrow-Debreu framework in which there are no information or transaction costs.

With perfect information, it would be redundant to have a financial system that incurs expenses in researching projects, assessing managers, designing ways to reduce risk

\(^{28}\) See Diamond and Dybvig (1983) for an overlapping—generations model to illustrate the importance of the financial sector in maturity transformation and risk management and Green and Jovanovic (1990) on the role of the financial system in pooling funds and acquiring information.
management and facilitating transactions. The primary function envisioned for the financial system is to facilitate resource allocation across space and time under uncertainty. Capital accumulation and technological innovations are the channels through which the financial system allocates resources, mobilizes savings, facilitates trade, exerts corporate control and facilitates risk management. As observed by Stiglitz (1994) financial markets are beset by market failure in dealing with intertemporal trade, risk and information.

The key themes among the theories, which focus on the fundamental basis of banking, are notions of financial intermediation, information asymmetry, transaction costs and market signalling. Credit rationing is one of the risk management theories that features prominently in financial liberalization discussions. It typically occurs when the demand for loans exceeds loan supply at the prevailing interest rates. In Keeton's (1979) typology, rationing implies that borrowers receive curtailed loans (type I rationing) or some loan applicants are turned down (type II rationing). A distinction is made between equilibrium and dynamic rationing in the literature and recent studies on rationing focus on the former. Stiglitz and Weiss (1981) provide an authoritative analysis of credit rationing. The two ways in which the loan interest rate affects the potential risks of a bank's loan portfolio are that, raising the rate above some critical level chases away the safest borrowers (adverse selection) and a higher loan rate encourages borrowers to undertake riskier projects (incentive effect). Credit rationing challenges the notion that financial liberalization results in Pareto efficiency in financial intermediation.

Several types of risks are inherent in banking and these include credit or default risk, funding or withdrawal risk, interest risk, price and exchange rate risk. The first two are self-explanatory. Interest rate risks arise when a bank has to fund its long-term lending at interest rates that exceed those that it receives. This is due to maturity mismatch, which is typical of all banks. Price risk arises from unanticipated changes in the valuation of securities or real estate holdings of a bank. Exchange rate risks arise from the open positions of banks.

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29 See Levine (1997) for details.

30 Swank (1996) categorizes theories on banking behaviour into the following groups: a) risk management theories; b) portfolio models; c) imperfect-market models; and d) real resource models.
There are divergent views on the nature of the relationship between financial variables and the real sector on one hand and the transmission mechanisms on the other. Financial liberalization is postulated to impact economic growth and efficiency through three channels: (a) the volume of financial intermediation, (b) the real rate of interest representing the cost of capital, and (c) the efficiency of the financial sector. This places great importance on domestic savings mobilization efforts and the enhancement of financial intermediation to facilitate the transfer these savings into productive investments. The success or failure of financial intermediation depends on the macroeconomic environment and the broad policy framework in which the financial sector operates.

The literature on financial intermediation falls into two broad categories. One category emphasizes the effects of wealth and substitution on velocity and the demand for money, while the other focuses on the effects of intermediation on the demand for money. Often related to the discussion of substitution is some concern about the effectiveness of monetary policy. One of the contentious issues in the discussion on intermediation concerns the ability of the monetary authorities to control a particular stock of money in a context where the financial system can produce a wide range of substitutes through financial innovation. The possibility of substitution between money and other assets is seen as undermining the effectiveness of monetary policy in bringing about desired changes in ultimate targets. This may imply that for any desired change, the monetary authorities would have to introduce larger changes in the magnitudes of instrument variables.

The possibility of substitution blurs the distinction between money and other assets. While the banks and the public have to hold the nominal stock of outside or base money, the public can adjust its deposit holdings (inside money) held at banks and other financial institutions. Excess supply of outside money can only be reduced by inducing a rise in the prices to a level, which restores the equilibrium between desired and actual holdings of outside money (real balance effect).

b. Elements of the Monetary Transmission Mechanism

In classical theory, monetary changes have no permanent effects on the real wealth or productivity of an economy. The function of money in that framework is to determine the price at which exchange will take place. Real factors such as the level of output and the rate of interest are determined by an economy's factor endowments, techniques of production, time preference of the population and the productivity of increments to the
capital stock. Although the short-term effects of monetary influences on the real economy are recognized, the notion of long-run neutrality of money is upheld. Hume observed that monetary changes affect the economy through direct and indirect mechanisms. The direct mechanism concerns the effect of increased wealth on expenditure. This increase in wealth disturbs the relationship between money and real assets in individuals' portfolios. It is the attempt to restore this relationship that sets an economy-wide adjustment process. Relative flexibility on the part of wages and prices is a crucial assumption for the restoration of the full employment equilibrium.

In the Humean framework, it was recognized that an inflow of money from abroad would stimulate trade. The initial effects of such an inflow would be primarily on economic activity. Subsequently, the effects on prices would gradually dominate until prices had risen in proportion to the increase in money stock and economic activity had reverted to its initial level. The indirect mechanism operates through interest rate changes in financial markets and the response of potential borrowers to easier borrowing terms should this be the effect of the interest rate changes.

In his analysis of the indirect transmission mechanism in the context of financial intermediation, Wicksell (1906), distinguished between the market rate of interest (RM) and the natural or normal rate of interest (RN). The market rate is the rate charged by banks for loans while the normal rate is the rate of interest that would equate the demand and supply of capital. Equilibrium conditions require that the market rate of interest and the normal rate of interest be equal.

\[ RM = RN \] (2.1)

If this condition is not fulfilled, adjustments will take place to restore the equilibrium. For example if \( RN > RM \), then entrepreneurs will increase their borrowing from the banks to take advantage of profit opportunities. The resulting increase in investment and induced expenditures will stimulate economic activity and bid up prices. The expanded lending activities of the banks will deplete their reserves and threaten their liquidity and thus make them raise interest rates until the market rate is equal to the normal rate. The same processes would occur in the reverse if \( RN < RM \). The relative flexibility of prices is a major plank of this analysis. This is in sharp contrast to the Keynesian framework in which wage rigidities lead to money influencing real variables. In Keynes' analysis, the liquidity trap sets a floor to the nominal rate of interest. The inadequacy of investment is due to the attractiveness of holding money as an asset instead of holding
productive capital. The opportunity cost of holding money is very low hence the preference to hold it as an asset.

In the IS/LM framework, an increase in money supply lowers the rate of interest. This tends to increase investment and so increase the level of economic activity through the multiplier effect. The multiplier effect is somewhat dampened by the feedback from the higher level of output to the demand for money and the level of interest rates. The interest rate elasticity of demand for money and the interest rate elasticity of aggregate expenditure are the determinants of the extent of the impact of monetary changes on the level of economic activity. This framework emphasizes the indirect transmission mechanism and regards the rate of interest strictly as the cost of borrowing.

The anticipated marginal productivity of capital or the expected flow of services and the rate at which the services are discounted determine the price, which an asset will fetch. The interest rate on bonds or some rate close to it is the rate at which the services are discounted. Neo-Keynesians emphasize this particular aspect of the transmission mechanism. In the work pioneered by Tobin, neo-Keynesians adopt the notion of the supply price of capital as the relevant interest rate as opposed to the notion of interest rates on bonds. The supply price of capital is defined as the rate at which the public would be willing to hold the existing stock of capital valued at current prices. Through monetary policy measures, the monetary authorities try to influence the supply price of capital. The neo-Keynesian policy approach focuses on a variety of financial instruments as opposed to some aggregated notion of financial capital. Physical capital is treated as a single aggregate with a common yield. Open market operations are usually the source of monetary expansion or contraction in both Keynesian and Neo-Keynesian models.

Concern with the rates of return on financial assets brings into sharp focus the role of interest rate policies. A distinction is often made between cash-balance mechanics and interest rate mechanics of adjustment to monetary disturbances (Johnson, 1972). The former concerns the question as to whether the influence of money on the economy operates through a desired relation between income and interest rates on the one hand and

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31 The transmission mechanism would be as follows: an increase in the quantity of money in circulation leading to excess supply of money relative to demand ($M^s < M^d$). Agents offload the excess cash by buying bonds. The prices of bonds rise because of increased demand. This increase in the price of bonds pushes down interest rates. The expectation is that the fall in interest rates will lead to increased investment and output via the multiplier.
people's cash balances on the other with changes in the rate of spending being the modality of adjustment. The latter concerns the question as to whether it operates through the influence of money demand and supply on interest rates with adjustment occurring through changes in investment and saving.

The existence of various monetary aggregates attests to the monetary authorities’ continued search for monetary concepts that have stable relationships with the real economy over time. The search is a dynamic one in which agents in the financial sector use financial innovation to conduct financial intermediation in way that may be less amenable to official controls. This is especially the case when such innovation is designed to circumvent administrative controls and other distortions.

While a broad consensus has emerged on the nature of the monetary transmission mechanism in industrial countries, the same cannot be said about developing countries where the peculiarities of financial sectors in these countries hinder the operation of certain channels. As discussed earlier, some of the peculiarities include: the existence of a narrow range of financial assets; absence of organized security markets; the existence of controls on asset mix between foreign and local currencies; the emergence of parallel foreign exchange and informal financial markets; interest rate controls; and other forms of financial repression. The outcome of monetary policy actions is therefore less predictable than might be the case in a situation where financial markets are highly developed.

Monetary and the credit channels are the two basic avenues of monetary policy transmission that are discussed in the literature. The former enjoys more conventional support. An understanding of these channels is important for measuring the thrust of monetary policy actions. For example, if it were the monetary channel that is believed to be operational in a particular context, then changes in money market interest rates would be a good indicator. However, if the credit channel were operational, then one would have to examine relative prices or relative quantities (the ratio of bank loans to nonbank financing). This entails an examination of bank balance sheets in order to identify the amount of credit extended to various sectors of the economy. The variables in the credit channel provide policy makers a better handle on the impact of financial variables on aggregate demand and the implications for investment and output. Under situations of credit rationing, interest rate signals are a poor guide to the impact of financial variables on the real economy.
The interesting question from a policy perspective is which of these channels to focus on and whether it provides good information. There is considerable debate on money versus credit among economists, with some generating supporting evidence for the credit channel (Bernanke and Blinder, 1992; Dale and Haldane, 1993; Friedman and Kuttener, 1992; and Kashyap, Stein and Wilcox, 1993) and others giving evidence to challenge it (Romer and Romer, 1993; Konishi, Ramey and Granger, 1993; Miron, Romer and Weil, 1993; and Ramey, 1993). The apparent disagreement can be overcome by appealing to the fact that there is merit in paying attention to both the supply and demand sides of bank operations. As the conventional focus on the money channel is a legacy of the strictures of the IS/LM, it needs to be supplemented by the credit channel in order to enrich the analysis in a framework that merges the micro and macroeconomic dimensions of monetary policy.

The divergent views held by advocates of the financial repression thesis and neostructuralists attest to the fact that there is no general consensus on the impact of financial liberalization in the form of letting the market determine interest rates, reducing reserve requirements and unifying foreign exchange markets. Those operating in the MS tradition see no reason for the freeing of interest rates to be contractionary while the neostructuralists view such a policy action as stagflationary. The former group views the direct effect of the controlled bank deposit interest rate as the primary channel of transmission whereas the latter group stresses the effects which are transmitted to interest-sensitive components of demand and supply through the loan interest rate. Montiel (1990) identifies wealth effects induced by changes in the degree of financial repression and changes in the economy's net foreign assets as additional channels for the transmission mechanism in developing countries.33

As explained in Levine (1997), capital accumulation and technological innovation are the two channels through which each of the identified functions of finance may affect economic growth. Two classes of growth models explain the ways on which the two channels work. Growth models by Romer (1986) and Lucas (1988) use capital externalities or capital goods subject to constant returns to scale and without nonreproducible factors to generate steady-state per capita growth. The financial system

32 Kashyap et al (1993) provide a review of the literature on these issues.

33 The channel induced by financial repression operates through changes in the premium in the free exchange market and expectations of future inflation.
affects capital accumulation either by altering the saving rate or by reallocating saving among different capital producing technologies (Levine, 1997). The technological innovation channel is illustrated in growth models which focus on the invention of new production processes and goods (Romer, 1990). The alteration of the rate of technological innovation is the avenue through which the functions of the financial system affects steady state growth.

c. Financial Repression—Forms and Rationale

The situation of financial repression is generally characterized as one in which a government taxes or distorts the capital market through interest rate controls and/or credit allocation and so impedes efficient financial intermediation and economic growth. A broader perspective on financial repression takes into account the fiscal dimensions by linking financial repression with inflation tax and seigniorage. Under financial repression, interest rates do not perform an equilibrating function between savings and investment decisions. The main interest rates are curbed at levels that are significantly lower than market clearing rates. This is often done through legally imposed ceilings or floors on lending and deposit rates.

It is noteworthy that financial sector and exchange regime liberalization reduce the scope for generating seigniorage. The emergence of other financial assets renders the demand for money more elastic to returns on these other financial assets. The liberalization of the trade and exchange regimes eliminates rationing and thus the need for speculative balances by economic agents. Additionally, the removal of exchange controls eliminates the implicit tax on exports and offers scope for currency substitution the effect of which would be to reduce the seigniorage tax base. This implies that opportunities for raising higher amounts of revenue from seigniorage tend to be greater when there are limits on the portfolio of domestic financial assets and tight exchange controls are in place.

Forms of Repression

There are at least six types of financial sector controls, which may generate distortions and tax on financial intermediation. These are macroeconomic, allocative,
structural, prudential, organizational and protective controls. The controls are not mutually exclusive since the actual measures deployed may service more than one type of control. Macroeconomic controls are directed towards the maintenance of internal and external equilibria. Falling under this category of controls are reserve requirements, selective credit allocation mechanisms, interest rate ceilings and restrictions on foreign investments. It is often believed that strict control of the banking system accords monetary authorities better control over money supply. Not least important is the fact that the absence of efficient mechanisms for indirect instruments of monetary control encourages the adoption of direct controls as the soft option.

Allocative controls seek to direct financial resources towards projects and sectors that financial institutions shy away from either because of risk aversion or long gestation periods. The measures typically include selective credit programmes, compulsory investment requirements and preferential taxes. These measures are often viewed as compensating for externalities generated by market failure. Structural controls govern the entry of new institutions and often reinforce market segmentation through the imposition of limits on the range of activities that different institutions are permitted to undertake and set limits on the size of individual institutions.

Although prudential, organizational and protective controls are a form of intervention, they should not be confused with regulatory aspects that create or safeguard financial repression. These controls are meant to protect the public’s deposits in the financial institutions as well as safeguard the soundness of the financial system and thereby bolster the public’s confidence in the system. Measures under these types of controls include authorization procedures, capital requirements, and limits on foreign currency exposure, reserve requirements, cash ratios and reporting requirements. Organizational controls seek to promote the disclosure and flow of information among market participants with a view to promoting efficiency and minimizing such problems as adverse selection. Protective controls provide protection to users of financial services and address the problems generated by informational asymmetry.

Rationale

The commonly cited justifications for financial repression are the ability to: extract seigniorage; keep cost of credit low and encourage investment; channel subsidized credit to preferred sectors; directly control money supply through direct instruments such as high reserve requirements; contain the cost of servicing public debt; facilitate planning;
compensate for externalities generated by market failure; and enforce anti usury laws. The inability of many developing country governments to satisfy their inter-temporal budget constraints with conventional tax revenue is often cited as a reason for relying on inflation tax through financial repression as a strategy to reduce interest costs (Agenor and Montiel, 1996; Brock, 1989; Fry 1997; and Giovannini and de Melo, 1993).

Under conditions of financial repression, the financial sector is viewed as a source of cheap resources to finance government deficits. Fry (1995) suggests that financial repression has often been an unintended by product of financial restriction. Governments can extract significant seigniorage from financial institutions and instruments and on that basis often use restrictions to discourage private bond and equity markets from which seigniorage can not be easily extracted. High reserve requirements, interest rate ceilings, foreign exchange controls and compulsory holdings of government stocks (stifling of the development of domestic capital markets) are relatively cheap sources of finance for the public sector and they can be tapped without risking higher levels of taxation, inflation or interest rates. A wide range of fiscal and legal frameworks exists to stunt the growth of efficient capital markets, which would otherwise undermine the public sector’s ability to rely on cheap sources of finances. Among the disincentives stifling the development of private bond and equity markets are transaction taxes, stamp duties, capital gains taxes and restrictive legal frameworks. The higher the proportion of funds transferred from the financial system to the public sector, the more successful the financial restriction.

Through sectoral or selective credit policies, governments can effectively subsidize interest rates on loan rates to preferred activities, which may have high social returns. Thus in order to encourage private investment, governments can deploy many of the same techniques used to reduce the cost of financing budget deficits. The success of selective credit policies hinges on the ability to effectively segment and restrict financial markets. This explains the perpetuation of fragmented financial markets in some countries. The absence of this segmentation and restrictions would create many opportunities for arbitrage that would result in the rerouting of subsidized credit to uses with the highest private returns.

36 St.Thomas Aquinas is credited with establishing the moral grounds for objecting to usury laws. He argued that payment of interest on money is morally illegitimate because money is unproductive.
Differential tax treatment of interest income according to residency or according to economic sectors, unremunerated legal reserve requirements and operating costs influence the level and structure of interest rates. These factors often lead to increases in spreads between loan and deposit rates. Financial markets are relatively narrow and shallow in developing countries. They also tend to be characterized by monopolistic or oligopolistic structures, which preclude the effective operation of interest rates as guides for saving and investment decisions. Oligopolistic financial markets may set excessively high lending rates and enjoy large spreads between deposit and lending rates to the detriment of some small borrowers and some sectors. Controlling the level of interest rates under these circumstances could be viewed as a way of offsetting distortions generated by the market imperfections deriving from oligopolistic market structures. This is essentially a second-best argument in favour of regulated interest rates.

Keynes' liquidity preference, Tobin's monetary growth model, deficit financing and planning models based on fixed input-output coefficients also provide some of the economic rationales for imposing interest ceilings. Keynes' liquidity trap implies that excessive liquidity preference destroys the incentive to save and thus impedes growth. In the Keynesian framework, the disequilibrium that emerges from the deficiency of investment is corrected by reducing the level of income. In this scheme of things, the combination of an expansionary monetary policy and a low interest rate ceiling is expected to foster an increase in investment. Tobin's model of money and growth views a higher return on capital relative to the return on money as promoting growth. The corollary of which is that financial repression increases capital/labour ratios and growth by reducing the attractiveness of holding money relative to productive capital.

Heavily indebted governments that rely on bank financing to cover their deficits prefer to keep the cost of servicing such debt low. In addition to interest rate fixing through administrative fiat, they can also keep the cost low by crowding out the private sector from competing for the available funds. In development planning models, selective or directed credit policies are deployed to implement planned sectoral investment programmes derived from input-output matrices. In these circumstances, credit is allocated on nonprice criteria and project selection is not subjected to rigorous criteria that would normally apply in a competitive environment. The controlling of interest rates is often related to the existence of other economy-wide controls pertaining to investment, production, prices, foreign exchange transactions and foreign trade. Loan rate ceilings have often been used to encourage import-substituting industrialization. The low interest
rate policy and the comprehensive control of credit allocation which accompanied Japan's rapid post World War economic growth is often cited as an argument for controlling interest rates at low levels.

Other arguments for controlling interest rates derive from the belief that high interest rates result in lower investment and growth and that they may be inflationary either through the direct impact on costs or the indirect effect through expectations. The argument about the potential stagflationary effects of high interest rates put forward by structuralists could be viewed as providing an intellectual argument for continued financial repression, read in this context as fixing interest rates at low levels and below market rates.

2.4. Strands of Literature on financial liberalization

Disillusion with the focus of traditional monetary policy on stabilization has been catalytic in the search for alternative approaches, which give due consideration to development, orientated monetary policy. By taking stock of the structural peculiarities of financial sectors in developing countries, MS address the issue of a development orientated monetary policy.

a. Financial Repression Paradigm (McKinnon-Shaw) and Extensions

The approach focuses on financial repression and the resulting factor and price distortions. It is rooted in the classical view of savings as determining the level of investment. The predominant tendency of macroeconomic models to focus on the stock of money as the most relevant aggregate in the relationship between real output and the financial sector is challenged.

Figure 2.1. illustrates the MS hypothesis which is premised on the following assumptions:

- a saving function that is a positive function of both the real rate of interest on deposits and the real rate of growth in output;

- a negative relationship between the effective real loan rate of interest and investment and a positive relationship between economic growth and investment;

- a real interest rate that is below its equilibrium because of the nominal rate being administratively fixed by the government and;

- nonprice rationing of loanable funds.
MS focuses on ceilings on deposit and/or loan interest rates as the manifestation of financial repression. The effects of real interest rates on saving and investment influence economic growth indirectly. In figure 2.1 the vertical axis measures real interest rates and the horizontal axis measures saving and investment. The lower the real rate of interest (r), the higher the level of investment, hence the investment function has a negative slope from the left to the right in the diagram. This idea of investment being a negative function of the real interest rate can be expressed as:

\[ i = f(r) \quad i < 0 \]  

(2.2)

The upward sloping savings functions denoted \( S(g_1), S(g_2) \) and \( S(g_3) \) are associated with given rates of economic growth \( (g_1, g_2, g_3) \) where \( g_1 \) is smaller than \( g_2 \) and so on \( (g_1 < g_2 < g_3) \). Saving is a positive function of both the rate of interest and the rate of growth of income \( (g) \) \( (S = f(r, g); S_r > 0; S_g > 0) \). Ceilings on interest rates are depicted as \( r_1 \) and \( r_2 \) in figure 2.1.

If equilibrium growth were at growth rate \( g_3 \) where there are no ceilings on interest rates, \( E \) would be the equilibrium where the corresponding equilibrium levels for the interest rate, saving and investment would be \( r^* \) and \( I^* = S (E = r^*, I^* = S^*) \). With interest ceiling \( r_1 \) and growth rate \( g_1 \), \( A \) would be the equilibrium point and the corresponding investment and saving would be \( I_1 \). At this equilibrium point, interest rates are below their equilibrium level \( (r^*) \). If the ceiling only applies to deposit rates, banks can charge \( r_3 \) interest rate and their margin would be the distance \( r_3 - r_1 \). However, governments normally impose ceilings on both deposit and lending rates because they want to promote investment. If the ceiling \( r_1 \) is applied to both savings and lending rates, investment demand measured by the distance \( AB \) is left unsatisfied and this results in credit rationing. Unsatisfied investment demand \( AB \) includes projects with high rates of return but are shunned by the banks because of their riskiness.

In figure 2.1, the impact of partial liberalization can be examined by raising the interest rate ceiling to \( r_2 \), which is still below the equilibrium rate \( (r^*) \). This increase in the interest rate raises the efficiency of investment. The rate of growth rises to \( g_2 \) and the saving function shifts to \( S(g_2) \) as does investment to \( I_2 \). This action reduces credit rationing to the distance measured by \( CD \), which is smaller than distance \( AB \) that is associated with a lower interest rate ceiling.
Once full liberalization is allowed by the movement to the higher interest rate $r^*$, credit rationing disappears. It is worth noting that if the real deposit rate is low because of high inflation, high legal reserve requirements also lead to credit rationing. Reserve requirements are an implicit tax on financial intermediation. Part of the burden of reserve requirements is often passed on to depositors in the form of reductions in some bank services, commissions and fees in order to maintain desired spreads.

Interest rate ceilings could reduce potential saving in so far as they promote current consumption. Ceilings are inimical to financial intermediation in that those with excess savings would not be encouraged to deposit their money in financial institutions where the rates of return are low. They would rather lend directly to low yielding investments. Financial repression reduces the overall availability of credit because of its tendency to diminish the desire to hold money and other financial assets. Under interest rate ceilings, directed lending does not lead to an increase in the average return on what limited investment is financed by the available credit. Some researchers have argued that financial...
repression not only encourages economic dualism in developing countries but also worsens income distribution (Cho, 1984; Galbis, 1977; and McKinnon, 1973).\(^{37} \)\(^{38} \)

The MS hypothesis suggests that distortions of financial prices including interest rates and exchange rates impede efficient financial intermediation, reduce the real rate of growth and the real size of the financial system relative to non-financial variables. In such situations, interest rates are kept low and are usually negative in real terms. The fragmentation of money and capital markets and the dispersal of rates of return retards growth. Therefore an essential element in the development of money and capital markets is their integration and attainment of rates of return that are not widely dispersed. MS conclude that the removal of interest rate ceilings and other restrictions facilitates economic growth by ensuring greater efficiency in the allocation of capital.

While arriving at the same conclusion, McKinnon (1973) and Shaw (1973) differ on the transmission mechanisms of the real interest-savings-investment and economic growth nexus. McKinnon analyzes the impact of real deposit interest rate on saving, investment and growth through the complementarity hypotheses which views money and physical capital as complements. The analysis is premised on two assumptions that all economic units are confined to self-financing and that investment expenditure is lumpy and requires prior accumulation of money balances. Thus, deposits are crucial in encouraging self-financed investment. A lowering of the opportunity cost of holding money by increasing real deposit rates increases the savings needed for self-financed investment.

Shaw (1973) adopts the debt intermediation view of financial intermediaries. According to this view, financial intermediaries are able to offer better interest rates because of the scope to reduce costs through economies of scale and risk diversification. Investors are not limited to self-financing as in the complementarity hypothesis. Higher deposit rates are expected to increase deposit mobilization by banks and this in turn is supposed to increases loanable funds.

\(^{37} \) Krugman (1978) argues that financial repression can worsen income distribution but need not necessarily cause dualism.

\(^{38} \) Greenwood and Jovanovic (1990) suggest that the worsening, if short lived, of income distribution can be a feature of financial development even in instances where there is no repression. Thus financial repression can be viewed as an additional source of income inequality.
Despite the differences of emphasis, the two approaches share a common vision. This revolves around recognition of the nonpeculiarity of money’s traditional functions such as medium of exchange and store of value in an LDC context. However, its function as a conduit of resources from savers to investors is more central to an understanding of its contribution to economic development in this context. Capital theoretic perspectives of economic growth suggest that rapid economic growth requires larger and more efficient amounts of investment, which in turn depend on larger savings being efficiently utilized. A less attractive rate of return results in a smaller amount of savings being mobilized. This is especially the case in situations where the only known use of saving is self-investment or lending in a very limited market. Scarce and illiquid financial assets characterize this market. Juxtaposed to this situation is the existence of potentially high-yielding investments which are not undertaken because of the unavailability of funds. Such situations are characterized by the preference for less productive but more familiar and less risky investments hence the absorption of the limited funds available by these investments.

Preoccupation with aggregate savings and investment has diverted attention due importance to the question of the efficiency in the utilization of available savings. Economic units endowed with managerial skills and initiative are usually not the ones with surplus resources to invest. The setting up of a mechanism to transmit savings of sectors with surplus to sectors with deficits is necessary for the process of development.

Contrary to the expectation that low interest rate policies encourage investment and growth, these policies have a tendency to constrain the development of financial instruments and markets as well as the efficiency with which resources are allocated. Accordingly, the thrust of financial policy should be the removal of constraints and distortions through the liberalization of repressed financial markets. In contrast to the strictures in neoclassical monetary theory, complementarity between money and capital is a crucial assumption of McKinnon’s analysis.

In neoclassical growth models, there is substitution between real money balances and real capital accumulation. In this construct, real money balances consist only of outside money, the saving rate is assumed to be constant and the productivity of money is ignored. None of these assumptions is valid. On the strength of the recognition of the function of money as a conduit of real resources from savers to investors, this assumption survives the general criticisms extended to the kind of strictures imposed by McKinnon for the model’s applicability to LDCs. Among these other strictures are assumptions about
production units' sole dependence on self-financing, the lumpiness of investment and the non-involvement of the government in any savings investment activity. Experience shows that these assumptions are not necessarily tenable.

If one accepts the complementarity assumption, it is easy to see why it is possible to have an increase in money holdings as well as an increase in capital and labour. The holding of money balances implies the surrender of the potential and immediate command over capital and labour, which it would bestow on its owner. Through financial intermediation, the increased money holdings lay the basis for increased investment through a higher accumulation of liabilities by financial intermediaries. This is the "inside" component of money to which neoclassical models' money capital substitutability argument does not apply in any event; and it is precisely this component (deposit money) that would grow in response raising the real rate of return on deposits (Coats and Khatkhate, 1984). One of the implications of complementarity is that as long as the rate of return on money is less than the rate of return to the most productive use of capital, raising it is not expected to undermine or stifle investment.

Formal models within the MS framework suggest that the growth maximizing deposit rate is the competitive free-market equilibrium rate. This rate can be raised by paying the competitive loan rate on required reserves or by lowering the rate of inflation. The payment of a competitive loan rate on required reserves increases the supply of credit and the rate of economic growth without affecting the loan rate. A lower inflation rate implies a lower opportunity cost of holding non-interest-earning reserves.

Extensions to the MS model focus on the effects of financial liberalization on the quantity (Kapur, 1976 and Mathieson, 1980) and quality of investment (Galbis, 1977). The discussion below highlights the relevant aspects of Kapur (1976) and Mathieson (1980) on the effects of liberalization on the quantity of investment and of Galbis (1977) on the effects on quality. Before highlighting the salient features of these models, it is worthwhile to draw out their central message. Starting from the notion that deposit rates are fixed by fiat at below equilibrium, the demand for money function is postulated to be determined by the real deposit rate. The real deposit rate is the difference between the nominal deposit rate and the rate of inflation. In the steady state, actual inflation is equal to expected inflation. The higher the rate of inflation under these conditions the lower the demand for money in real terms. The reduction in the demand for real money balances translates into a reduction of both assets and liabilities of the financial system. The lower real deposit rate associated with this situation fosters flight to safety in the form of inflation hedges.
Economic growth becomes a casualty of the reduced availability of financial resources to fund productive investment.

The underlying view of the MS model and its extensions is that a competitive free market equilibrium deposit rate maximizes economic growth. However, market determination of deposit rates does not guarantee escape from financial repression and low economic growth especially in the context of high legal reserve requirements (an implicit tax on financial intermediation) and inflation. As shown in some of the models, unremunerated reserve requirements have similar effects to interest rate controls. The interesting policy implication is that the increase in the deposit rate need not imply an increase in the cost of credit especially if it is accompanied by a reduction in reserve requirements or payment of competitive interest rates on them.

Kapur and Mathieson's formulation of financially repressed models applicable to labour surplus economies are similar in the nature of the production function used, constant ratios in the combination of fixed and working capital and a constant capital output ratio. According to their model, financial liberalization affects only the quantity of investment. The production function used is of the form:

\[ Y = \sigma K \]  

(2.3)

where \( Y \) is GNP at constant prices, \( K \) is total capital and \( \sigma \) is a constant capital output ratio. If the proportion of utilized fixed capital relative to total capital used is \( \alpha \), then the ratio of working capital is \( 1-\alpha \). Empirical evidence seems to suggest that financial development has a greater impact on the quality rather than the quantity of investment and thus the notion of a constant output/capital ratio is not sustainable. In line with the assumption of capacity underutilization, working capital is considered the binding constraint on the level of output. A fixed fraction \( \theta \) of the cost of using up working capital in real terms is financed through bank credit. It is assumed that only bank credit is used to finance all net additions to capital. The net increase in total utilized capital in real terms can be presented as follows:

\[ \Delta K = \frac{1}{1-\alpha} \frac{\Delta CR - \Delta P \theta (1-\alpha)K}{P} \]  

(2.4)

---

39 This section draws from Fry (1988).
where \( \Delta P \theta (1-\alpha)K \) represents additional nominal value of bank capital needed to maintain working capital at a constant level in real terms, \( \theta \) is a fixed fraction of the cost of replacing depleted working capital in real terms, \( \Delta P \) is the change in the price level, and \( \Delta CR \) is the nominal increase in bank loans.

From the above characterization of the net increase in capital, it is clear that changes in the supply of bank credit in real terms, affects the rate of economic growth. Linking the supply of bank credit (\( \Delta CR \)) above and assuming a fixed required reserve ratio \( C/M \) equal to 1-\( q \) and no excess reserve holdings, the ratio of credit to money (\( CR/M \)) is \( q \). The rate of growth of bank loans and deposit money are the channels through which the central bank controls the rate of growth of nominal high-powered money and this can be shown as:

\[
\frac{\Delta C}{C} = \frac{\Delta CR}{CR} = \frac{\Delta M}{M} = \mu
\]  
(2.5)

Following Fry and substituting \( \pi \) for \( P/P \), \( \mu \) for \( \Delta M/M \) and \( qM \) for \( CR \) and putting them in equation 2.4, we get:

\[
\Delta K = \frac{1}{1-\alpha} \left[ \mu q \left( \frac{M}{P} \right) - \pi \theta (1-\alpha)K \right]
\]  
(2.6)

Defining the constant output/capital ratio as:

\[
\frac{Y}{K} = \sigma
\]  
(2.7)

and economic growth respectively as:

\[
\frac{\Delta K}{K} = \frac{\Delta Y}{Y} = \gamma
\]  
(2.8)

we get

\[
\gamma = \mu \frac{M}{PY} \cdot \frac{\sigma q}{1-\alpha} - \pi \theta
\]  
(2.9)

which shows that the rate of economic growth is affected positively by the rate of monetary growth (\( \mu \)), the output/capital ratio (\( \sigma \)), the ratio of loans to the stock of money (\( q \)) and the ratio of utilized fixed capital to working capital (\( \alpha \)) and is negatively affected by the velocity of circulation (\( M/PY \)) and the fraction of bank financed replacement working capital (\( \theta \)). The higher the reserve requirement (1-\( q \)), the lower the rate of economic growth. Equation 2.9 is a form of the inflation tax expression converted into a relationship between monetary expansion and growth and the term \( \mu(M/P) \) represents real
revenue from inflation while the term \( \pi \Theta \) shows the cost of inflation to the banking system in terms of additional finance to replace depleted working capital.

The supply of bank credit is identified as an important determinant of economic growth. Credit supply is in turn determined by real money demand, the rate of monetary expansion, the ratio of loans to money and the financing proportion (\( \Theta \)). Both Kapur and Mathieson adopt a version of the Cagan (1956) money demand function, which is used in the literature on inflation tax:

\[
\frac{M^d}{P} = Y \cdot e^{\alpha(d, \pi e)} \tag{2.10}
\]

where \( \frac{M^d}{P} \) are desired holdings of real money balances, \( \pi e \) is expected inflation and \( d \) is the deposit rate of interest. In a two-asset portfolio model of deposits and tangible assets, which are held as inflation hedges, it is reasonable to constrain the coefficients of \( d \) and \( B^e \) to be equal and cancel each other out. Through the assumption of unit income elasticity of demand for money, expected inflation and inflation are equal (\( \pi e = \pi \)). The conclusion arrived at is that in the steady state, the rate of inflation (expected inflation) is equal to the difference between the rate of change in the money stock and the rate of change in real output:

\[
\pi e = \mu - \gamma \tag{2.11}
\]

or (\( \pi e = \pi \)) = \( \mu = \frac{\Delta M}{M} - \gamma = \frac{\Delta K}{K} = \frac{\Delta Y}{Y} \tag{2.12}
\]

In the model developed by Kapur (1976), rates of monetary growth and economic growth determine the rate of inflation in the long run. Three reasons are presented for the nonneutrality of money on economic growth and these are:

(i) the fixed nominal deposit rate of interest (\( d \)) ensures that real money demand and hence real credit supply both change when the inflation rate changes;

(ii) the required reserve ratio imposes an effective tax on financial intermediation which increases as inflation increases; and

(iii) all net working capital investment is financed by bank credit, while only a fraction of replacement working capital is financed by banks (Fry, 1988 p.33).
The real deposit rate of interest is an important determinant of money demand in real terms hence real money demand declines when inflation rises and the nominal deposit rate remains unchanged. An increase in the deposit rate of interest increases the real money demand and through it, the real supply of bank credit. The policy conclusion arising from this perspective is that an increase in the nominal deposit rate of interest towards its competitive level will enhance growth. Even with a competitively determined nominal deposit rate of interest, an increase in inflation can lead to a decline in the real deposit rate and real money demand. This is because of the imposition of legal reserve requirements the absence of which could mean zero banking costs. In the absence of legal reserve requirements, the following competitive relationship between nominal deposit and loan rates obtains:

\[ d = ql \]  

(2.13)

where \( l \) is the nominal loan rate of interest and \( q \) is the ratio of credit to money.

In the context of excess supplies of labour and fixed capital, the real return on working capital investment (\( r^* \)) is:

\[ \frac{Y - (1-\alpha)K}{(1-\alpha)K} \]  

(2.14)

or \[ \frac{\sigma - (1-\alpha)}{1-\alpha} \]  

(2.15)

The return on working capital is positive provided output (\( Y \)) is greater than the amount of capital ((1-\( \alpha \)) \( K \)) used in its production. A positive return implies that the output capital ratio is greater than the ratio of working capital to total utilized capital (\( \sigma > 1-\alpha \)). In the steady state where \( \pi^e = \pi \), there is an infinitely elastic demand for credit at a nominal loan rate of \( r^* + \pi \). The competitive loan rate is \( r^* + \pi^e \), which maximizes real money demand, the real supply of credit and the real rate of economic growth for any given required reserve ratio and the rate of monetary expansion. From this, it is possible to see how the policy recommendation of the early vintages of the financial repression paradigm of removing interest ceilings was expected to enhance economic growth in competitive banking systems.

A reduction of reserve requirements ratio or the payment of market clearing loan rate on required reserves is viewed as a growth enhancing policy measure. Kapur’s model
comes under criticism for its perspective on the nonneutrality of money and this is well articulated in Fry (1988, p. 36). In Kapur's model, depositors receive a constant real deposit rate of interest regardless of the inflation rate. This is so because the optimal value for the differential between the nominal deposit rate of interest \(d\) and the inflation rate \(\pi\) is \(r^*\). The difference between the rate of change in money stock \(\mu\) and the rate of change in real output \(\gamma\) is equal to the real return on working capital investment \(r^*\). Following Fry (1988), the above relationship can be shown as:

\[
\gamma = \mu \frac{\sigma}{1 - \alpha} e^{r^*} - \mu \theta + \gamma \theta
\]  

If \(r^*\) is positive, the equation showing that economic growth is a monotonically increasing function of the rate of monetary growth can be shown as:

\[
\frac{\Delta \gamma}{\Delta \mu} = \frac{1}{1 - \theta} \left( \frac{\sigma}{1 - \alpha} e^{r^*} \right) - \theta
\]  

Identifying the absence of a behavioural savings function or supply constraints as a shortcoming of Kapur's model, Fry (1988) expands the model by assuming that banks finance the same proportion of net and replacement working capital investment as follows:

\[
\Delta K = \frac{1}{(\theta(1 - \alpha))} [\Delta CR - \Delta P(1 - \alpha)K/P]
\]  

The above equation is then rewritten in the form of a growth equation as follows:

\[
\gamma = \mu \left[ \frac{(\sigma q)}{\theta(1 - \alpha)} \right] e^{(d - \pi)} - \pi
\]  

In the steady state, the above equation no longer maintains the relation between monetary expansion and economic growth as articulated in Kapur's model. In this case, the rate of growth becomes indeterminate.

Despite the similarities, Mathieson's model differs from Kapur's by assuming that fixed capital is fully utilized and that a fixed proportion of all investment is financed by bank loans. Total loan demand is given by:

\[
\frac{CR}{P} = \theta K
\]
The rate of capital accumulation is explained by firms' saving behaviour, which is determined by the fixed return on capital ($r^*$) and the real loan rate of interest ($-\pi^*$) as follows:

$$\Delta K = s(r^* - 1 + \pi^*)Y$$  \hspace{1cm} (2.21)

The growth rate function is derived from the above equation of the investment rate and the demand for loans and it is:

$$\Delta K = s(r^* - 1 + \pi^*)\sigma$$  \hspace{1cm} (2.22)

According to this function, growth is a positive function of the real return to investment, expected inflation rate, the output/capital ratio and a negative function of the nominal loan rate. The demand for deposits and the required reserve ratio determine the supply of loans as long as high-powered money is not backed by loans. If $1 - q$ represents the reserve ratio, the value of bank credit can be depicted as:

$$\frac{CR}{P} = q\left(\frac{D}{P}\right)$$  \hspace{1cm} (2.23)

Where $CR/P = \text{real bank credit}$ and $D/P = \text{real bank deposits}$. The demand for real deposits takes the form:

$$D/P = f(d - \pi^*)Y$$  \hspace{1cm} (2.24)

Like Kapur, Mathieson also assumes a constant ratio of currency/money ratio as follows:

$$\frac{\Delta C}{CR} = \frac{\Delta CR}{CR} = \frac{\Delta M}{M} = \mu$$  \hspace{1cm} (2.25)

In the steady state, the demand and supply of loans determine the equilibrium deposit rate. In this context, the competitive banking system incurs zero costs and this is reflected by the equality between nominal interest rates ($l$) and the ratio of nominal deposit interest to the ratio of bank credit to money ($d/q$):

$$l = d/q$$  \hspace{1cm} (2.26)

$$\pi^* = \pi$$  \hspace{1cm} (2.27)

$$\pi = \mu - \gamma$$  \hspace{1cm} (2.28)
The above equations 2.27 and 2.28 suggest that rate of inflation is equal to the expected rate of inflation and the difference between the rate monetary expansion and the rate of economic growth, a conclusion similar to that reached in Kapur's model. While loan demand is perfectly inelastic in Mathieson's model, it is perfectly elastic in Kapur's model. The differences in the loan demand elasticities in the two models derive from differences in loan use. In Kapur's model, bank loans are used solely for working capital, which is used up and repaid in each period. With the real return for working capital fixed at r*, the demand for loans to finance capital is infinitely elastic at that level of return rate. Through the assumption that the demand for bank loans are a fixed proportion of capital stock, Mathieson's model yields the conclusion that the loan rate influences the rate of change of investment but cannot affect its level at any one time. In essence, the stock of loans outstanding is independent of the current interest rate on loans.

In Mathieson's model, a higher required reserve ratio raises the nominal deposit rate thereby increasing real money demand and at the same time raising the equilibrium loan rate which raises the cost of capital. This leads to a reduction in investment and the rate of economic growth. The neutrality of money holds in the steady state if there are no unremunerated required reserves and the nominal deposit and loan interest rates are free to find their equilibrium levels. However, neutrality does not hold, if the above stated conditions do not exist. A decline in the real supply of loans and a rise in the real loan rate leads to a reduction in investment and growth as indicated above.

The models of Kapur and Mathieson attribute increased economic growth to increases in the quantity of investment. When prices are sticky and there are adaptations, Kapur's model predicts the impact of financial liberalization during stabilization to be a decline in output. The transmission mechanism is the containment of inflation by reducing the rate of monetary expansion, which leads to a reduction in real money supply leading to a decline in the supply of credit. This implies a decline in the financial resources to finance working capital and ultimately leads to a decline in output. The critical link here is the impact of the decline in the supply of credit on output.

The alternative to the deflationary effects of reducing the rate of monetary expansion is to eliminate the excess money supply by increasing the deposit rate.40

40 This discussion resembles the debates about the effectiveness of high interest rates in stopping high inflation whereupon some argue that the monetary contraction achieved
Increasing the rate of return on money this way is expected to induce a rise in the demand for money. It is expected that this way of containing inflation would be accompanied by an increase in the flow of financial resources into the banking system and therefore an enhancement of the banks’ ability to extend credit. The ability to attract money into the financial system depends on the magnitude of the increase in its rate of return. Moreover, if there is a mismatch of funds arising from positive maturity transformation by banks (i.e. borrowing short-term and lending long-term), bank profits would be squeezed. As Jao (1985) observed, loan rates on existing loans cannot be raised unless banks lend at variable interest rates.

Raising domestic interest rates results in a widening of interest differentials with the rest of the world and arbitrage considerations may result in capital inflows, which could negate domestic currency depreciation that may be a component of the stabilization package. Capital inflows can make it difficult for the monetary authorities to control the monetary base. MS consider a flexible exchange rate as an important ingredient of financial stabilization and liberalization. Both prefer some variant of a crawling peg in order to maintain both interest rate and purchasing power parity and deter disruptive capital flows. In their open economy extensions, both Kapur and Mathieson address the exchange rate issue but from different perspectives. The former is concerned with designing an exchange rate policy to forestall disruptive capital inflows while the latter views anticipated capital inflows as beneficial. Kapur recommends increases in both the deposit rate and the rate of monetary expansion but subject to the level of inflation being low at the starting point. Raising the rate of monetary growth is expected to reinforce economic growth without compromising the inflation target. This is so because higher deposit rates help to dampen the inflationary impact of the increase in money supply.

Mathieson (1980) recommends an over-depreciation of the domestic currency, a reduction in monetary growth and an increase in the deposit and loan rates. The increase in interest rates is supposed to eliminate credit rationing and allow output to rise. There is through the interest rate channel may be less disruptive than the one derived from direct squeeze on credit. See Calvo, (1992) for an example.

41 It is assumed that banks maintain their profitability by maintaining the spread and increasing the lending rates accordingly.

42 High nominal interest rates are viewed as the instrument to contain inflationary expectations.
need to coordinate the raising of interest rates and the exchange rate policy so as not to further reinforce expectations of an appreciation associated with a strong current account position. The idea is to increase interest rates moderately to attract domestic deposits and generate moderate capital inflows. In this approach, capital inflows increase the supply of real credit and reduce credit rationing. The implication is that growth can remain above its steady state level (because interest rates have not risen by as much as they would have without the policy of over-depreciation) and higher output sets the stage for a fall in inflation by eliminating the excess demand for goods (Gibson and Tsakalotos, 1994).

Fry (1988) complements the theoretical insights of the models of Galbis, Kapur and Mathieson by developing a model for empirical testing. He concludes that in the steady state, real institutional interest rates affect the rate of economic growth through saving, investment and the average efficiency of investment and that real interest rates also affect inflation through money demand and short-run growth through credit availability.43

Galbis (1977)'s model depicts elements of a fragmented developing economy characterized by two production sectors with different technologies and different financial behaviour. The role of financial intermediation and of monetary policy in the process of transferring real resources from the backward to the advanced sector is analyzed. The two-sector model demonstrates that an improvement in the process of financial intermediation can result in a significant acceleration in the rate of economic growth. In the model, the adoption of higher equilibrium real interest rates shifts resources from the low yielding technologies in sector to the high yielding technologies in sector. The pursuit of low interest rate policies constitutes a failure to correct the distortion, which often results in a situation of excess demand for investment funds and a reinforcement of the oligopolistic structures of some banking systems. Countries pursuing such interest rate policies often introduce credit rationing which by its very nature is a sub optimal solution.

The important conclusion from the extensions of the MS financial repression paradigm is that financial liberalization (removal of interest rate ceilings, elimination of the taxation through reserve requirements and ensuring competition in the banking system) raise investment and the rate of economic growth. Financial intermediation is now explicitly modeled as opposed to being taken for granted or treated in simple deterministic

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43 See Fry 1988, pp.46–62) for the specification of various empirical relationships among saving, investment, domestic credit, money demand and growth.
terms, as was the case with the first generation financial repression models (Fry 1997). Researchers have added financial variables to the list of variables used by Barro (1991) in his endogenous growth approach to examine the determinants of growth in cross-section studies. These studies also find that financial repression in the form of discriminatory taxes on financial intermediation reduces the growth rate.

b. Post Hoc views on requisites for successful financial liberalization

Some strands of theory on financial liberalization focus on macroeconomic stability and adequate supervisory and monitoring capacity and the analytical and empirical work on the relationship between financial intermediation and economic growth. As indicated in section 2.1, this focus on requisites for successful financial liberalization constitutes a theoretical revision designed to defend the disappointing empirical record of the original financial repression thesis of MS. This literature makes the case for a proper sequencing of measures and the need for and enabling environment in the form of prerequisites. The title of McKinnon (1991)'s book "The Order of Economic Liberalization" is an apposite characterization of these ideas.

c. Prerequisites for Financial liberalization

The idea of prerequisites for liberalization and the need to pay attention to sequencing derives from the notion that adjustment does not take place at the same speed in all the markets. For example it is slower in the goods markets than in the financial markets. Consequently, the simultaneous liberalization of the financial sector and other markets is bound to generate some problems and possible conflicts among policy measures. The general conclusion is that financial sector liberalization should be introduced after reforms in the real economy and that liberalization of the domestic financial markets should precede liberalization of foreign markets. It is further suggested that a stable macroeconomic environment and a strong regulatory framework should underpin any such financial liberalization. Several researchers provide useful schema for the sequencing of financial sector reforms (Khan and Sundararajan, 1992; McKinnon, 1993; and Turtleboom, 1991).
The conditions often identified as pre requisites for successful financial liberalization include: macroeconomic stability; a strong regulatory and supervisory framework; profit-maximizing and competitive behaviour among banks; nondiscriminatory explicit or implicit taxes on financial intermediation; an interest rate structure that is not in serious disequilibrium; and a well-functioning money market and monetary policy instruments that are able to influence the marginal cost of funds to banks. The political commitment to reforms is very important and perhaps should be included among these pre-requisites for successful reforms.

Some of the literature discusses the issue of monetary control and the transition to indirect instruments of monetary policy (Balino and Zamalloa, 1997; Johnston and Brekk, 1991; Khan and Sundararajan, 1992; Roe and Sowa, 1997; and Wong, 1991). If direct controls are one of the distinguishing features of monetary management under financial repression, their opposite, indirect instruments of monetary management are an important feature of a liberalized financial system. The functioning of indirect instruments of monetary policies can be enhanced by:

i) greater independence for central banks in macroeconomic stabilization;

ii) strengthened competition in the banking system;

iii) improved portfolios of financial institutions; and

iv) improved supervision and efficient payments systems.

Financial sector reforms and indirect instruments of monetary policy have a symbiotic relationship.

2.5. Criticisms of Financial Liberalization

The financial liberalization literature falls within the main stream neoclassical perspective and holds as one of its crucial assumptions the view that markets work perfectly. It is believed that without government intervention in the form of for example, interest rate controls, the market for savings and investment would clear. The main critics of the financial liberalization have focused on the shortcomings of its neoclassical origins.

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44 Macroeconomic stability refers to price stability, fiscal discipline characterized by limited non inflationary domestic borrowing and avoidance of an appreciation of the exchange rate. These issues are picked up in discussion of the literature further on.
The main arguments of Taylor and Wijnbergen (structuralists) focus on macroeconomic issues, while that of Stiglitz is mainly microeconomic and focuses on the problems of market imperfections.

Some critics of the liberalization school challenge the MS expectation that the removal of interest rate ceilings and other distortions facilitates economic growth and efficiency in the allocation of capital. These critics consider the MS approach incomplete and oblivious to the possibility that endogenous constraints in the credit market such as imperfect information could be significant barriers to efficient credit allocation even when banks are freed from interest rate ceilings. In this regard, the removal of interest rate ceilings is no panacea to the economic growth and development problem. Another shortcoming identified is that MS does not address the market structure of banking systems in developing countries. The financial markets in developing countries tend to be oligopolistic or operate like cartels. A further criticism of the financial liberalization literature pointed out by some researchers is that the literature has ignored the potential role of equity markets for efficient capital allocation and risk sharing in a liberalized financial environment (Cho, 1986, p.191). However, Stiglitz (1994) presents a table, which shows that during the period 1970–90 only a small fraction of total investment in both developing and industrial countries was financed by new equity or bond issues.

Structuralists arrive at conclusions that contradict the predictions of the financial repression paradigm. They arrive at their conclusions via a set of assumptions, which differ fundamentally from the premises of the MS approach and among the main ones are:

- institutional determination of wages or exogenous determination through class conflict;
- the determination of inflation by the relative power of capitalists and workers;


The countries included in the table are Thailand, Republic of Korea, Malaysia, Taiwan, France, Federal Republic of Germany, Japan, U.K. and U.S.A. Korea and Taiwan were the exceptions in that a high proportion of finance was derived from the equity and bond markets during the period reported.

See Fry (1995, pp109-131) for detailed descriptions of the main tenets of the neostructuralist perspective articulated by Taylor and van Wijnbergen.
• savings are derived from profits only and not wages;

• price level depends on fixed markups over costs of labour, imports and working capital;

• developing countries need imports of raw materials, capital equipment and intermediate goods;

• informal markets, often considered competitive and agile are an important feature of developing countries;

• reserve requirements on commercial banks often make them less efficient than informal (curb) markets in intermediating between savers and investors;

• following Tobin's portfolio framework, households are viewed as facing three categories of assets (gold or currency, bank deposits and curb market loans);

• funds are assumed to flow freely between the banking system and the curb market and thus the relevant rate of interest in structuralist models is the curb market rate; and

• debt to equity ratios tend to be high in developing countries because of dependence on credit to finance working capital.

These assumptions lead to a number of significant conclusions. For example, the pricing markup system and the dependence on imports lead to the view that a tight monetary policy stance and devaluation may simultaneously result in a sharp rise in the rate of inflation and a slowdown in the rate of economic growth. Structuralists argue that one of the effects of financial liberalization may be a reduction in the rate of economic growth. This is premised on the notion that the return to formal markets that is triggered by higher interest rates not only diminishes the importance of the curb markets but reduces the total real supply of credit to businesses. Interest rates in the curb market would also have to rise and this contributes to a rise in the cost of capital and ultimately, the price level given the mark-up pricing set up. Fry (1995) notes that neo-structuralists expect households to substitute mainly out of curb market loans into time deposits when the time deposit rate is increased. This leads to a decrease in the total supply of loanable funds and a rise in the curb market rates, essentially taking away the incentives to financial disintermediation through curb markets. It is worth noting that the MS models contrast the
Tobinesque portfolio framework in specifying only two assets in household portfolios (gold or other inflation hedges and money) and implying that substitution into money must come from substitution out of inflation hedges.

Gibson and Tsakalotos (1994) find fault with the neo-structuralist perspective for being long on explanations of how financial liberalization experiences of developing countries appear to have led to stagflation and being short on alternative suggestions for the development of the financial sector in such settings. However, the authors acknowledge an exception in Taylor (1983) whose policy recommendation is that the objective of capital accumulation in developing countries be tackled directly through increased capacity utilization. Gibson and Tsakalotos (1994) express concern about the policy implications of the neostructuralist perspective for financial dualism and conclude that any promotion of financial dualism is sub-optimal.

The work of Stiglitz and Weiss (1981) on credit rationing and adverse selection shows how asymmetric information between lenders and borrowers may lead to credit rationing and optimal interest rates that are below market clearing levels even in competitive banking systems and in environments where there are no interest rate ceilings. This challenges the view, which attributes low interest rates and credit rationing solely to government intervention. It is thus not obvious that the removal of government controls on interest rates leads to a dynamic and efficient financial system. Moreover, simply having positive real interest rates is no guarantee that the financial system is efficiently allocating resources. From this perspective, the assumption that credit and interest rate liberalization will eliminate credit rationing becomes unsustainable.

Markets are viewed as being prone to failure and thus there are forms of government intervention that may improve the performance of these markets and thereby improve economic performance. Faced with the prospects of risky projects and adverse selection due to asymmetric information, profit-maximizing banks may practice credit rationing. Stiglitz (1994) argues that much of the rationale for liberalizing financial markets is based on an ideological commitment to an idealized conception of markets that is not based on facts or economic theory. He contends that financial markets are different from other markets and this exposes them to pervasive market failures.

With respect to interest restrictions, Stiglitz (1994) invokes Gresham's law of financial markets. The law in this context describes behaviour whereby risk loving banks drive out the more prudent ones. Citing the case of government provision of deposit
insurance, Stiglitz makes the case for some form of interest rate control as a way of reducing the likelihood of the event against which deposit insurance is provided. Allowing banks to pay high interest rates when explicit or implicit deposit insurance exists results in perverse incentives (Stiglitz, 1994, p.39). Under these circumstances, banks compete for deposits by paying high interest rates on deposits and thereby taking on higher risks. Regulation on insured deposit rates could thus be viewed not as a restriction on competition but an attempt to rein in the banks' ability to take advantage of an implicit subsidy.

Following from his argument that financial markets are not the same as other markets and that the analogy between the allocation of credit and the allocation of other goods is inappropriate, Stiglitz (1994) concludes that financial repression can improve the efficiency with which capital is allocated. To the extent that financial repression lowers the cost of capital and increases equity, this is viewed as a safeguard against bankruptcy and excessive risk taking.48 49

2.6. Review of Empirical Evidence

The main empirical work seeking to establish the relationship between financial liberalization and economic growth has focused on the components of the transmission mechanisms suggested by the financial repression hypothesis of MS. Efforts have been made to establish the linkages between:

(a) real interest rates and saving;
(b) credit availability and investment; and
(c) the relationship between real interest rates and the productivity of investment.

Research on the linkages between financial intermediation and economic growth has taken many forms including cross-country growth regressions, country case studies, industry studies and studies of the effects of structural adjustment. Overall, the evidence is mixed

48 Enterprises have an interest in selecting good projects when they have high stakes through increased equity.

49 See Stiglitz (1994, pp. 39–50) for details of his support for some forms of financial repression, directed credit and guarded acceptance of competition.
and inconclusive with both advocates and opponents of liberalization adducing some evidence to support their positions. As discussed above, the MS position is that financial liberalization has a positive effect on the rate of economic growth in both the short and medium-runs. However, neostructuralists associate financial liberalization with accelerating inflation and lower growth in the short-run.

Not all the channels through which the financial sector affects the real sector are readily observable. Consequently, some proxies of financial development are used. These proxies mainly involve an assessment of the level of interest rates, the volume of financial intermediation, and some measure of efficiency. The range of indicators that has been used as proxies for financial development includes:

- Indicators of financial depth such as ratios of narrow money (M1) and broad money (M2), of quasi money and of liquid liabilities to GDP.
- The share of financial intermediation carried out by commercial banks (measured by the ratio of deposit money and domestic assets of commercial banks to the financial sector).
- The volume of lending to the private sector measured by the ratio of flow of credit to the private sector to GDP.
- Direct indicators of financial repression such as the reserve ratio or the ex post real interest rate.

**a. Interest elasticity of savings**

Some researchers have found savings to be elastic to interest rate changes (Boskin, 1978; and Fry, 1978, 1980). Others found no positive interest rate effects on savings, (Cho and Khatkhate, 1989; Giovannini, 1983; Gupta, 1987; and Mikesell and Zinser, 1973). This is mainly because of the opposite effects of the income and substitution effects. Further supporting the notion of low interest elasticity of savings, Stiglitz (1994) points to the ability of Japan’s postal savings bank to mobilize large sums despite paying low interest rates.50

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50 He points out that other factors such as convenience and safety may outweigh interest rates in determining the level of savings.
Fry (1988) estimated a pooled time series national savings function for 14 Asian developing countries by postulating that savings is a function of income growth, the population dependency ratio, foreign savings and the expected real rate of interest. He found that real interest rates have a positive and significant effect on national savings. However, similar regressions for a smaller number of Asian countries covering the 1960s and 1970s by Giovannini (1983) and Cho and Khatkhate (1989) find no such effect of interest rate on savings. In a similar exercise with pooled time series data from 22 Asian and Latin American countries, Gupta (1987) also found no effect of interest rates on saving but noted the stronger effect of interest rates in Asian countries than in the Latin American countries in his sample.

Mikesell and Zinser (1973) concluded that interest rates were more significant in determining the channels into which savings flow in both developed and developing countries and did not have much impact in altering the propensity to save. A survey of a number of SSA countries by Nissanke, 1998 also concluded that interest rate deregulation had very little effect on improving the size and the allocation of savings. In their examination of Mexican data covering the period 1960–90, Warman and Thirlwall (1994) found that the rate of interest had a strong positive effect on financial savings but an insignificant effect on total savings.

Despite the differences in some of the sample periods and some of the specifications, the differences in the results are surprising. Gibson and Tsakalotos (1994) conclude that the differences in the results may be a reflection of the robustness of the data. Modigliani (1986) found no convincing general evidence either way and concluded that the saving ratio is largely independent of the interest rate. Based on evidence from the U.S. and other industrial countries, Dornbusch and Reynoso (1989) similarly concluded that no study had demonstrated a discernible net effect of real deposit rates on savings ratios.

b. Link with growth

Establishing causality between financial liberalization and economic growth is difficult because more often than not, financial sector reforms are an integral part of economy-wide reforms. At any rate, establishing some association between financial liberalization and economic growth is not evidence for causality and its direction. A number of researchers have addressed the issue of causality (King and Levine, 1993; Khan and Senhadji, 2000; Levine, Loayza and Beck, 2000; and Demetriades and Hussein,
1996). Khan and Senhadji, 2000 argue that there are many channels through which financial development and economic growth affect each other. Therefore the issue in the empirical literature is not about spurious correlations but rather one of simultaneity bias.\footnote{See references in Khan and Senhadji (2000) for attempts to tackle the simultaneity bias by using instrumental variables or related econometric techniques such as Generalized Method of Moments (GMM).}

Lanyi and Saracoglu (1983) implicitly addressed the causality issue by dividing 21 developing countries into three groups and assigning a value of 1 to countries with positive real interest rates, 0 to countries with moderately negative real interest rates, and -1 to countries with severely negative real interest rates. To the extent that governments' administrative fixing of interest rates resulted in negative deposit rates, the rates can be viewed as exogenous to the growth process. Lanyi and Saracoglu's cross-section regression results suggested a positive and significant relationship between the average rates of growth in GDP and the interest rate dummy variable for the period 1971–80.

Using methodology similar to that used in the Lanyi and Saracoglu (1983) on a sample of 34 developing countries, the World Bank (1989) found similar results. In particular, the results revealed a positive and significant cross section relationship between average growth and real interest rates over the period 1965–85. The World Bank results showed that in countries with strongly negative interest rates (lower than -10 percent), economic growth was substantially lower than in countries with positive real interest rates during the period 1974–85. The study revealed that the average investment ratio was 17 percent higher in countries with positive real interest rates but the average productivity of investment as measured by the incremental output/capital ratio was about four times higher than that in countries with negative real rates of interest. This finding confirmed the well-known fact that financial repression exerts its main impact on the quality rather than the quantity of investment and has no notable direct effect on saving.

Findings of several studies using pooled time series regression estimates have confirmed positive and significant relationships between the rate of economic growth and the real deposit rate of interest. The results reported in Fry (1980, 1981) suggest a coefficient of 0.5 on average for the real deposit rate of interest in Asia. This means that a 1 percent increase in the real deposit rate of interest leads to a half a percentage point increase in the rate of economic growth. Other studies, World Bank (1989), Gelb (1989), and Polak (1989) suggest coefficients of the real deposit interest rates in the range 0.18–
0.27 for many developing countries. DeGregorio and Guidotti (1995) argue that real interest rates are not a good indicator of financial repression or distortion. They concede that negative real interest rates tend to cause financial disintermediation and thereby reduce growth along the lines hypothesized by MS. However, they point out that very high real interest rates that do not reflect improved efficiency of investment, but rather a lack of credibility of economic policy or various forms of country risk may result in a lower level of investment and a surge in excessively risky projects.

The endogenous growth models of Romer (1986) Lucas (1988) and Rebelo (1991) sparked resurgence in the interest in on economic growth. Barro (1991) used a large database to construct regressions explaining cross-country growth experiences. In Barro's approach, average growth per capita is regressed on the initial value of GDP, initial value of some measure of human capital, rate of physical capital accumulation, the ratio of government expenditure to GDP, openness, inflation, the rate of foreign direct investment and an index of political tensions. In endogenous growth models, a broadly defined concept of capital stock experiences increasing returns to scale and thus growth is a positive function of the investment ratio. Some researchers add financial variables to the list of variables used by Barro. Examples of such studies are De Gregorio and Guidotti, 1992; Roubini and Sala-I-Martin, 1992; and King and Levine (1993).

In an examination of the linkages between finance and economic growth in 77 developing countries over the period 1960-89, King and Levine (1993) found that each financial indicator was positive and significantly correlated with each growth indicator at the 99 percent confidence level. King and Levine (1993) divided their sample of

52 Estimates by Fry (1997, 764) confirm this viewpoint and show that economic growth is maximized when the real interest rate lies within the normal or non-pathological range of about -5 to +15 percent. Recent research by Chong-en et al (2001) cites instances of mild financial repression in Chile, Japan, South Korea, Taiwan and China, which did not impede growth. They indicate that up to one third of China's total government revenue during the period 1986-94 was derived from seigniorage and financial repression and yet China has experienced phenomenal economic growth in recent years. This leads them to the conclusion that raising some government revenue through mild financial repression may be more efficient than collecting income tax only.

53 They constructed four financial indicators and four indicators of economic growth. The financial indicators included the ratio of broad money to GDP, the ratio of the domestic assets of deposit money banks to the sum of the domestic assets of the deposit money banks and the central bank, the ratio of credit to the private sector to total domestic credit, and the ratio of credit to the private sector to GDP. The growth indicators comprised the average rate of growth in per capita real GDP, the average rate of growth in capital stock, (continued)
77 countries into four groups on the basis of per capita income growth and found that the average value of the financial indicator declined with a move from a higher to a lower growth group.

Despite the widespread use of the cross section approach to establish the relationship between economic growth and financial liberalization, some researchers have expressed misgivings about its limitations.\footnote{See Gibson and Tsakalotos (1994), Arestis and Demetriades (1997), Evans (1995), Levine and Renelt (1991), Levine and Renelt (1992), and Quah (1993).} The misgivings stem from the fact that such studies suffer from methodological problems such as the heterogeneity among countries, and the lack of robustness of the results. The results from this exercise establish an average relationship, which is not applicable to any one country. Furthermore, the parameters measure the strength of a partial correlation. With regard to robustness, the variable of interest may cease to enter the regression with a theoretically meaningful and expected sign and significance as other variables are added to the growth regression. The practical import of the results is limited because the interpretation of the direction of causality is an open issue.

Arestis and Demetriades (1996) argue that the causal interpretation of the correlation between economic growth and financial development that King and Levine (1993) found is based on a fragile statistical basis. Using the same data set, Arestis and Demetriades (1996) show that the contemporaneous correlation between the main financial indicator and economic growth is much stronger than the correlation between lagged financial development and growth. Researchers agree that financial development and economic growth are robustly correlated and this can be established within the cross section analysis. However, the question of causality is not satisfactorily resolved in a cross-section framework. Time series studies reveal that there can be differences in causality patterns across countries.\footnote{Refer to Arestis and Demetriades (1996) and Demetriades and Hussein (1996) for such differences across countries.} Quah (1993) argues that the cross-country approach is predicated on the existence of stable growth path and uses data from 118 countries to demonstrate that long-run growth patterns are unstable.

A proxy for productivity improvements (measured as the residual between growth in real per capita GDP and 30 percent of the growth in capital stock) and, the ratio of gross domestic investment to GDP.
Some work has been carried out to address some of the perceived problems of cross-section analysis. Heterogeneity has been tested by including slope and/or shift dummies for regions; robustness has been investigated through sensitivity analyses; and causation has been addressed by using initial values of explanatory variables rather than average values during the sample period (Montiel 1996). Khan and Senhadjii (2000) apply both a pure cross-section sample (by averaging along the time dimension) and five-year average panels (obtained by taking five-year averages of the original data) using a growth equation akin to the one adopted in Mankiw, Romer and Weil (1992). The analysis is applied to data from 159 countries comprising developing and developed countries. The results confirm that financial development is an important determinant in cross-country growth differences. Some financial depth indicators were found to be statistically insignificant in panel estimations. Possible explanations for this outcome include the possibility that the relationship between growth and financial depth is non-linear, the volatility of growth relative to financial depth and inadequacy of the indicators of financial depth to fully capture the changing structure of financial markets in a particular country.

c. The quantity and quality of investment

The MS hypothesis that investment increases in both quantity and quality as savings increase is often tested by ascertaining whether an increase in deposit rates increases the volume of credit available in the economy. A further step in this type of test is to establish the nature of the relationship between credit availability and investment. Researchers have found conflicting results regarding the relationship between interest rates and investment. For example, Fry (1980, 1981) found positive relationships between credit and the rate of interest as well as between investment and the amount of credit available. Warman and Thirlwall (1994) tested these relationships with data for Mexico over the period 1960–90 and found investment to be positively related to the supply of credit from the banking system but found the net effect of interest rates on investment to be negative.

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56 Montiel cites Roubini and Sala-i-Martin (1992) and King and Levine (1992, 1993) as examples of researchers that have tried to address the problems of cross-country studies.

57 They use four indicators of financial depth: a) *fd1*: domestic credit to the private sector as a share of GDP; b) *fd2*: *fd1* plus stock market capitalization as a share of GDP; c) *fd3*: *fd2* plus private and public bond market capitalization as a share of GDP; and d) stock market capitalization.
Greene and Villanueva (1991) used a sample of 23 developing countries over the period 1975–87 and found a negative and significant effect of real interest rates on investment. Demetriades and Devereux (1992) used a sample of 63 developing countries over the period 1961–90 and found that the effect of higher domestic interest rates on the cost of capital outweighed the effect of an enhanced supply of investible funds on investment. From this, it could be concluded that interest rate liberalization has on balance, a negative effect on investment.

The exclusion of the real interest rate variable in the specification used by Fry (1980) is criticized by Gibson and Tsakalotos (1994) who also suggest that the net effect of increases in real deposit rates and real loan rates on investment may be ambiguous. Gibson and Tsakalotos fault regressions trying to test the relationship between the real deposit and credit availability for tending to be bivariate and not being based on a sound theoretical basis that would allow for the endogenous determination of credit creation within the economy.

At the empirical level, some of the explanatory variables used in regressions on investment in developing countries try to address concerns about economic instability and the variability of macroeconomic variables. Examples of these are changes in the real effective exchange rate and exports. Rama (1990) develops an integrated framework in which the various concerns are incorporated into a single analytical model yielding different specifications. There is a sense in which many the investment equations used by researchers are specified in an ad hoc manner.

Rama (1990) conducted a survey of 25 studies specifically dealing with determinants of private investment in developing countries. Large differences were found among the studies and coefficients of determination ranged from 0.08 to 0.99. The average of the coefficient of determination was 0.70. Low coefficients were common in studies using panel data and some of the studies reporting very good fits tended to have endogenous variables, which were not scaled and thus were subject to spurious correlation.

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58 The sample of countries has a regional bias in that a disproportionate number of Latin American countries are included and there are only three African countries. The explanation given is that this could reflect data availability. Lending further support to the explanation of data limitations is that fact that only two of the specifications were based on microeconomic information.
between variables trending upward over time. There was also a problem of serial
correlation in estimating procedures using a partial adjustment process.

Aggregate demand (output) was included in all but eight of the studies in Rama’s
survey and its coefficient was always found to be positive and statistically significant.
Most of the studies discussed the crowding-out effects of public investment but only five
of them accounted for the possibility of an externality on private investment. Credit
availability emerged as one of the decisive arguments for private investment in LDCs.
Eighteen of the studies in Rama (1990) included credit availability in their specifications
and for the most part, coefficients were correctly signed and significant.

Rama (1990) argues that financial variables such as credit availability are
erroneously measured, as are relative factor prices. The studies used a wide range of
indicators to represent foreign exchange availability and the most common ones were
exports, international reserves, and real exchange rate. The coefficients of these variables
were correctly signed and almost significantly positive. Six of the studies included
indicators of economic instability. Some used dummy variables to reflect policy changes
or uncertainties while others measured instability through standard deviations of either
relative prices, aggregate output or stock market yields. The corresponding coefficients
had the expected signs and were statistically significant.

Some researchers (Roubini and Sala-i-Martin, 1992 and Demetriades and
Luintel, 1996, 1997) measure the direct effects of financial repression by incorporating
measures of financial repression in growth and/or financial development equations. They
find the direct effects of repression pronounced and negative in the case of Roubini and
Sala-i-Martin and probably more pronounced than the interest rate effects stressed in the
earlier literature but not necessarily negative in the case of Demetriades and Luintel.
Demetriades and Luintel (1997) argue along the lines of Stiglitz (1994) discussed above
and suggest that it is theoretically possible that market failure in the financial system
reverses the conclusions of the financial liberalization thesis.

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59 He points out that instead of credit availability, which is related to savings, banking
system liquidity, most studies consider actual credit. For that reason he cautions care in
assessing the financial repression hypotheses from these equations.

60 The market failure may be due to imperfect competition or asymmetric information.
As indicated above, some studies have suggested that a rise in the real deposit rate increases the quality of investment. An essential element of these analyses seems to be an assumption that the average efficiency of investment is monotonically related to the incremental capital/output ratio. Bivariate regressions, which show that an increase in the real deposit rate decreases the incremental capital/output ratio are then used as evidence to suggest that liberalization involves an increase in investment efficiency (Gibson and Tsakalotos, 1994). Such results may be biased because of the non-orthogonality of omitted variables.

In addition to the foregoing description of some empirical findings, considerable effort has also been expended in documenting country experiences with the process of financial liberalization. The following section draws selectively from some of these experiences. To put these experiences in context, a discussion of criteria that has been used in assessing country experiences precedes them.

2.7. Lessons from Country Experiences

a. Criteria for assessing the impact of financial liberalization

Some of the effects of liberalization are specific to the financial sector (microeconomic) and can be directly attributed to reforms in the sector while others have economy wide effects (macroeconomic). Both categories consist of effects that are observable directly as well as those that are not observable immediately. Indicators that can be used to assess the impact of financial liberalization include: inflation; deposit and lending interest rates; growth in broad money; credit to the private sector; investment and saving ratios; growth in real GDP; uncovered interest rate differential; exchange rate movements; capital inflows; and the government budget balance.

Inflation and the budget balance are indicators of macroeconomic stability. Interest rates can be indicators of the efficiency of financial intermediation and provide information on the extent of financial repression and the size of spreads. The growth in monetary aggregates gives some clues about the stance of monetary policy while the ratio of broad money to GDP or its inverse indicates the level of financial deepening. The level or the growth in credit to the private sector is an indicator of the reversal of the level of crowding out of the private sector often associated with financial repression. Savings and investment ratios are used as indicators of the general effects of financial liberalization on the volume of saving and investment and the positive impact on the rate of growth.
Economic growth is a complex process, which is influenced by many other factors other than savings and investment. Abstracting from these other factors, economic growth could be viewed as an indicator of the possible efficiency enhancing gains from financial liberalization. The difference between local interest rates and international interest rates and the movements in the exchange rate indicates the extent to which domestic financial markets become integrated with the world markets and become subject to arbitrage processes as reflected in capital movements.

b. Selected Country Experiences

The review of country experiences draws selectively from the findings of Cho and Khatkhate (1989), Bisat et al (1992) and Galbis (1995). References to Asian countries herein pertain to an earlier period and thus exclude the recent financial crisis in South East Asia. However, it is worth noting that even prior to the recent crisis, the general macroeconomic policies of these countries were sound and that the problems of the recent crisis originated from private sector activities.61

The main issues addressed by the studies referred to above include: the level and structure of interest rates; financial sector deepening; competitiveness, profitability and efficiency of financial institutions; availability of long-term credit; integration of domestic interest rates with foreign interest rates; quality of bank loan portfolios; and the corporate sector's financial structure.

Appendices 2.I and 2.II. summarize the experiences of the countries in the Cho et al sample of countries according to criteria identified for assessing the impact of liberalization and the pre-reform situations of some of the countries in the Galbis (1995) sample respectively.62 Except for Ecuador, which initiated reforms in 1992, all the countries in the Galbis' sample initiated their reforms in 1991, which is also the year that Zimbabwe embarked on its reforms. Financial sector reforms in these countries were also

61 The main contributory factors to the crisis were over-expansion in investment driven by excessive expansion in bank credit (sometimes at the behest of governments and resulting in asset price bubbles), poor bank supervision and reliance on volatile forms of external finance encouraged by a mis-perception of exchange rate risk given the long-standing policies of fixed or semi-fixed exchange rate regimes. Widening current account deficits were financed by private capital inflows while official reserves continued to accumulate.

62 The countries in the Galbis study are Argentina, Bulgaria, Ecuador, Egypt, India, Kenya, Tanzania and Uganda.
introduced simultaneously with other structural reforms in the context of IMF supported programmes. The objectives were similar in that countries sought to improve their financial sectors through market-oriented policies in monetary control, efficiency of financial intermediation and safety and soundness of financial systems.

The growth of the financial sector has been found to be rapid when the level of interest rates is high and the rate of inflation is stable. The maturities of loans tend to be shortened whenever the inflation rate is high and unstable and thus the liberalization of interest rates may not lead to a significant increase in the supply of long-term loanable funds.

A study by Bisat, Johnston and Sundararajan (1992) on the sequencing of financial sector reforms in Argentina (1977-80), Chile 1975-81), Indonesia (1982-85) Korea (1980-88) and the Philippines (1980-84) found that the countries which deregulated interest rates and credit controls early in their financial liberalization programmes (Argentina, Chile and the Philippines) experienced significant financial deepening but also lost control over domestic financial aggregates.63 The financial crises that were experienced by these countries were accompanied by sharp contractions in GDP and reversals of financial deepening that had been brought about by financial reforms. The countries, which took a gradualist approach in liberalizing administrative controls over credit (Indonesia and Korea), did not experience significant losses of control over financial aggregates. Policies to reduce demarcations in lines of business between various types of institutions and reduce barriers to entry may have mixed results in promoting competition depending on the structure of the financial system. In some cases, it may result in an increase in the concentration of bank ownership. Increased competition may bring with it the unwanted baggage of financial institutions that become vulnerable because of over-extending themselves in bids to increase their market shares.

The large capital inflows that result from high domestic interest rates may pose some problems for domestic liquidity control. Uncertainty engendered by overvalued exchange rates may trigger capital flight against which capital controls tended to be ineffective. As noted above macroeconomic stability and a strong regulatory and supervisory framework have often been identified as pre requisites for successful financial

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63 The periods in parenthesis after each country reflect the period of reforms examined by Bisat et al (1992).
liberalization. However, Galbis notes that neither of these conditions was met in his sample of countries. While not contradicting this observation, he stressed the need for countries to accelerate the restoration of macroeconomic stability and strengthen the supervisory and regulatory frameworks if policy reversals are to be averted and the momentum of financial liberalization maintained.

The slow development of secondary capital markets and the institutional framework for open market operations undermine the desired switch to indirect instruments of monetary policy. The adoption of indirect instruments has seriously been hampered by the endurance of quasi fiscal distortions, the learning effect and slow progress in strengthening the supervisory and regulatory framework and poor coordination of monetary and debt management policies.

Financial liberalization objectives such as positive real interest rates, improved financial intermediation, the narrowing of spreads were achieved. Some countries' experiences show that neither gradual nor fast financial liberalization made a significant difference to saving and investment activities. Some improvements were also reported with respect to the efficiency of financial intermediation. In cases where controls had been too tight, there was a widening of spreads between lending and deposit rates after liberalization. In many countries, slower-than-expected progress was reported in addressing prudential and regulatory issues.

Simply focusing on making interest rates positive does not solve the problems of the financial sector. Very high positive real interest rates can be just as destabilizing as very negative ones. When financial liberalization is carried out in oligopolistic financial markets and under conditions of high and unstable inflation, there may be some overshooting in both nominal and real interest rates. Very high interest rates can trigger a considerable amount of distress borrowing and the associated moral hazard.

In the Cho and Khatkhate study, the liberalization of interest rates led to positive real interest rates and an integration of rates in formal and informal markets in many of the countries where this was not the case before liberalization. As measured by the ratio of M3/GDP, growth in the financial sectors of many countries increased. Positive real interest rates contributed to the growth of the financial sector, as did relative price stability. Competition among financial institutions increased as barriers to entry were removed. Evidence on the availability of long-term credit and the cost of intermediation
was mixed across the countries. In most cases, domestic interest rates became more sensitive to foreign interest rates.

All the Asian countries in the Cho and Khatkhate study experienced the problems of non-performing loans. South Korea minimized the impact of bad loans through substantial financial support from the government, tax allowances for writing off bad debts, concessional central bank credit to commercial banks, rescue packages for the corporate sector and a strong economic recovery. In Malaysia, the corporate sector was not exposed to shocks of high interest rates and thus bad debts did not become a major problem. The situation was more serious in the Philippines where the banking system virtually collapsed and in Indonesia, where the corporate sector was badly hit by high interest rate shocks. Sri Lanka's situation remained manageable, primarily because of a prudent and strict regulatory framework and timely actions by the government.

2.8. Monetary control and indirect instruments of monetary control

As discussed above, some of the justification for financial repression and the continued use of direct instruments of monetary control has to do with the belief that direct instruments accord the monetary authorities greater control over monetary policy. An appreciation of the implications of financial sector reforms for the attainment of monetary policy objectives in a changed environment requires an evaluation of the reforms on money demand, the money supply process and the monetary transmission mechanism. To set the context, the essential elements of basic macroeconomic accounting relationships are highlighted.

a. Basic Accounting Relationships

It is illustrative to use the macroeconomic accounts framework to highlight the sectoral balances between real and financial variables and in this case, focus on the nature of the link between the external sector and the monetary sector. This is also helpful in setting the context for a discussion of the possible effects of financial liberalization on economic variables. The standard national income identity is as follows:

\[ Y = C + I + G + (X-M) \]  \hspace{1cm} (2.29)

where \( Y \) is national income, \( C \) is consumption, \( I \) is investment, \( G \) is Government consumption, \( X \) are exports and \( M \) are imports. This means that income is equal to the
sum of expenditure by domestic residents and net exports. Aggregate spending by domestic residents can be shown as:

\[ E = C + I + G \]  

(2.30)

Combining 2.29 and 2.30 we get:

\[ Y = E + (X - M) \]  

(2.31)

Presented in terms of sectoral balances i.e. the domestic and external balances, the above equations can be written as:

\[ Y - E = X - M \]  

(2.32)

This suggests that net exports are identical to the excess of national income over aggregate spending by domestic residents. Another way of representing the aggregate identity in equation 2.29 can be derived by subtracting net taxes (T) from both sides and adding net international transfer receipts R to both sides to yield:

\[ Y + R - T = C + I + (G - T) + (X + R - M) \]  

(2.33)

G - T represents the government budget balance while X + R - M represents the current account balance (CA). Defining savings as the net of income and transfers and taxes and consumption as follows:

\[ S = Y + R - T - C \]  

(2.34)

yields a central identity on sectoral balances between the external and domestic sectors as follows:

\[ X + R - M = S - I + (T - G) \]  

(2.35)

This suggests that the current account balance is equal to the difference between national saving (private and public sector saving) and total investment. The external current account represents the rate at which an economy is adding to its net external assets. Arithmetically, the balance on the current account is equivalent to the difference between the overall balance and the capital account. Put differently, the current account balance is equal to the change in net official assets plus net capital flows and this identity can be depicted as:

\[ CA = \Delta NFA \]  

(2.36)
where NFA stands for the change in net foreign assets. Substituting the identity in equation 2.35 into equation 2.36 yields:

\[ S - I + T - G = \Delta NFA \]  
(2.37)

which links private and public sector savings with the changes in a country’s claims on the rest of the world.

Table 2.1. Balance Sheet of Monetary Authorities

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Foreign Assets (NFA)</td>
<td>--</td>
</tr>
<tr>
<td>Domestic Credit (DC)</td>
<td>High Powered Money (H) (Reserve Money)</td>
</tr>
<tr>
<td>Claims on government (net)</td>
<td>Currency outside banks</td>
</tr>
<tr>
<td>Claims on commercial banks</td>
<td>Reserves of commercial banks</td>
</tr>
<tr>
<td>Other items (net)(OIN)</td>
<td></td>
</tr>
</tbody>
</table>

Equation 2.37 represents a central relationship between all the sectors. This relationship can be used to illustrate the relationship between the balance of payments and the financial sector by focusing on the balance sheet of the central bank as shown in table 2.1 above.

The balance sheet identity is:

\[ NFA + DC + OIN = H \]  
(2.38)

and in terms of flows (changes), the identity would be:

\[ \Delta NFA = \Delta H - \Delta DC \]  
(2.39)

This relationship shows that a change in net foreign assets of the monetary authorities is equal to the gap between domestic credit creation and money creation. Changes in the monetary base reflect changes in the asset side of the balance sheet of the monetary authorities, which comprises three main elements, namely net foreign assets, domestic credit and other items net. This means that given domestic credit and other items net, an overall surplus in the balance of payments adds to the net foreign assets of the monetary authorities and thus adds to increases in reserve money and vice versa. The changes in the reserve money affect money supply through the money multiplier. Given this relationship,
how would monetary authorities contain the impact of variations in net foreign assets on the stock of money? It is easy to see how the monetary authorities may offset the contractionary or expansionary impact of changes in net foreign assets by expanding or reducing the expansion of domestic credit. The monetary authorities may also vary reserve requirements so as to alter the size of the multiplier through the money supply.

Extending the above balance sheet to the consolidated financial sector, the identity would be:

\[ \Delta NFA = \Delta M_2 - \Delta DC \]  

This forms a useful base for financial programming which is based on a data set comprising the monetary survey. According to this approach, a broad monetary aggregate is the intermediate target variable for monetary control. This intermediate target is assumed to have a stable and predictable relationship with output and inflation, the ultimate policy targets. The direct approach to monetary control under this framework relies on an estimate of the public's demand for money, which is consistent with specific targets of the rate of inflation and real output. It is important to note the two crucial assumptions of this approach: a stable demand for money function and that monetary authorities can control the supply of money directly. The sketch below illustrates the modus operandi of the direct approach to monetary control.
Figure 2.2. Simple Direct Approach to Monetary Control

A. Operational/Programme Targets  B. Intermediate Targets  C. Ultimate Targets

Direct control on net credit to government (CG) and indirect control on net credit to banks (CB) → Target for NFA → Control on Base Money → Control on M2 → Desired target for inflation and real output

Assumes a stable multiplier

Source: Roe and Sowa (1997, p. 224)

b. Implications of Liberalization for Monetary Control

As indicated above, the existence of a stable demand for money function is a crucial assumption in the calibration of monetary policy.64 A priori, one expects structural changes in the financial markets to affect the relationships between monetary variables and the real side of the economy. Income, prices, interest rates and exchange rates, the main determinants of the demand for money are likely to be affected by financial liberalization. Financial liberalization could cause a shift in the velocity of money or a change in the responsiveness of the demand for money function to changes in interest rates and income. This has implications for the relationship between instrument variables, intermediate targets and ultimate objectives of monetary policy. The successful implementation of monetary policy would therefore require knowledge of the behaviour of the variables underlying the demand for money function, the money supply process, the potential for currency substitution and capital mobility resulting from some of the policy changes.

Other concerns arise with respect to the efficacy of monetary policy and the scope for a more active use of indirect instruments of monetary policy in the context of financial liberalization. Financial liberalization and the adoption of indirect instruments of monetary

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64 Khan and Sundararajan (1992) point to the occasionally erroneous interpretation of the stability assumption as implying a constant velocity. They point out that what is required is that the demand for money or velocity be a predictable function of a few variables.
control feed on each other. As the process of financial liberalization proceeds beyond the banking system, it may lead to the emergence of some financial instruments that are difficult to keep track of and therefore pose some problems for monetary control. A more active interbank market in which dealers and brokers sell government as well as corporate financial instruments could emerge. It could become possible to integrate short and long-term yields through an active use of repurchase agreements.

The operations of such entities as factoring and leasing companies would not normally be subject to the implicit taxation of reserve requirements and it would be difficult to monitor the financial instruments in which they deal. If significant, the changes in these variables may lead to some instability in the demand for money which in turn poses problems for monetary policy. It becomes more difficult to establish the liquidity requirements of the economy and ensure the desired levels of credit and money. The experience of some countries undertaking financial liberalization seems to point to increases in the ratios of money and credit to gross domestic product and a decline in the ratio of currency to deposits (increased monetization).65

Implications of financial liberalization for the information content of monetary aggregates could usefully be examined by focusing on the demand for money function and three broad areas associated with financial liberalization. The three areas comprise, interest rate liberalization, the shift to indirect monetary policy instruments and measures to improve the functioning and depth of financial markets. The freeing of interest rates to better reflect the economic return and riskiness of financial assets could lead to portfolio shifts. However, the impact on the demand for money function crucially depends on the monetary aggregate in question and the interest rates that are liberalized. For example, an increase in time deposit interest rates might imply an increase in the demand for broad money and a decline in the demand for narrow money. While it might be expected that demand for money function specifications containing the correct interest rate variables would reflect portfolio shifts to the change in interest determination, this would not necessarily be the case in situations where interest rates have no history of variation sufficient to measure their effects on portfolio shifts. Financial liberalization may bring about changes in the information content of demand for money specifications, as hitherto latent roles for interest rates become more prominent.

The adoption of indirect instruments of monetary control implies a loss of some degree of control of monetary variables and increased uncertainty concerning the volume of credit and the demand for money. Increasing integration into the international capital markets that is normally associated with financial liberalization may add uncertainty in the demand for money if speculative capital movements are induced. When capital movement is low or restricted as is typically the case in repressed financial systems, the impact of foreign determinants of money demand is minimal and easy to contain. The monetary authorities may control money market interest rate through indirect monetary policy instruments but the volume of credit and other variables are influenced by such variables such as inflation expectations. The elimination of credit ceilings could result in increased borrowing and a shift in the demand for money. Combined with financial innovation, these circumstances render the estimation of the demand for money difficult. As pointed out above, the stability of the estimated relationship is a crucial aspect for the formulation of monetary policy. Stability in turn is sensitive to the public's perceptions about the soundness of the banking system.

Measures to improve financial intermediation could lead to both portfolio shifts and changes in the sensitivity of money demand to changes in incomes and interest rates. Changes in the regulation of financial institutions could lead to reassessments of the relative risks of different financial assets and result in both discrete portfolio adjustments and a change in the interest elasticity of money demand. Financial innovation could lead to portfolio shifts away from monetary assets.

c. Liberalization and the demand for money estimates

The experiences of many developing countries before financial liberalization indicate the prevalence of virtually unvaried observable interest rates and the dominance of direct instruments of monetary policy. Some researchers use demand for money specifications in which they incorporate proxies to reflect credit constraint in the formal markets. In these circumstances, observable interest rates do not reflect money market conditions. The limited range of financial assets restricts economic agents to holding their wealth in money or real goods and credit rationing becomes a powerful channel for monetary policy.
A number of studies have found stable demand for money function with long-run income elasticities of broad money in the range 1.25 to 1.50. The long-run income elasticity of narrow money was somewhat lower but tended to be greater than unity (Wong 1991). The size of these elasticities was attributed to monetization and the lack of alternative financial assets in which to hold savings. Tseng and Corker (1990) used an error correction model in a study of nine Asian countries to test the predictability of short-run deviations from long-run equilibrium and found a stable long-run demand function for at least one of the monetary aggregates used except in the case of Thailand. The countries included are Indonesia, South Korea, Malaysia, Myanmar, Nepal, the Philippines, Singapore, Sri Lanka and Thailand. The sample periods covered are from the early 1970s to 1989. The linkages between narrow money on one hand and income and interest rates on the other, was found to be more reliable in half the countries while broad money was more reliable in the other group of countries. A stable short-run demand for money was found to exist in only four of the countries.

In a review essay, Boughton (1992) compared various demand for money studies focusing mainly on industrial countries and noted the importance of financial innovation and shifts in monetary policy regimes but concluded that the demand for money is not generally less stable after reforms than it was before them. Boughton finds that in addition to financial innovation and regime shifts, inflationary expectations, expected exchange rate changes, volatility in output and shifts in the term structure of interest rates may have been important determinants of the changes in the demand for money in some of the countries.

Some studies have found income elasticities of demand for money that are less than unity. In these circumstances, volatility in the growth rate of real income systematically affects velocity even with no shift in the demand function for real balances. The strategy to set a fixed target for monetary growth in circumstances where velocity is not stable could be misleading unless one properly factors in the effect of the income elasticity of money demand. As an increasing proportion of money balances pays interest

66 Interest rates in informal financial markets may not be recorded and therefore nonobservable. Interest rates in the informal markets reflect the cost of credit or the opportunity cost of holding money.

67 The suggestion here is also that the information content of monetary aggregates is not necessarily diminished if proper account is taken of the effect of the income elasticity of demand for money.
rates that are closer to short-term market rates, the elasticity of money demand with respect to short-term market rates may be low. Long-term rates may be a better proxy for the substitute yield. Shifts in the short-term structure of interest rates may increase the demand for money.

Financial innovation and the changing relationship between monetary aggregates and real aggregates have prompted some central banks to focus on narrower monetary aggregates, which can be monitored from the balance sheet of the central bank. However much preferred the strategy may be, it is also fraught with uncertainties in estimating the demand for reserve money that in turn depends on portfolio allocations between currency in circulation and bank deposits. A way around some of these problems would be for the central bank to monitor several aggregates both at the level of its balance sheet as well as at a much broader level of aggregation and compare their implications. To facilitate the adoption of indirect instruments of monetary control, procedures relating to treasury bill auctions and refinancing instruments need to precede the use of the instruments. Related to this, there is need for close coordination of the debt management strategy of the ministry of finance and the liquidity management activities of the central bank. It is particularly important to reform the methods of Government finance in order to reduce and/or eliminate the monetization of fiscal deficits. The strengthening of secondary and repurchase markets for treasury bills and other securities fosters the effectiveness of indirect instruments and enhances confidence in these instruments.

2.9. The Case for and Constraints on Indirect Instruments of Monetary Policy

The adoption of indirect instruments of monetary control has become an integral part of financial liberalization. However, indirect instruments of monetary control are not without pitfalls. This is especially the case when they are introduced under less than ideal conditions. Many analysts counsel against premature adoption of indirect instruments especially if the necessary institutional support and concomitant policies are lacking. It is further suggested that once adopted, pragmatism should guide the speed of transition (Alexander et al, 1995).

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68 Wong (1991) advocates the temporary retention of some of the less distorting measures such as limiting the rate of credit expansion to that of deposit growth and imposition of maximum interest rate spreads in order to prevent excessive interest rate fluctuations and credit expansion when indirect measures are not yet fully operational.
Monetary controls can be achieved through market intervention measures exerted by the central bank to affect underlying conditions of demand and supply of liquidity, direct and non market based controls on the balance sheets of banks in the form of portfolio restrictions and other interventions. The market-based forms of intervention include open market operations, discounting policies, and repurchase arrangements. Portfolio restrictions include reserve requirements, liquid asset ratios and direct controls, which comprise both quantitative and qualitative limits on banks (credit ceilings, directed lending, interest rate controls, and selective credit mechanisms. These two broad categories are coterminous with the broad distinction between direct and indirect instruments of monetary control. There are other forms of monetary control that do not fall into either of the above-described methods and examples of such are import controls and prior import deposits.

As pointed out by Alexander et al, influencing market conditions does not preclude the possibility of the central bank targeting certain key interest rates or quantities of credit. The difference is that market mechanism allows participants in the money market to adapt to the settings of one of these parameters. Indirect instruments generally influence credit money and interest rates indirectly through changes in the supply of bank reserves effected via transactions with banks and non-banks at market related prices on a voluntary basis.

Until the 1970s, the use of centrally controlled limits on aggregate and sectoral expansion of credit was widespread even among industrial countries. The move towards indirect instruments is more recent in African economies where Roe and Sowa (1997) argue that IMF stabilization programmes containing credit ceilings gave implicit support for the use of direct controls. High cash reserves and liquid asset requirements have been an important element of direct controls. In countries with high budget deficits, direct controls provide easy access to deficit financing.

The allure for direct controls resides in the scope for precise methods to control the main monetary aggregates. Control over monetary aggregates, the ability to direct credit in specific ways and the ability to forestall large swings in interest rates provide policy makers with a potent instrument for monetary control. Furthermore, these methods of control are not unduly constrained by the lack of depth in financial and capital markets and limited financial instruments. However, the perceived benefits of direct controls have to be weighed against the costs in terms of efficiency and administrative difficulties. The main arguments in favour of the adoption of indirect instruments of monetary policy revolve around administrative considerations and allocative efficiency.
Direct controls are often cumbersome, difficult to administer and tend to create the scope for corruption and rent seeking behaviour. Excessive controls on some financial instruments and implicit taxes which they often imply can result in financial disintermediation in favour of financial instruments that are not subject to controls that are perceived to be negative. Financial institutions tend to be innovative and will usually adopt strategies to offset the adverse effects of financial repression. They can compensate for the adverse effects of controls on both the quantity and prices of credit on their returns by adding fees and commissions. Such adaptations run counter to the intentions of policy makers seeking to control credit through administrative controls. Moreover, direct controls tend to obscure the true cost of credit and endanger the health of the financial system through adverse selection. In cases where the controls on the financial sector are effective, financial institutions tend to adopt portfolio positions that are significantly different from what they would adopt under market conditions.

Administrative controls distort the risk/return situation of bank lending. This distortion generally leads to lower returns and higher risks for banks. The economy also loses the efficiency gains associated with the screening and monitoring of credit risk by banks. The long and short-term effects of the distortion-induced deterioration in the portfolios of financial institutions have significant effects on economic performance, financial sector development and monetary management. For example, effective credit ceilings tend to result in the build up of excess liquidity in financial institutions. This excess liquidity in turn reduces banks' incentives to mobilize deposits and that may reduce the level of financial intermediation and the aggregate level of saving. It also reduces the effectiveness of indirect instruments of monetary control and stifles the development of active interbank and other short-term money markets.

Roe and Sowa (1997) highlight the quality of the portfolio of the domestic banking system and the size of the fiscal deficit as two critical factors impinging on the successful adoption of indirect instruments of monetary control. Insolvent banks are ill equipped to respond to market based signals of monetary management and would thus be an important constraint on the operations of indirect instruments. Popiel (1994) points to the prevalence of banking distress in African economies during the period 1983–93 and suggests that more than 20 African countries needed to undertake bank restructuring programmes, the cost of which fell within the range 7–15 percent of the respective GDPs of those countries.

Governments with large fiscal deficits are unlikely to give up the easy sources of implicit taxation associated with financial repression. Fiscal adjustments that would be
required of such governments are often large and considered difficult to achieve in a short time frame. Additionally, governments accustomed to bank borrowing at controlled interest rates would find it difficult to accept the additional costs of market determined interest rates especially in the absence of a substantial reduction/elimination of the need to borrow. Substantial growth in the monetary base that is associated with the financing of large fiscal deficits would obviously negate efforts to tighten credit.

Bail out operations that may become necessary to address distressed banking systems may constitute a further constraint on the use of indirect instruments of monetary policy as related costs usually end up as increased fiscal deficits. Roe and Sowa (1997) point out that even if the two critical factors cited above—the asset quality of domestic banking systems and the size of the fiscal deficit—are initially favourable, there is the difficult issue of sequencing. There seems to be something of a paradox in that the success of indirect instruments of control hinges importantly on financial deepening which is constrained by the continued use of direct methods of control, a point alluded to by Roe and Sowa (1997), Johnston and Brekk (1990) and Popiel (1994).

Transition to indirect instruments becomes difficult and often requires the adoption of intermediate positions to give time for the development of the necessary framework for indirect instruments. As noted above, excess liquidity inhibits the development of vibrant interbank markets and other short-term money markets. Furthermore, central bank efforts to influence lending indirectly through small changes in interest rates are ineffective under these circumstances. Many commentators counsel caution in the pace of adoption of indirect instruments monetary control and suggest that many African countries need to be even more cautious because of the thinness of their financial markets. Some (Honohan and O’Connell, 1997), view the current push to indirect instruments of monetary control more as a desire to confront the problems of fiscal profligacy and political pressures and controls on central banks than the desire to enhance monetary control per se.

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69 The experiences of some countries where financial sector growth and development took place in the absence of a full transition to indirect instruments indicates that the paradox need not exist and is not necessarily a binding constraint.

70 International financial institutions (IFIs) are viewed as the main advocates of this move.
2.10. Summary of Issues

Economists have expressed different views about the relationship between the financial sector and the real economy. Notions that the financial sector automatically responds to economic activity or that it is an inconsequential addendum to it are no longer tenable. Financial repression comprises various forms of distortions including interest ceilings which lead to negative real interest rates, directed lending which leads to inefficient resource allocation and market fragmentation and exchange controls which lead to the emergence informal markets. Work by MS has been most influential in guiding the debates and policy on the financial sector in developing countries.

The essence of the MS perspective on financial development is that financial repression is inimical to saving, investment and growth. The policy recommendations are that financial liberalization together with reforms in exchange, trade and fiscal policies would improve resource allocation, saving, investment and ultimately, economic growth. Some models formalizing the MS approach focus on the effects of financial liberalization on either the quantity or the quality of investment. The motivations for financial liberalization include the trend towards less government, a response to the integration of world financial markets and some realization that controls do not work but instead foment wasteful practices of rent seeking behaviour.

The early vintages of financial literature did not pay particular attention to the market structures of the financial systems in developing countries, which tend to be oligopolistic and operate like cartels. Much of the literature also focused on the banking sector and did not consider the potential role of equity markets in fostering efficiency in the allocation of capital and risk sharing in a liberalized environment. Such a focus could be justified on the basis that commercial banks dominate the financial sectors in developing countries. Disappointing country experiences and the continued allure of financial repression and direct instruments of monetary control underscored the necessity for more comprehensive financial sector reforms. These experiences have led to the emergence of literature seeking to strengthen the MS paradigm. This literature specifies conditions that are necessary for successful financial liberalization, the transition to indirect instruments of monetary policy, regulatory and supervisory issues and institution building.

The main elements of financial sector reforms have been the liberalization of interest rates, the elimination of directed credit, the adoption of indirect instruments of
monetary policy, the restructuring of commercial banks, the development of financial markets and the improvement of financial infrastructure including payment systems. Many studies have examined the channels through which the financial sector affects and is affected by economic developments. The main empirical work seeking to establish the relationship between financial liberalization and economic growth has focused on the components of the transmission mechanisms suggested by the financial repression hypothesis of MS. These are real interest rates and saving; credit availability and investment; and the relationship between real interest rates and the productivity of investment. The MS position is that financial liberalization has a positive effect on the rate of economic growth in both the short and medium runs.

Some empirical studies have demonstrated the positive correlation between financial development and economic growth. The nature of the causal relationships remains an open question in specific country contexts. Capital theoretic perspectives of economic growth have highlighted the importance of the savings and investment. Theoretical advances have emerged from the renewed interest in growth theory and financial growth models, which incorporate both endogenous growth and endogenous financial institutions. Endogenous growth models specifically include financial sector variables among explanatory variables for economic growth. It is postulated that financial liberalization influences economic growth and efficiency through the volume of financial intermediation, the real rate of interest representing the cost of capital and the efficiency of the financial sector.

Although the empirical question about the direction of causality among growth, savings and investment is unsettled, evidence from the economic growth experiences of some countries and their high savings rates points to a strong positive correlation between savings rates, investment rates and economic growth. Casual empiricism shows that one of the characteristics of the Asian countries, which enjoyed phenomenal growth rates before the recent financial sector crises, had high savings rates. Thus, the interaction between savings and investment is quintessential for increasing the rate of economic growth. Establishing causality between financial liberalization and economic growth is difficult because more often than not, financial sector reforms are an integral part of economic reforms in other areas. Researchers have found conflicting results regarding the relationship between interest rates and investment.

Neo-structuralists associate financial liberalization with accelerating inflation and lower growth in the short-run. Other critics have faulted the early vintages of the financial
repression paradigm for being oblivious to the possibility of endogenous constraints such as imperfect information being major impediments to efficient credit allocation even when banks are freed from interest ceilings (exogenous constraint). In this vain, the credit rationing literature of Stiglitz and Weiss (1981) and others explains why there is rationing in competitive markets. The work of Stiglitz and Weiss (1981) strikes at the core of the assumption that credit interest rate liberalization will eliminate credit rationing. According to this literature, such credit rationing may well be an efficient outcome of the rational behaviour of lenders and borrowers. Accordingly, creditors find it more profitable to respond to excess demand for credit by rationing it instead of increasing the interest rate. Under these circumstances, governments may feel inclined to seek a second best solution by intervening in credit markets. It also emerges that it may be inappropriate to view all forms of government intervention in financial markets as distortionary and sub-optimal.

Cho (1986) extends the credit rationing literature to suggest that the development of equity markets may be a solution to the problems of information asymmetry and adverse selection and the improvement of efficiency in the allocation of capital.

Financial liberalization entails some weakening of the bases of revenue hitherto derived from seigniorage and inflation tax. Therefore, governments experiencing fiscal problems in the context of repressed financial systems are hesitant to undertake a liberalization of such financial systems. Financial repression increases short-term inflation tax revenues but hurts long-run growth and revenue. The empirical implications of the financial liberalization literature is that financially repressed countries tend to have higher inflation rates, lower real interest rates, higher base money and lower growth than countries that are financially developed. Without government commitment to fiscal reforms, financial liberalization could have disastrous results befitting Diaz-Alejandro’s (1985) “Goodbye financial repression, hello financial crush” verdict.

Income, prices, interest rates and exchange rates, the main determinants of the demand for money are likely to be affected by financial liberalization. This may result in some instability in the money demand function that in turn would make it difficult for the monetary authorities to calibrate monetary policy. The freeing of interest rates to better reflect the economic return and risk of financial assets could lead to portfolio shifts. Increasing integration into the international capital markets that is normally associated with financial liberalization may add uncertainty in the demand for money if speculative capital movements are induced.
Although the results can be country-specific to reflect differences in conditions, modalities and contexts, useful lessons can be derived from the experiences of other countries. Country experiences seem to confirm the need for supportive conditions in the form of macroeconomic stability, strong regulatory frameworks and political commitment to reforms.

Motivated by the foregoing discussion of theoretical issues the rest of the chapters seek to establish the existence and forms of financial repression in Zimbabwe prior to liberalization and establish the empirical relationships among the macroeconomic variables that are problematic in the implementation of the program. In particular, attention is paid to the evolution of monetary aggregates, the high level of inflation and interest rates and the impact of these measures on the economy.
CHAPTER 3. INSTITUTIONAL AND MONETARY POLICY FRAMEWORK PRIOR TO FINANCIAL LIBERALIZATION

3.1. Introduction

This chapter describes the institutional and structural features of Zimbabwe’s financial system and analyses the monetary policy framework and instruments before 1991. This is set against the background of some stylized facts about financial systems in Sub-Saharan Africa (SSA). The historical evolution of the financial system from the currency board arrangement before 1965 to the rationing regime between 1965 and 1990 and a market regime is described. The extent of the Government’s involvement in the financial sector, the regulatory framework and the nature of the exchange control regime and inter-bank market are examined. The linkages, which may have constrained the level of competition among financial institutions, are identified.

3.2. Some Stylized Facts about Financial Systems in Sub-Saharan Africa

The state of financial markets in Africa is one of the main internal structural constraints, which together with other factors, explains the poor economic performance in Sub-Saharan Africa (SSA). Financial systems in SSA share some common features. These features or stylized facts are well documented by Aryeetey et al (1997) IMF (1998), Popiel (1996), Senbet (1996) and Ncube (1997).

Some of the features of the financial systems in SSA include: low levels of monetization; high incidence of bad loan portfolios; political interference with the monetary authorities because of the lack of central bank independence; large spreads between saving and lending rates; shallow interbank markets; underdeveloped payment systems; political and economic uncertainties which tend to encourage short-term speculative investments; weak regulatory and supervisory frameworks; fragmented financial markets; and inadequate capacity to manage liquidity.

Commercial banks tend to be the dominant players in the financial system because of the underdevelopment of capital markets. In this environment, lending rates do not reflect the credit risk of borrowers primarily because the monetary authorities fix base lending rates. The failure to use the price mechanism (interest rate variations) to discriminate among borrowers often promotes oligopolistic banking structures and the associated inefficiencies in the allocation of scarce financial resources, not to mention inefficient banking systems. The all too common tendency for governments to limit the
size of foreign banks and promote universal banking reinforces inefficiencies and oligopolistic banking practices.71

Prudential controls and the supervisory framework are generally noted to be weak in SSA. The loci for controls, licensing and resolution of banking problems tend to be diffuse and often result in forbearance towards weak banks and significant bail out and resolution costs being paid by governments or depositors. Many of the markets suffer from imperfect information, incentive conflicts, and a host of market imperfections such as transaction costs, taxes and regulatory and institutional impediments to the arbitrage process in financial markets (Aryeetey et al 1997). The absence of opportunities for diversification and trading of risk among investors with different return-risk preferences and liquidity needs discourages saving in the financial form.

The pricing of risks fails to provide a proper guide to an optimal allocation of resources. In response, investors resort to financial saving within close social circles or over-invest in real assets. Both actions are subject to limitations; the former suffers from co-variate risk or incomplete risk sharing while real asset holdings suffer from liquidity constraints. Furthermore, incomplete risk sharing and liquidity premiums lead to higher costs of raising funds and possible avoidance of otherwise profitable projects.

Asymmetric information and market fragmentation that characterize the financial markets in SSA often lead to adverse selection in which some borrowers with safe and high return projects lack access to capital. Aryeetey and Udry (1997) suggest that asymmetric information may lead to market segmentation when external (institutional) lenders despite their advantage with respect to the cost of capital, find it difficult to break into the local market because of informational disadvantages relative to local creditors. The integration of credit markets is difficult to attain under these circumstances. The continuation of such fragmentation of markets leads to inefficiency because creditors with access to relatively cheaper funds fail to penetrate local markets.

71 Universal banking is a practice whereby commercial banks take deposits, make loans, underwrite corporate debt, act as investment advisers to large corporate clients and can take equity positions in the corporate sector. Among the advantages cited for universal banking is the ability to effectively use customer information and operate as financial supermarkets. The down side has to do with the possibility of fostering the concentration of economic power in a few large banking institutions which can also hold equity positions in companies they lend to and thus create minefields of self dealing.
Government intervention in financial systems in SSA has tended to be more widespread and thus more often than not, the financial sector has been over managed and subject to the conflict between the private interests of policy makers. The assumption of benevolent social guardians that is often used to characterize bureaucrats and politicians ignores the fact that they are also subject to conflicts of interest and agency problems which afflict the private sector. However, the difference is that the private sector has more efficient mechanisms for enforcing discipline. Financial liberalization is viewed as a means to address these problems and make financial systems more efficient and responsive to market signals. These efforts have generally taken place in the context of broader objectives of macroeconomic stabilization.

Among the African countries undertaking adjustment programmes, the thrust of financial sector policies has been a conscious shift from the repressive regimes prevalent during the pre-adjustment era. Under financial repression, governments intervened directly in financial markets and determined the flow of credit through extensive use of subsidies, interest rate ceilings, asset prescription, directed credit, restrictions to entry into banking business and restrictions on capital transactions with foreigners. High-unremunerated reserve requirements, which were a common feature of these financial systems, tended to encourage disintermediation, as they were a tax on financial intermediation.

Some governments supplement their weak revenue bases with revenue derived through seigniorage and other forms of tax on the financial sector. This is expected to ensure the availability of cheap funds for financing budget deficits. Asset prescription and interest rate ceilings have been among the main ways of achieving this objective. One result of such restrictions has been a crowding out of the private sector. Under these restrictive conditions, banks often lack the capacity for risk assessment and prudent management of loan portfolios. Investment in information capital, which is important for the development of financial systems, is often relegated to secondary importance.

Market incompleteness and incomplete risk sharing are some of the set-backs facing the financial systems in Africa. This detracts from an efficient allocation of financial resources because investors are unable to smooth consumption over time and diversify risk across a variety of securities with imperfectly correlated cash flow streams. Many of the above cited stylized facts were present in the financial system in Zimbabwe as indicated below.
3.3. Financial Institutions and Government Intervention in Zimbabwe

a. Institutions and market structure

Table 3.1 shows the range of banking institutions and changes in their numbers for selected years since 1990. Before liberalization, the financial system comprised the Reserve Bank of Zimbabwe (RBZ) and the range of institutions shown in table 3.1. In addition, there were over fifty insurance companies, several development finance institutions, a large number of pension funds and a stock exchange. The financial sector was highly segmented and dominated by a few players in each of the sub-markets. The segmentation tended to be reinforced by the application of different sets of regulations, prudential requirements and taxation.

Table 3.1. Composition of the Banking Sector for 1980-99

<table>
<thead>
<tr>
<th></th>
<th>1990</th>
<th>1996</th>
<th>1997</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial banks</td>
<td>5</td>
<td>5</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Merchant banks 1/</td>
<td>4</td>
<td>10</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Finance houses</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Discount houses</td>
<td>2</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Building societies</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Post Office Savings Bank</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Annual Reports of the Banking Supervision Department and RBZ QESR

1/ The decline in the number of merchant banks reflects the closure of United Merchant Bank and a merger of some institutions.

Table 3.2 presents the relative asset sizes both for individual institutions and for categories relative to the total for banking institutions registered as at end 1999. Rankings within groups are also shown for 1999 but the average shares of financial savings pertain to the period 1980-96.

As reflected by their share of assets in the system, commercial banks are the dominant players accounting for 56 percent while merchant banks and building societies account for 20 percent and 15 percent respectively. In terms of financial savings commercial banks accounted for the highest share at 35 percent although they were dwarfed by the combined share of building societies and the POSB in financial savings which was 50 percent. In recent years, the share of commercial banks in savings mobilization has declined somewhat as non-banks have increased their relative shares. The structure of asset holdings within groups shows high levels of concentration among few players. The shares for the largest two and three institutions in each category are presented in table 3.3.
Table 3.2 Zimbabwe: Registered Banking Institutions as at 31 December 1999

<table>
<thead>
<tr>
<th>Name</th>
<th>Total assets (z$ millions)</th>
<th>Share of assets within groups</th>
<th>Share of savings in system 1980-96</th>
<th>Share of assets in system Dec. 1999</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMMERCIAL BANKS</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Standard Chartered Bank Zimbabwe Limited</td>
<td>96580.9</td>
<td>100</td>
<td>35.0</td>
<td>56.4</td>
<td>-</td>
</tr>
<tr>
<td>Barclays Bank of Zimbabwe Limited</td>
<td>32858.1</td>
<td>34.0</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Commercial Bank of Zimbabwe Limited</td>
<td>24938.0</td>
<td>25.8</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Zimbabwe Banking Corporation Limited</td>
<td>13545.8</td>
<td>14.0</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Stanbic Bank Zimbabwe Limited</td>
<td>10259.4</td>
<td>10.6</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Time Bank of Zimbabwe Limited</td>
<td>8736.6</td>
<td>9.0</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>First Banking Corporation Limited</td>
<td>3334.6</td>
<td>3.5</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Metropolitan Bank of Zimbabwe Limited</td>
<td>2081.5</td>
<td>2.2</td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td><strong>MERCHANT BANKS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Merchant Bank of Zimbabwe Limited</td>
<td>34157.2</td>
<td>100</td>
<td>5.8</td>
<td>19.9</td>
<td>-</td>
</tr>
<tr>
<td>National Merchant Bank of Zimbabwe Limited</td>
<td>10131.4</td>
<td>29.7</td>
<td></td>
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<tr>
<td>Merchant Bank of Central Africa Limited</td>
<td>6847.8</td>
<td>20.0</td>
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<tr>
<td>Trust Merchant Bank Limited</td>
<td>6161.6</td>
<td>18.0</td>
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<tr>
<td>Kingdom Financial Services Limited</td>
<td>5182.4</td>
<td>15.2</td>
<td></td>
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<tr>
<td>Universal Merchant Bank Zimbabwe Limited</td>
<td>3598.1</td>
<td>10.5</td>
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<tr>
<td>Trade and Investment Bank Limited</td>
<td>1183.3</td>
<td>3.5</td>
<td></td>
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</tr>
<tr>
<td>Standard Chartered Merchant Bank Zimbabwe Limited</td>
<td>957.3</td>
<td>2.8</td>
<td></td>
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<tr>
<td><strong>BUILDING SOCIETIES</strong></td>
<td></td>
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<tr>
<td>Central African Building Society</td>
<td>24765.3</td>
<td>100</td>
<td>27.7</td>
<td>14.5</td>
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<tr>
<td>Beverley Building Society</td>
<td>10902.2</td>
<td>44.0</td>
<td></td>
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<tr>
<td>Founders Building Society</td>
<td>7005.1</td>
<td>28.3</td>
<td></td>
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<tr>
<td>Zimbabwe Building Society</td>
<td>3883.3</td>
<td>15.7</td>
<td></td>
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<tr>
<td>First National Building Society</td>
<td>2049.7</td>
<td>8.3</td>
<td></td>
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<td>4</td>
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<tr>
<td><strong>DISCOUNT HOUSES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BARD Discount House Limited</td>
<td>3446.1</td>
<td>100</td>
<td></td>
<td></td>
<td>-</td>
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<tr>
<td>Intermarket Discount House Limited</td>
<td>828.8</td>
<td>24.1</td>
<td></td>
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<tr>
<td>National Discount House Limited</td>
<td>618.5</td>
<td>17.9</td>
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<tr>
<td>Rapid Discount House Limited</td>
<td>577.1</td>
<td>16.8</td>
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<tr>
<td><strong>FINANCE HOUSES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UDC Limited</td>
<td>2212.4</td>
<td>31.9</td>
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<tr>
<td>Leasing Company of Zimbabwe Limited</td>
<td>1616.0</td>
<td>23.3</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Stannic Finance Limited</td>
<td>1006.0</td>
<td>14.5</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Scotiafin Limited</td>
<td>1015.5</td>
<td>14.7</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Fincor Finance Corporation Limited</td>
<td>973.3</td>
<td>14.1</td>
<td></td>
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<tr>
<td>Zimbabwe Development Bank Financial Services Limited</td>
<td>102.5</td>
<td>1.5</td>
<td></td>
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<tr>
<td><strong>POST OFFICE SAVINGS BANK (POSB)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sources: Supervision and Surveillance Annual Report, 1999, RBZ and QESR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The largest three commercial banks account for 74 percent of the market share and this confirms the idea of dominance by a few players in what turns out to be an oligopolistic structure. The situation is similar for all the categories as shown in the table. The financial system was highly segmented and with concentrations of power in a few institutions within sub-markets. Legal guidelines delineate the kinds of activities, which the various types of institutions are authorized to undertake. Table 3.4 shows the range of financial institutions and their respective ranges of activities.
Table 3.3. Zimbabwe: Concentration in asset Holdings

<table>
<thead>
<tr>
<th>Institution</th>
<th>Share of Assets within sub-group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial banks</td>
<td></td>
</tr>
<tr>
<td>Largest</td>
<td>59</td>
</tr>
<tr>
<td>Largest 2 banks</td>
<td>74</td>
</tr>
<tr>
<td>Merchant Banks</td>
<td></td>
</tr>
<tr>
<td>Largest</td>
<td>50</td>
</tr>
<tr>
<td>Largest 2</td>
<td>68</td>
</tr>
<tr>
<td>Building Societies</td>
<td></td>
</tr>
<tr>
<td>Largest</td>
<td>72.3</td>
</tr>
<tr>
<td>Largest 2</td>
<td>88</td>
</tr>
<tr>
<td>Discount Houses</td>
<td></td>
</tr>
<tr>
<td>Largest</td>
<td>42</td>
</tr>
<tr>
<td>Largest 2</td>
<td>68</td>
</tr>
<tr>
<td>Finance Houses</td>
<td></td>
</tr>
<tr>
<td>Largest</td>
<td>55.2</td>
</tr>
<tr>
<td>Largest 2</td>
<td>69.7</td>
</tr>
</tbody>
</table>

Source: Supervision and Surveillance Annual Report 1999, RBZ.

Until recently, the statutes guiding operations of the financial sector were dated and discordant with a liberalized environment. Under these statutes, the financial sector is segmented—with a small number of participants in each segment—and comprises private, state owned or joint-owned financial institutions. Although they may be deposit takers, different types of institutions are subject to different regulatory and prudential requirements. Cases in point are building societies and the POSB, which take deposits but are exempted from reserve requirements. The selective application of prudential requirements and other forms of differential treatment have often raised concerns about the playing field not being level. Merchant banks do not offer checking accounts and cannot participate in the cheque clearing system.

In the pre-reform era, discount houses enjoyed the monopoly of being the intermediaries between the RBZ and other financial institutions and with that, access to the RBZ discount window, which was always at their disposal. They would accept call money from various financial and non-financial institutions and invest it in short-term financial instruments. They offered wholesale financing of money market paper and acted as the primary dealers/receivers of treasury bills from the monetary authorities and thus controlled the liquidity of the financial system. Discount houses were the market makers.

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72 Since the revised Banking and RBZ Acts did not become operational before 1999, the reference to statutes here pertains mostly to the old regime.
in the money market and they performed this function by acting as intermediaries between the RBZ and financial institutions. In turn, the RBZ provided its lender of last resort function and conducted open market operations through them.

Table 3.4. Zimbabwe: Types of Banking Institutions and their Functions as at end 1999

<table>
<thead>
<tr>
<th>TYPE OF INSTITUTION</th>
<th>TOTAL</th>
<th>MAIN FUNCTIONS/CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMMERCIAL BANKS</td>
<td>8</td>
<td>Accept demand, savings and time deposits withdrawable by cheque or otherwise; Provide overdrafts and short to medium term loans; Provide foreign exchange facilities; Accept and discount of bills of exchange; Provide financial and investment advice; and Participate in the inter-bank clearing system.</td>
</tr>
<tr>
<td>MERCHANT BANKS</td>
<td>8</td>
<td>Accept call and time deposits; Issue negotiable certificates of deposit; Provide foreign exchange facilities; Facilitate trade through granting of acceptance; Facilitate and negotiate offshore financing; Corporate financing through: a) share issues; b) rights issues; c) underwriting; d) mergers and acquisitions; and e) private placements.</td>
</tr>
<tr>
<td>FINANCE HOUSES</td>
<td>6</td>
<td>Accept time deposits; Provide hire purchase facilities; Provide leasing/factoring facilities; and Provide short and medium term loans.</td>
</tr>
<tr>
<td>DISCOUNT HOUSES</td>
<td>6</td>
<td>Accept call money and time deposits; Deal mainly in short term assets such as treasury bills, bills of exchange and negotiable certificates of deposit.</td>
</tr>
<tr>
<td>BUILDING SOCIETIES</td>
<td>5</td>
<td>Provide mortgage finance for residential, commercial and industrial properties. Accept savings, fixed and share deposits.</td>
</tr>
<tr>
<td>POST OFFICE SAVINGS BANK</td>
<td>1</td>
<td>Accept savings and fixed deposits; and Invest in Government securities and money market instruments.</td>
</tr>
</tbody>
</table>

Source: Supervision and Surveillance Annual Report, 1999, RBZ

Discount houses were authorized to deal in bankers’ acceptances, negotiable certificates of deposit, call money and treasury bills, Agricultural Marketing Authority bills, Government stock, Municipal Stock and Electricity Supply Commission Stock and were not subject to reserve requirements as were acceptance houses and commercial banks.

With a few exceptions, the liabilities of finance houses comprise mostly time deposits and this is consistent with their long-term activities. The leasing and hire purchase operations of these institutions have tended to be concentrated in the transport sector. These institutions are mostly subsidiaries of commercial banks. Building societies are exempt from legal reserve requirements on their deposits and enjoy special tax
exemptions on some category of their shares. However, they are required to keep 10 percent of their assets in short-term instruments and are subject to interest rate controls on mortgages to various categories of consumers. The exemption from reserve requirements and the asset prescription had implications for the competitiveness of these institutions in mobilizing funds especially as short-term money market rates surged. Building societies have occasionally fallen short of funds to finance mortgages. The government allowed them to raise funds by issuing Negotiable Certificates of Deposits (NCDs). Since then, building societies invested heavily in the money market such that mortgage advances became a much smaller proportion of their portfolios. One of the sources of concern among financial institutions has been the blurring of the distinctions between the activities of commercial banks and building societies.

The POSB is a statutoly corporation administered by the Post and Telecommunications Corporation (PTC). It is exempted from reserve requirements and capital requirements. The tax exemption of interest earnings on deposits held with the POSB gives this institution an advantage, relative to building societies, in attracting deposits. In the past, the POSB served as an assured source of funding for public sector deficits. As discussed in chapter 1, the financial sector also includes several financial institutions that are partially or wholly owned by the government. The purpose of these institutions is to direct funds to specific sectors such as agriculture and industry. Included among these are the Agricultural Finance Corporation (AFC) the Industrial Development Corporation (IDC), the Zimbabwe Development Bank (ZDB), Credit guarantee Company, the Small Enterprises Development Company (SEDCO), Zimbabwe Reinsurance Corporation (ZimRE) and the National Insurance (NSSA). There are many pension funds, two venture capital companies and private insurance companies. Pension funds and insurance companies are statutorily required to invest 45 percent of their assets in government and municipal stock.

The financial sector in Zimbabwe is fairly sophisticated as reflected by the range of specialized institutions and financial instruments traded in the market. As indicated above, prior to liberalization, a wide range of financial instruments was available. The availability of this range of financial instruments put the Reserve Bank in good stead to introduce indirect instruments of monetary control.

73 There are stipulated ceilings of amounts that are tax exempt for both individual and corporate accounts.
As indicated in Chapter 1, the financial sector had high levels of liquidity, reflecting elements of the existing trade and exchange control regime. Figure 3.1 shows financial deepening as measured by the ratios of monetary aggregates and domestic credit to GDP.\(^{74}\) Measured in terms of the ratio of broad money to GDP, financial deepening was on average 29 percent annually during the period 1975-85 but decreased to 24 percent during the period 1986-90. It declined further to an annual average of 20 percent during the period 1991-94 before recovering to 28 percent in 1995-98.

This ratio increased dramatically during the first 3 years of the country's independence, perhaps suggesting the positive effects of the restoration of confidence in the economy at independence. The evolution of the ratio of domestic credit (DCE/GDP) shows a similar pattern but with domestic credit surging dramatically after the commencement of reforms. Prior to liberalization the system of foreign exchange allocation played a significant role in the determination of bank credit. Lending activity increased/decreased with the availability of foreign exchange. As pointed out in chapter 1, the incidence of bad loan portfolios was low. However, the situation changed subsequently as some banks aggressively extended loans to emerging small to medium businesses hitherto unable to access credit because of the country's political history. Consequently, the number of bad loans increased in the books of some financial institutions.

The annual report of the Supervision Department of the RBZ points out that the situation improved somewhat by 1996 and the ratio of non-performing loans to total loans declined from 25 percent to 15 percent. This improvement enabled the financial sector to reduce loan loss provisioning from 9.7 percent to 5.9 percent of total loans. The 1997 annual report shows a further decline in the ratio of non-performing loans to 3 percent. Indicators of financial deepening suggest a situation of financial disintermediation, which got worse at the onset of financial reforms but improved thereafter.

\(^{74}\) Khan and Senhadji (2000) draw attention to the weaknesses in the traditional measures of monetization. In particular, monetary aggregates are related to the ability of the financial system to provide liquidity as opposed to intermediating between savers and investors and may also reflect a fast rate of printing money especially in developing countries. Measures based on the supply of credit are better indicators of financial development. However, they reflect developments in the banking sector and exclude stock and bond markets. While this weakness may not be a constraint in developing countries where capital markets are not developed and commercial banking is the dominant feature of the financial sector, they are inappropriate in industrial countries where capital markets are developed.
Domestic and international interest rate spreads

The size of the spreads between lending and deposit rates is an issue of concern with respect to the cost of finance. Spreads may be a reflection of the high costs of financial intermediation, which in turn reflects a sub-optimal use of financial resources. The elements that go into the determination of spreads are bank costs and profits, explicit taxes and implicit taxes such as prescribed portfolios, legal reserve requirements and liquid asset ratios.\textsuperscript{75} Prior to 1991, ceilings on lending rates were based on the base-lending rate (BLR) which had replaced the minimum overdraft rate in 1989. In line with the authorities' objective to promote productive investment and discourage luxury consumption, banks were allowed to charge a maximum of 2.5 percent above the BLR to productive sectors and 3 percent for consumer loans. This effectively set the minimum lending rate for consumer loans at 17 percent in mid 1990. With the elimination of ceilings

\textsuperscript{75} See Hanson (1986) for the decomposition of spreads.
on interest rates, both deposit and lending interest rates increased but with the latter increasing fast and thus increasing the size of spreads. Table 3.5 shows domestic and international interest rate spreads as measured by the difference between domestic lending rates and deposit rates and LIBOR respectively.

Table 3.5. Zimbabwe: Average Domestic and International Interest Rate Spreads

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic interest rate spreads</td>
<td>9.3</td>
<td>12.8</td>
<td>5.8</td>
<td>7.0</td>
</tr>
<tr>
<td>International interest rate spreads</td>
<td>6.8</td>
<td>6.1</td>
<td>7.3</td>
<td>26.2</td>
</tr>
</tbody>
</table>

Source: Calculated from International Financial Statistics

The average spreads between domestic lending and deposit rates were wide but on a declining trend until 1990. However, if the fees and commissions banks charged in order to compensate for the ceilings on their lending rates are taken into account, the effective spreads could be larger. As can be seen from the table, the average domestic spreads for respective periods were 930 basis points in 1975-77; 1280 basis points in 1978-82; 580 basis points in 1983-90; and 700 basis points in 1991-98. It is worth noting that the average annual spreads in the 3-year period ended 1998 were 1300 basis points, suggesting further widening of the spread. This development suggests some stickiness in lending rates. This, in the case of Zimbabwe, could be explained by the oligopolistic market structure of the financial system, switching costs for borrowers and macroeconomic shocks caused by a series of droughts, which contributed to the deterioration in the quality of loan portfolios.

In an oligopolistic and highly segmented market such as existed in Zimbabwe, banks might be averse to frequent changes in their lending rates in so far as such changes can be viewed as a potential threat to the survival of the existing market structure. Furthermore, the market power of banks tends to be increased especially because Zimbabwe does not have a well-developed equity market, which firms could rely on as an alternative source of funds. A feature of segmented markets is that credit information is not readily available to all banks. Consequently, each institution builds an exclusive database on its customers. This tends to increase switching costs for borrowers who approach other than their regular banks. When approached by new customers, on whom they have no information, banks are likely to charge higher lending rates, which presumably incorporate some premiums for the uncertainty and riskiness of lending to new customers. There is thus an institutional disincentive to switching banks, which in turn militates against competition among the banks.
As shown in Figure 3.1, the average spread between LIBOR and domestic commercial bank lending interest rates remained below 10 percent during the period 1975-90. Between 1991 and 1998 the average spread rose to a phenomenal 2620 basis points. This increase in the average international spread is attributable to financial liberalization and a lack of confidence in the credibility of macroeconomic policies. It also contributed to the surge in capital inflows that was experienced in the early stages of financial liberalization.

b. Linkages among Financial Institutions

For illustrative purposes, Table 3.4 summarizes of the linkages between financial institutions in 1982. The linkages shown took the form of joint share ownership by commercial banks in other financial institutions. Over time, commercial banks developed affiliated companies and other associated enterprises in specialized fields. These relationships were mutually beneficial as some banks sought to provide integrated services to their clients. Furthermore, some economies of scale could be realized in such areas as office space, accountancy, training, technical expertise, economic research and intelligence. Some banks tried to carve niches for themselves in areas such as corporate banking (Grindlays), rural sector (now defunct BCCZ), all-in-one-stop services (Zimbank) and nonbank finance and merchant bank activities (RAL, Standard Chartered) and discount houses (Barclays, Grindlays and Standard Chartered).

Virtually all the commercial banks had some interest in export credit, trust companies and nominee companies. There was an interlocking set of interests including equity cross holdings by various banks for example in the Zimbabwe Credit Insurance Corporation (ZCIC). Whitsun Foundation (1983) attributes the stability of the financial sector prior to the liberalization period to some of these ownership relationships. However, these relationships rendered the financial system potentially susceptible to the kind of agency problems discussed in Chapter 2. Competition such as could exist under these conditions took non-price forms.\footnote{The Whitsun Foundation (1983) indicates that the Register of Cooperation (an agreement on bank charges and rates between the banks) may have existed in the Zimbabwe setting and that this could be viewed as a way of avoiding competition. However, they generally conclude that there was no monopoly or cartel in the banking industry.}
For most of the period before 1980, Zimbabwe's financial system operated in a tightly controlled environment in which budget deficits were kept low, inflationary pressures were subdued by the extensive price controls that were in force. The crowding out of the private sector such as existed was considered benign since it was geared to assist the private sector in dealing with the constraints imposed by economic sanctions. As Adam and Ncube (1994) observe, the combination of administrative credit allocation at fixed interest rates and foreign exchange rationing resulted in a moribund domestic financial sector. Credit allocations were mainly to the larger firms involved in traditional export sectors. Venture capital for the small to medium firms was available. Furthermore, the corporate sector generally had high debt to equity ratios because of high leveraging and less use of the equity market.

In addition to other features described in this chapter, the concentration ratios presented in Chapter 4 support the notion of the financial sector in Zimbabwe being oligopolistic. There was hardly any competition among banks and the new entrants did not make much of a difference. Despite some of them being aggressive (imprudently so) by increasing deposit rates significantly and over-extending their loan portfolios the new banks were not able to attract customers from established banks. While the situation described by the Whitsun Foundation referred to above refers to the period before 1983, the post 1991 financial market in Zimbabwe does not meet the criteria for a contestable market in the sense of entry and exit being costless (no sunk costs), the potential entrant having no disadvantage compared to incumbents regarding technology and production costs and the potential entrant being able to engage in “hit and run tactics”. In general terms, oligopolistic markets tend to be noncontestable because incumbent firms have sunk costs and have competitive advantages over new comers. However, if entry is absolutely free and exit is costless, even a monopolistic market or oligopolistic one can behave as if it were perfectly competitive and sell their products at prices that just cover their average costs. Under such conditions, it is potential competition for market share rather than competition within the market that is more important. In that sense, the concept of contestability is an invaluable check on the presumption that a market with one firm or few firms is necessarily uncompetitive. The argument is that easy entry and exit can limit uncompetitive behaviour. This also applies to banking firms and in Zimbabwe, the

Concentration ratios provide only one dimension of the degree of competition and thus should be used with some caution.
government encouraged entry of indigenous banks without enforcing the necessary prudential controls and it could be argued that entry was made relatively easy for the new institutions. It could also be further argued that forbearance and the bailing out of the failed banks also made exit (forced) less costly. As discussed in Chapter 4 the new financial institutions were not perceived as serious competition by the established banks.

c. Interbank Market

The inter-bank market and its operations can be best understood in the context of the tight exchange controls and trade regime under which it operated. The regime evolved through a series of ad hoc measures dating back to the time of the imposition of economic sanctions in 1965. A system of foreign exchange allocation was in place to provide foreign exchange to approved imports under a licensing system. The process of allocation started with the Ministry of Finance estimating the global availability of foreign exchange taking into account the foreign reserves situation and the balance of payments. A committee comprising the Ministry of Finance, other economic ministries and the RBZ made the allocations. Allocations were channelled through the Ministries of Commerce, Industry and Energy. There were some trade restrictions and controls on current and capital transactions, which were also subject to ad hoc changes.

All imports were subject to licensing requirements, with the exception of a few products that were on the Open General Import License list (OGIL). The RBZ administered the exchange control and designated a group of commercial and merchant banks as authorized dealers to effect certain foreign exchange transactions in accordance with the Exchange Control Regulations. Exporters were required to surrender all export proceeds to authorized dealers for whom the RBZ set specified limits of foreign exchange holdings. Any purchases by individual authorized dealers in excess of the specified limits were to be sold to the bank's clients with approved payments, or the RBZ by the end of each business day. Banks could also buy foreign exchange from the RBZ subject to verification of the intended use. The limits were designed to provide the banks with small working balances and were based on each bank's historical volume of transactions in the foreign exchange market.

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78 See IMF Annual Reports on Exchange Arrangements and Exchange Restrictions for details on Zimbabwe's trade and exchange regime.
The RBZ guaranteed most of the commercial banks’ foreign currency liabilities, the rationale being that it had approved such borrowing in the first place. This contingent liability and subsidy to the private sector exposed the RBZ to foreign exchange losses. The authorized dealers traded with each other to settle their needs for foreign exchange before approaching the RBZ. The buy/sell rates were set by the RBZ at plus or minus 0.4 percent from the calculated official mid-rates. The setting of this spread and the tight foreign currency limits, constrained competition among the banks. As discussed in chapter 7, the manner in which the 1997 exchange rate crises was dealt with, has been inimical to the development of a vibrant inter-bank market. Banks appear to be fixing the exchange rate under some informal gentlemen’s agreement.

d. Stock Exchange

Established in 1896, the Zimbabwe Stock Exchange is active but was not open to foreign investors until 1993. The Stock Exchange has about a dozen members and over 65 securities are listed. The Zimbabwe Industrial Index and the Zimbabwe Mining Index are the two indicators of performance. Under the Stock Exchange Act (Chapter 198), companies are not allowed to exceed 40 percent foreign ownership and no single foreign investor is allowed more than a 10 percent stake. Foreigners bringing in funds through normal banking channels may repatriate their income subject to a 15 percent charge on dividends and 10 percent on capital gains. In 1996, Zimbabwe Stock exchange was cited as one of the best performers in emerging markets. Market capitalization increased from Z$19.9 billion to Z$52.8 billion and the industrial index jumped from 3972 to 8786 (a 121.2 percent increase) between January and December that year. A major contributory factor to this strong performance was the listing of Ashanti Goldfields after its takeover of Cluff Resources. There was also a significant inflow of foreign funds to purchase shares on the stock exchange.

e. Government involvement in the financial sector

The government has held equity positions directly and indirectly in some other financial institutions including two commercial banks one of which was subsequently privatized. Table 3.7 shows some details of the extent of the government’s involvement in the banking sector as of 1983. The deposit taking institutions in which the Government has a stake are not granted any special treatment and thus are subject to the same prudential standards, taxation and reserve requirements, as are all other such institutions. However,
the two commercial banks have had a rather disproportionate share of problems ranging from low loan recovery rates due to poor loan portfolios and episodic liquidity constraints manifesting themselves in among other things, failure to meet reserve requirements.

While the problems of pressures to extend credit to politically connected persons and involvement with loss making public enterprises were common to both BCCZ and ZIMBANK, the former's problems were further compounded by the global problems of its parent bank. At various stages, the Reserve Bank had to waive reserve requirements for these institutions. The government has had to undertake some restructuring and dilution of its stake in these institutions. There have also been some operations to clean up the balance sheets of these banks by separating the good books from the bad ones and handing the latter over to debt collectors. In the case of Zimbank, the government hived off bad loans into a separate entity to ensure the viability of banking operations. The Bank of Commerce has been privatized.

Apart from holding equity positions, the government absorbed a disproportionate share of financial resources. Before financial liberalization, the share of credit to the private sector was small relative to the public sector reflecting the disproportionate use of financial resources by the public sector.
<table>
<thead>
<tr>
<th>Bank Group(s)</th>
<th>Merchant Banking</th>
<th>Discount Houses</th>
<th>Financial Institutions</th>
<th>Export Credit</th>
<th>Trust Companies</th>
<th>Insurance Broking</th>
<th>Investment Companies</th>
<th>Property and Real Estate</th>
<th>Data processing</th>
<th>Nominee Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barclays</td>
<td>-----</td>
<td>Bard</td>
<td></td>
<td>ZCIC Ltd.</td>
<td>Barclay Trust (Pvt) Ltd.</td>
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<td>Barclays bank</td>
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<td></td>
<td>Barclays Nominees</td>
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<tr>
<td>BCCZ</td>
<td>-----</td>
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<td></td>
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<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Grindlays Bank</td>
<td>-----</td>
<td>Bard</td>
<td>Grindlays Industrial and Commercial Finance Ltd.</td>
<td>ZCIC Ltd.</td>
<td>Grindlays Executor and Trust Company Von Seidel Grindlays Trust</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZIMBANK</td>
<td>Sybank</td>
<td></td>
<td>Scotfin Finance Ltd.</td>
<td>ZCIC Ltd.</td>
<td>Trustee Company of Central Africa, Syfrets Trust and Executor Syfrets Corporation Trustee Company</td>
<td>Tryst Investments</td>
<td>Syfrets real Estate</td>
<td>Data Centre</td>
<td></td>
<td>Syfrets Nominees</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Zimbank Nominees</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>RAL Holdings Ltd.</td>
<td>RAL Merchant Bank</td>
<td>-----</td>
<td></td>
<td>ZCIC Ltd.</td>
<td>CT Boring and Associates</td>
<td>Ral Capital Finance</td>
<td>Ral Investments</td>
<td>Sagit Holdings</td>
<td></td>
<td>Computer Processing (Pvt) Ltd.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sagit Real Estate</td>
<td>Sagit Investments</td>
<td>Sagit Holdings</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Money and Finance in Zimbabwe Project 1:09, Whitsun Foundation
Table 3.7. Government Interest in Financial Markets

<table>
<thead>
<tr>
<th>Institution</th>
<th>Equity Share</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Government Holdings</strong></td>
<td></td>
</tr>
<tr>
<td>BCCZ</td>
<td>47 percent</td>
</tr>
<tr>
<td>Zimbank Ltd.</td>
<td>62 percent</td>
</tr>
<tr>
<td>Syfrets Merchant Bank</td>
<td>62 percent via Zimbank</td>
</tr>
<tr>
<td>Scotfin</td>
<td>62 percent via Zimbank</td>
</tr>
<tr>
<td>Syfrets Real Estate</td>
<td>62 percent via Zimbank</td>
</tr>
<tr>
<td>Syfrets Corporate Trustees</td>
<td>62 percent via Zimbank</td>
</tr>
<tr>
<td>Willis Faber-Syfrets</td>
<td>51 percent via Zimbank holding in Syfin holding 80 percent</td>
</tr>
<tr>
<td><strong>B. Reserve Bank’s Holdings</strong></td>
<td></td>
</tr>
<tr>
<td>Febco</td>
<td>100 percent</td>
</tr>
<tr>
<td>IPCORN</td>
<td>11 percent</td>
</tr>
<tr>
<td><strong>C. Indirect Equity Links</strong></td>
<td></td>
</tr>
<tr>
<td>Zimbank (in ZCIC)</td>
<td></td>
</tr>
<tr>
<td>Zimbank (in Bard Ltd.)</td>
<td></td>
</tr>
<tr>
<td>IDC (in IPCORN)</td>
<td></td>
</tr>
</tbody>
</table>


f. Regulatory Framework

The regulatory and supervisory power over the Zimbabwean financial system is fragmented and subject to different pieces of legislation. Recent problems in the banking sector can be attributed to this feature. The Banking Act of 1968 and the Reserve Bank Act of 1964 bestow the RBZ with broad regulatory powers over commercial banks, merchant banks, and discount houses and finance houses and the normal functions of a central bank. The POSB operates under the Post Office Savings Bank Act under the joint supervision of the Secretary to the Treasury and the Postmaster General. Building societies operate under the Building Societies Act under the supervision of the Ministry of Finance. There are other pieces of legislation and boards governing the operations of the wide range of non-bank financial institutions and the Ministry of Finance oversees most of these. The Ministry of Finance is the licensing authority for all financial institutions while the RBZ is responsible for offsite supervision. This has tended to expose the process to political pressures and with disastrous consequences. The antiquated Banking Act limited the authority of the RBZ to conduct on-site inspections and issue prudential guidelines with legal authority.

Banking supervision was conducted mainly through moral suasion and off-site surveillance because the lack of authority to conduct on-site inspections. Since 1996, the Banking Supervision Department of the Reserve Bank publishes annual reports on supervision. These reports describe in some detail current supervisory issues, activities and the condition and performance of the banking sector.
As at 31 December 1996, nine banks recorded capital adequacy ratios in excess of the minimum requirement of 8 percent with six banks failing to meet this target (RBZ, 1996). The average capital adequacy ratio declined from 14.9 percent at end 1995 to 10 percent in 1996. In terms of distribution, the categories of capital adequacy were as follows: 4 banks held less than 6 percent; 2 banks held between 6 and 8 percent; two banks held between 8 and 10 percent; one bank held between 10 and 12 percent and six banks held over 12 percent. The high ratio at the end of 1995 reflects the four newly established banks, which had not yet invested in assets with higher risk weightings. In 1997, the average capital adequacy ratio was 16.3 percent for total capital and 13.1 percent for core capital compared to the required norms of 8 percent and 4 percent respectively.

Many new banks held their assets in money market investments with lower risk weighting and thus contributed to the high capital adequacy ratios. Of the seven commercial banks operating in 1997, four had capital adequacy ratios in excess of 12 percent while three held total capital adequacy ratios in the range 8-10 percent. During the same period, merchant banks, finance houses, building societies and discount houses also generally held high capital adequacy ratios with the exceptions that one merchant bank and two finance houses failed to meet the 8 percent minimum requirement.

The 1999 annual supervision report cited high levels of adversely classified assets, inadequate loan loss provisions, non-compliance with laid down procedures and deficient policies and procedures as the main problems revealed by on-site examinations. The RBZ issued five corrective orders to address these problems. All financial institutions except one commercial bank and one merchant bank were reported to be compliant with the capital adequacy requirements. One of the three new banking licenses that were granted in 1999 was withdrawn. This was due to misrepresentation of information by the promoters of the bank. Several merchant banks and a leasing company applied for commercial banking licences presumably in order to reposition themselves in a changing market. A number of mergers also took place as institutions sought to strengthen their respective positions. The minimum capital requirements were changed from Z$50 million to Z$100 million for commercial banks, from Z$30 million for merchant banks and finance institutions to Z$60 million, from Z$25 million to Z$50 million for building societies and from Z$20 million to Z$40 million for discount houses.

There is no explicit deposit protection or guarantee for bail out but recent interventions by the RBZ in the cases of the United Merchant Bank, the ZBS and the
UNIBANK provide some guarantee that the Government would step in to bail out troubled financial institutions. Under such circumstances, banks may engage in speculative financing and risk-taking especially if such failure does not have adverse consequences for their shareholders and managers. Furthermore, easy access to the lender of last resort facility of the central bank and inadequate sanctions and penalties for poor bank managers may bring about the moral hazard factor.

RBZ support

The RBZ provides a number of last resort liquidity supports to banks through discount houses. The facilities for the RBZ support include, the rediscount facility, collateralized overnight advances, uncollateralized overnight facility for accounting errors and lender of last resort. The discount rate has been the main instrument and it has been subject to frequent changes as monetary policy has been tightened. As of end 1998, the discount rate was 39.5 percent and by July 2000, it had risen to 74 percent before being subjected to administrative manipulation to force it down. Discountable securities include treasury bills of specified remaining maturities, prime quality bankers' acceptances etc. If in surplus, discount houses buy special treasury bills from the RBZ at the rate from the most recent auction. This rate is significantly lower than the prevailing discount rate at which they have to discount the same bills if they are in deficit the following day. The RBZ has occasionally waived reserve requirements for troubled institutions.

g. Recent Developments

As shown in table 3.1, the financial sector has experienced a number of institutional changes including the entry of new banks into the market. The changes have also blurred the distinctions between the types of institutions. The statutes under which the various institutions operate have not changed in a timely manner. Consequently, concerns about unfair competition have arisen.

United Merchant Bank, UNIBANK and ZBS bail outs

In April 1998, the United Merchant Bank (UMB), a major indigenous bank owned by a politically connected businessman faced bankruptcy as it failed to pay its outstanding debts

79 The new legislation has provision for a deposit insurance scheme.
worth hundreds of millions of Zimbabwe dollars. The bank is also alleged to have issued fraudulent notes for the state-owned Cold Storage Commission (CSC), worth around Z$800m (US$44m). Many financial institutions were reported to be exposed to this fraudulent behaviour and some estimates put the total exposure at just over Z$2 billion. Although disputed by some of the institutions concerned, various estimates were put forward to show the extent of exposure of various institutions to the UMB. For example, figures shown in Table 3.8 were quoted in the Economist Country Report. Notwithstanding the veracity or otherwise of the cited magnitude of exposure, speculation became rife that the collapse of a number of financial institutions was imminent. In some cases, it triggered what some observers thought was a flight to safety as large deposits were withdrawn from some financial institutions. There were perceptions that most of the indigenous and government related institutions were exposed and that it was better to deposit funds in more secure institutions. The UMB saga reflects the weakness of the supervisory framework and the susceptibility to political pressures of the set up in which licensing authority and supervision are diffuse.\textsuperscript{80} Public statements by the late owner of UMB alleged that many prominent politicians had benefited from his largesse and were among those that could not repay their loans. One of the reasons cited as having precipitated the UMB crisis was that the owner had used funds from UMB to help his tobacco auction floors in Harare, but could not repay them because of the low tobacco prices (EIU, 1998).

Table 3.8. Financial institutions exposed to UMB in millions of Zimbabwe dollars

<table>
<thead>
<tr>
<th>Financial Institution</th>
<th>Exposure (Z$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Office Savings Bank</td>
<td>300</td>
</tr>
<tr>
<td>Crown Securities</td>
<td>296</td>
</tr>
<tr>
<td>Zimbabwe Building Society</td>
<td>200</td>
</tr>
<tr>
<td>Streisand Securities</td>
<td>152</td>
</tr>
<tr>
<td>Premier Securities</td>
<td>146</td>
</tr>
<tr>
<td>BARD Discount House</td>
<td>103</td>
</tr>
<tr>
<td>Advent Securities</td>
<td>100</td>
</tr>
<tr>
<td>Executive Securities</td>
<td>75</td>
</tr>
<tr>
<td>Barclays Bank</td>
<td>30</td>
</tr>
<tr>
<td>Real Africa Durolink</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,472</strong></td>
</tr>
</tbody>
</table>

Source: Economist Country Profile Zimbabwe

\textsuperscript{80} Many politicians may have ordered state institutions to channel vast contracts through UMB and other banks, despite the fact that many these banks were undercapitalized and overstretched by bad loans.
The government's response to the unfolding banking crises was slow. UMB's license was revoked at the end of April 1998 and the Governor of the Reserve Bank was appointed to conduct an audit of the bank. The Governor produced a damning report, which indicated a violation of banking laws and practices. Government as guarantor of the CSC bills, was obligated to honour part of UMB's debt. In June 1998, the Minister of Finance announced that the government would guarantee a total of Z$940m out of a total of Z$1.6 billion bills issued by UMB. Fearing the implications for the rest of the financial sector, the Government instructed the RBZ to honour all of the fraudulent CSC notes issued by UMB. Accordingly, the RBZ proposed to reimburse exposed financial institutions by converting the bills into a five-year couponless bond with an interest rate of 25% on maturity. In light of the rate of inflation, the affected institutions considered the RBZ proposal unattractive and would have preferred an option to cash in their bonds. The handling of the UMB affair raised suspicion about the credibility of the government. Further concerns were raised about the systemic implications of the collapse of the UMB.

The Zimbabwe Building Society (ZBS) was the first casualty of the UMB's fraudulent activities. The ZBS had become overextended on large housing projects, which required steady inflows of funds. Funds became scarce as the ZBS deposit rates, like those of other building societies, had become uncompetitive. Prompted by concerns for the stability of the financial system, the RBZ assumed control of the institution by becoming the main shareholder. In April 13, 1999, details about UNIBANK, yet another bank in trouble to the extent of Z$600 million surfaced. The problem for this bank arose from the government guaranteed loan extended to a copper mining company. The Government had to step in to save this bank. Rumours about the imminent collapse of some financial institutions have been widespread in the market. Exposure to the commercial agricultural sector may yet prove problematic for the financial sector in light of the land issues referred to in chapter 1.

81 The liquidation process of the failed UMB uncovered a detailed list of debtors of this bank. The list was published in the newspapers and it had startling revelations. The alleged omission of prominent politicians who are believed to have been beneficiaries of the UMB largesse in the published list was striking. It gave rise to speculation that a list containing the names of prominent politicians had been withheld from publication. There was also a revelation of some mysterious loan to the Ministry of Finance, which seemed to defy normal procedures of borrowing by the Government and there were also some allegations that some payment had been made to some officials in the office of the registrar of banks.
h. Banking Legislation

Financial liberalization opened up banking business and this led to entry of new players, many of which are controlled by emerging black entrepreneurs. The regulatory and supervisory framework did not move in harmony with the requirements of a liberalized environment. Until 1999, the financial system operated under the aegis of the old Banking and Reserve Bank Acts that, prevented the RBZ from conducting on-site inspections. In a new environment of an expanded financial sector and new products, the RBZ's past recourse to moral suasion proved inadequate. Since 1995, the RBZ has issued a number of prudential guidelines on capital adequacy, prudential lending limits and on loans to insiders. The guidelines on capital adequacy issued in 1995 provide parameters for core capital and supplementary capital in compliance with the Basle principles on risk weighted assets. Loan concentration limits were set at 25 percent of a bank's capital base for an individual borrower or group of borrowers in December 1996. Limits on loans to insiders were also set at 25 percent of the bank's capital base.

Changes in banking legislation stalled for several years despite the urgent need for an improved supervisory and regulatory framework to deal with a changed set of circumstances. Much of this delay can be attributed to the reluctance of legislators to surrender opportunities for rent and political influence peddling in lending decisions of financial institutions whose owners are beholden to politicians for obtaining banking licenses even against the better judgments of bureaucrats. Many economic analysts lay the blame for the financial sector crises on the government. The bill seeking to tighten prudential regulations and authorize the RBZ to maintain tighter control also stalled because several legislators who had interest in some new banks opposed a strict monitoring of the banking sectors.

The new Reserve Bank Act and Bank Act became effective in August 1999 and August 2000 respectively. Contrary to the practices in many countries undertaking

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82 One of the reasons for the shortage of funds was flight to quality.

83 Some have argued that the decision to permit new entrants in the banking system was more to do with a drive towards indigenization than a desire to strengthen the financial system and improve the delivery of its services (See a visitor essay on [http://www.economic.co.zw/visitor/essay1.htm](http://www.economic.co.zw/visitor/essay1.htm).

84 ZANU (PF), the ruling party, has a stake in one of the new banks.
financial liberalization and the trend to strengthen central bank independence, the new legislation for RBZ does not address the issue of central bank independence in the conduct of monetary policy. It is also ambivalent about what the overriding objective of the monetary policy should be. Neither price stability nor any other policy objective is given special prominence. Under the new statute, exchange rate policy is to be formulated by the Minister of Finance. Licensing and supervision remain separate and thus the RBZ does not have the final sanction powers over errant institutions. The UMB type of crises can be averted if the regulatory framework is strengthened and the central bank is accorded the necessary authority as was done recently. However, the issuance of licenses still resides with the Ministry of Finance where it can be subject to political pressures. Without a strong regulatory framework, many financial institutions with low levels of liquidity but quick access to lucrative state contracts engaged in speculative growth. The delayed Commercial Bank Act strengthened the RBZ's regulatory role and gave scope for the bank to contain systemic shocks by putting troubled banks under curatorship.

The collapse of the UMB prompted the government to increase the statutory reserve requirements of banks from 20 percent to 25 percent of liabilities to the public and that of other institutions from 4 percent to 5 percent. It needs to be noted that the increase in reserve requirements was primarily a monetary management measure. Capital requirements for new entrants have been increased substantially and reporting procedures tightened.85

3.4. Zimbabwe's Monetary Policy Framework Prior to Liberalization

a. Monetary Policy Regimes and Policy Objectives

Using a scheme developed by Honohan and O'Connell (1997), Asea et al (1996) identify four phases in the evolution of monetary policy in Zimbabwe. The phases are currency board (Pre-1965); rationing regime (1965-90); discretionary regime (1991-1993); and market clearing regime (since 1994).86 The currency board existed during the colonial period and its primary role was to issue notes and coins as claims against the colonial government and with seigniorage accruing to the local administrative government. The entity's operations were restricted and thus its activities precluded the traditional functions

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85 See the 1996 Annual Report of the Banking Supervision Department of the RBZ page 9.

86 Given the policy reversals referred to in chapter 7 and the behind the scenes manipulation, the currency regime cannot be classified as market clearing.
of a central bank such as the conduct of monetary policy, lending and borrowing from the government and banks.

The rationing regime operated under tight exchange controls, extensive government controls and intervention in the economy. Typically, shocks to the financial system were addressed through changes in the rationing mechanism. Monetary policy was impotent, credit was rationed, financial disintermediation occurred and the private sector was crowded out. The Government obtained seigniorage revenues through controlled and below market interest rates. A black market emerged in the foreign exchange market. The discretionary regime is associated with a more active monetary policy in which interest rates are variable. Government’s access to the financial markets is restrained. The market clearing regime represents the use of market based mechanisms for implementing monetary policy.

The rationing regime of 1965-90 best characterizes the monetary policy framework before liberalization. Prior to 1980, monetary policy was for the most part, passive and accommodated developments on the real side of the economy. Monetary policy objectives of price and exchange rate stability were directly addressed through price controls and a tight exchange control regime. Under the exchange control and allocation regime, the demand for credit was dependent on the availability of foreign exchange.

Figure 3.2. Zimbabwe: Changes in Monetary Aggregates and GDP and Logs of M2, Reserve Money and the Money Multiplier

NFAchng= change in net foreign assets, NDAchng= change in net domestic assets, M2chng= change in broad money
b. Monetary Developments 1980-91

Figure 3.2 derived from the monetary survey shows the changes in the various components of the monetary survey relative to the opening stock of broad money. Increases in broad money are highly correlated with increases in net domestic assets. However, the effects of the increase in net domestic assets on money supply were somewhat dampened by the deteriorating balance of payments situation. The second panel of Figure 3.2 shows the nominal rates of growth in GDP and broad money. As shown in the figure there were quite a few instances in which the rate of growth in money supply exceeded the rate of growth in nominal GDP and 1991. In 1979, there was a surge in money supply reflecting the increase in the government’s recourse to the financial sector to financing its war effort. The country was involved in a civil war, which formally ended at the end of 1979.

Before 1978, money supply increased at an annual average of 9 percent. The average annual rate of increase accelerated to 26 percent during 1978-91 and the comparable figure in 1992-98 is 34 percent annually. As noted above, the net domestic assets are the main explanation for the monetary developments. From the monetary survey, the money supply comprises the asset components and one liability component (other items net) as follows:

\[ M_2 = DC_g + DC_p + NFA \pm OIN \]  

where, \( DC_g \) = credit to the government, \( DC_p \) = credit to the private sector, \( NFA \) = net foreign assets and \( OIN \) = other items net.

In this formulation, changes in the stock of money are the residual outcome of overall changes in net domestic assets as follows:

\[ \Delta M_2 = \Delta DC_g + \Delta DC_p + \Delta NFA \pm \Delta OIN \]  

The impact of policy variables on money and credit takes direct and indirect forms. The third and fourth panels of Figure 3.2 present the relationships between broad money, reserve money and the money multiplier in Zimbabwe. The average money multiplier (MULT) was 4 and it was within the range 3 to 5. It declined sharply in 1990/91 reflecting the drought shock.

Changes in the money multiplier (m2) that are generated through changes in reserve ratios, rediscount rate, or open market operations constitute the direct effect of policy. The
indirect effects operate through changes in the multiplier that are induced by interest rate changes. In Zimbabwe, it was rather more through the indirect route that changes were effected on the money supply and bank credit. These changes were generated by interest changes introduced by the commercial banks rather than by policy actions on the part of the RBZ.

3.5. Credit policy

The demand for bank loans depends on the demand for consumer credit and investment funds. The equilibrium conditions in the market for bank credit require that the volume of earning assets supplied to the commercial banks match the volume of earning assets demanded by banks. Earning assets comprise bank loans and the stock of government bonds sold to banks. In the process by which equilibrium is established, the outstanding stock of government securities is absorbed into the portfolios of the banks and the public; bank loans are extended or repaid; and interest rates are adjusted on bank loans, government securities and other financial assets traded on the bank-credit market (Brunner and Meltzer 1968).

Banks may respond to a deficiency in credit demand by widening the spread between deposit and loans rates and at the same time maintain high levels of excess liquidity. The banks generally prefer to raise interest rates on term deposits as a way of raising additional funds. The raising of savings rates is a less preferred way to raise additional funds because it is more costly in that it raises the cost of savings and this in turn requires the raising of lending rates so as to maintain profitability or at least maintain the spread.

The money supply process was determined by the portfolio preferences of commercial banks and the public. Although its statutes bestow it with all the powers of a monetary authority, the RBZ did not pursue an active monetary policy. Some of the factors militating against an effective monetary policy were the underdevelopment of the financial system, exchange controls and the size of the money multiplier. As monetary policy became more active, its objective was to contain inflation through the proximate target of aligning monetary growth with the growth in nominal GDP. In its quest to keep in check the factors affecting money supply, the RBZ focused directly on demand for credit from the various sectors. This was approached from both the domestic and the foreign side. As noted above, portfolio restrictions effectively rendered the nonbank sector a captive market
for government paper. The additional financing needs of the budget were determined once amounts available from the POSB and the rest of the nonbank financial institutions were established. Financing needs of the Agricultural Marketing Authority (AMA), other public enterprises were also established and credit to the private sector was the residual.

3.6. Commercial Banks and the Money Supply Process

The role of commercial banks in money creation takes on increased significance in a liberalized environment. Many models of money supply determination incorporate bank firm behaviour. These models have generally concluded that the money multiplier depends on the market interest rate, real income, reserve requirements, portfolio preferences of the public, the structure of the banking system, and various factors determining the level of interest rate spreads. Revelations of these models regarding important characteristics of banking systems include competitive conditions, operating costs associated with the provision of deposit and transaction services and solvency costs associated with default losses on bank loans.

In some SSA countries, poor payment systems and undeveloped inter-bank markets have been found to play an important role in the determination of excess reserve holdings. The stock of money supply is largely endogenous and dependent on such variables such as income, wealth, interest rates and other factors. Exceptions to this would be the monetary authority’s credit to commercial banks and the central governments that is amenable to the monetary authority’s control. Theoretically, the monetary authority should be able to control the stock of money through monetary policy instruments. This possibility presupposes that the possible impact of the foreign assets position, fiscal deficits, and fluctuations in the money multiplier are amenable to the influence of monetary policy instruments that the monetary authority can deploy. The situation is subject to some changes during the process of financial liberalization.

3.7. Monetary Policy Objectives and Instruments

The peculiarities of Zimbabwe’s monetary policy operations and credit control before 1991 included a central role for the foreign exchange allocation system. Control over the foreign exchange uses was a critical determinant of the demand for credit. The

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87 See Ncube (1997,11).
increase in credit to the private sector depended on the availability of foreign exchange. In some sense, one could suggest that the RBZ followed the real bills doctrine in as far as credit was made available to meet the requirements of trade. In other words, increases in foreign exchange were not sterilized. Instead, they were used to increase credit and through it, increase imports. The balance of payments situation was central to the developments in the rest of the economy and the financial sector.

The RBZ had at its disposal a range of instruments through which it sought to attain its monetary policy objectives. The instruments comprised liquidity requirements, interest rate controls, direct credit controls, hire purchase arrangements, import deposits, nonnegotiable RBZ Bills, the discount rate, overnight advances to commercial banks, open market operations involving the sale and purchase of Treasury bills, changes in yields on government stock and moral suasion. In practice, the RBZ relied on direct mechanisms to implement monetary policy. The discount window, and RBZ bills were elements of indirect instruments of monetary control. Until early 1994 when special treasury bill open market operations were introduced for liquidity management, treasury bill auctions were exclusively for financing budget deficits. The RBZ often communicated its policy intentions by adjusting the rediscount rate. This rate became a reference point for all other interest rates. Figure 3.4 shows monthly movements in the rediscount rate and the treasury bill.

Figure 3.3. Zimbabwe: Treasury Bill and Discount Rates in Percent
It is clear that before 1991, these rates were flat. This is consistent with a period of passive monetary policy and controlled interest rates.

3.8. Shortcomings of some of the policy instruments used

As shown above, the RBZ used a mixture of direct and indirect instruments of monetary control. However, there was more reliance on direct instruments such liquid asset requirements, interest rate controls, directed credit, hire purchase and moral suasion. Despite the advantages of some of these direct instruments, their disadvantages weigh strongly in favour of using indirect instruments. Outlined below, are some problems associated with the direct instruments of monetary policy used by the RBZ.

The liquidity ratio represented a requirement that financial institutions hold stipulated proportions of their asset in liquid form (asset prescription). For purposes of monetary policy, the critical issue was the range of eligible assets. These eligible assets included government securities and thus provided the monetary authority with the scope for managing liquidity and implementing monetary policy. In essence this provided the government with a captive market for its paper and typically kept the cost of borrowing low for the government especially given the high levels of liquidity in the banking system. The down side is that this instrument imposes undesirable constraints on the banks’ asset management strategies, thereby, distorting competition and engendering disintermediation.

The fact that financial institutions over-fulfilled the liquidity requirement reflected the lack of alternative investment opportunities in Zimbabwe. Furthermore, the under pricing of government securities stifles the development of a secondary market and undermines government discipline to maintain fiscal rectitude and this further weakens part of the armoury to make monetary policy effective. While generally used for both monetary policy and prudential purposes, the captive element turns it into a selective credit and debt management instrument. The proceeds from the sale of government securities were under the control of the RBZ and thus these requirements were useful in short-term liquidity management but this has to be set against the above-cited shortcomings.

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88 See Gulde, Nascimento and Zamalloa (1997) for a detailed discussion of the shortcomings of liquid asset requirements in these respects.
As indicated in Chapter 2, interest rate controls such as existed in Zimbabwe, violated the requirements of efficient resource allocation and in the process fostered disintermediation or non-bank intermediation. Interest ceilings may be circumvented by shifting bank deposits into assets yielding market rates (such as foreign exchange or into goods) (Alexander et al (1995). The ceilings amount to subsidies which encourage the inefficient use of capital in projects which would not be undertaken under market conditions.

The practice of jawboning banks to lend more to certain sectors or activities and less to others while targeted at microeconomic objectives, contributed to inefficiency in the use of financial resources. Such strategies were also used in order to increase finance available to the public sector. Cases in point are the RBZ's facilitation of financing for the agricultural marketing authority and other statutory bodies. The RBZ was not averse to deploying ad hoc measures to attain its objectives. The forcible acquisition of foreign securities held by domestic residence in order to alleviate liquidity problems and contain foreign exchange outflows during the mid 1980s is illustrative of this approach.

3.9. Summary of Issues

The above discussion shows that Zimbabwe had a fairly developed financial sector the operations of which were circumscribed by the trade and exchange regime existing at the time. The financial institutions had a number of inter-linkages that were inimical to competition. Special institutions were set up to meet sectoral targets for bank credit. The sector was fragmented and the regulatory framework was weak and diffuse. The RBZ's supervisory powers were limited and excluded some deposit taking institutions such as the POSB and building societies. Financial repression was a feature of the financial sector as reflected by controlled interest rates, which were negative. Low effective demand for credit and exchange controls contributed to the large excess reserves that were held by the banks. With a lot of excess reserves, banks over-fulfilled the statutory requirements to invest prescribed proportions of their portfolios in government paper. The range of controls and ad hoc measures militated against the development of a vibrant inter-bank market in both domestic and foreign currencies. RBZ used to provide forward cover to exporters and importers and thus exposed itself to considerable exchange risk. This cover was also extended to foreign borrowing by commercial banks.
Before 1980, monetary policy was passive and accommodating. The Government obtained seigniorage revenues through controlled and below market interest rates. Monetary policy objectives were easily attained by price controls and the exchange control regime. With the initial changes in the interest policy regime, monetary policy became a little more active but relied mainly on direct instruments. The initial adjustment in interest rates in 1981, led to temporary portfolio shifts in favour of time deposits. From the foregoing, the answer to the question as to whether the financial sector in Zimbabwe fits the characterization of financial systems in developing countries in general and in SSA, in particular described in Chapter 2 has to be affirmative.
CHAPTER 4: FINANCIAL REFORMS AND CHANGES IN THE MONETARY POLICY FRAMEWORK

4.1. Introduction

This chapter analyses the specific financial liberalization measures implemented in Zimbabwe. The analysis is set against stylized facts from the experiences of other countries. As shown in chapter 6 rising inflation has been one of the main challenges facing the policy makers in their efforts to reform the financial sector and restore macroeconomic stability. The RBZ has been grappling with strategies to reduce and contain inflation. Despite the RBZ's efforts, the inflationary spiral and expectations remain unabated primarily because of weaknesses in fiscal policy. The post liberalization monetary policy framework and the challenge of adopting indirect instruments of monetary policy have been shaped by concerns with price stability. The experiences of other countries in containing inflation and using nominal anchors provide a useful benchmark.

4.2. Financial Liberalization and Macroeconomic Management

The general move towards liberal economic systems and liberalized financial systems in both developed and developing countries bears testimony to the perceived benefits of this process. The notions of money and finance as benign veils of real sector activities have been dispelled. Of the various functions of money, its role as a conduit for scarce financial resources stands out in developing countries. Financial reforms seek to improve financial intermediation and resource transfers among savers and investors. There is a consensus that the existence of certain prerequisites offers the best chance for successful financial sector reforms. The reforms in Zimbabwe were introduced in a situation of macroeconomic instability, a weak regulatory and supervisory framework, and weak political commitment. Even in the best of circumstances, financial liberalization is a daunting task that is fraught with temptations for policy reversals. It is that much worse in the absence of prerequisites for success as was the situation in Zimbabwe. However, the absence of prerequisites need not preclude success in financial sector reforms if macroeconomic balances are restored promptly, the budget deficits are reduced and the regulatory framework is strengthened in a timely manner.

The perceived economic benefits of financial liberalization have been discussed in Chapter 2. The findings of early researchers that interest rates have implications for the forms in which savings are held still hold. This implies that financial liberalization
generates externalities not only for the financial sector but also for the rest of the economy. Although the advantages outweigh the disadvantages, poorly managed financial liberalization can worsen inflation, increase interest rates beyond the reach of investors, expose the financial system to shocks and aggravate macroeconomic imbalances. In addition to all its negative effects, inflation can lead to disintermediation as economic agents resort to inflation hedges.

The removal of interest rate ceilings and other distortions improve the allocation of financial resources. For example the reduction of reserve requirements or their remuneration reduces the cost of financial intermediation and removes one of the reasons for the prevalence of wide spreads between lending and deposit rates in financially repressed systems. This should lower the cost of credit. The removal of portfolio restrictions enables bank managers to make better decisions on the risks and composition of their portfolios. Managers become more accountable for their actions and this minimizes imprudent practices, which would render the financial system vulnerable.

The downside is that interest rates may increase and lead to distress borrowing. Such borrowing may increase the incidence of bad loan portfolios especially if the regulatory and supervisory framework is weak. Weak regulatory frameworks predispose banking systems to fragility and also undermine the effectiveness of monetary policy. Banking problems typically weaken the banks' control over their balance sheets. This in turn renders banks' behaviour less responsive to policy changes in interest rates or reserve requirements. Monetary policy transmission mechanisms can become distorted and the policy itself may be rendered impotent.

Exposure to international financial markets enhances competition and increases resource availability. However, resulting capital inflows may increase exposure to macroeconomic volatility, especially in the context of weak regulatory and supervisory frameworks. Such capital flows can finance credit booms and spark asset bubbles as happened in East Asia. There is a vast literature on the liberalization of capital accounts and the merits and demerits of various policy responses to surges in capital flows. Policy responses have included market–based as well as non-market–based instruments. Among them are sterilized or unsterilized intervention, exchange rate flexibility, fiscal adjustment
capital controls and changes in reserve requirements.\textsuperscript{89} The issue of capital controls has been debated a lot in the literature. Some researchers have advocated some forms of capital controls including the Tobin tax on the volatile components of capital flows while others doubt the effectiveness of such controls. Others view the adoption of such measures as the Tobin tax and other controls as akin to financial repression. Countries such as Chile and Malaysia imposed capital controls and the outcomes have not yielded an unequivocal endorsement of controls. Concern with volatile capital inflows has led many to counsel special care in the sequencing of the liberalization of capital controls.

Banking crises often compel central banks to bail out weak financial institutions because of concerns about the systemic implications of the collapse of such financial institutions. Such support can compromise a central bank's control on liquidity. Furthermore, the fiscal burden can be substantial, for example the costs were estimated to be as much as 41 percent of GDP for Chile and in 1988-85 and 55 percent for Argentina in 1980-82.\textsuperscript{90} This worsens budget deficits, which may fuel inflation. Furthermore, implicit or explicit bail out guarantees by government generate perverse incentives and create moral hazard problems.

As indicated in chapter 2, the tendency for governments to rely on direct monetary policy mechanisms to regulate the price, quantity and composition of credit is often based on the need to supplement revenue, raise cheap money for government and promote social objectives. These measures are inefficient, can be circumvented and may generate further distortions. Indirect instruments such as open market operations conducted through treasury bills or repurchases, rediscount window facilities and refinance instruments, and reserve requirements have therefore become an important aspect of financial liberalization. This is premised on the expectation that they are efficient. However, there are some potential problems in the use of some of the instruments. For example the issuance of a large stock of treasury bills to meet the government's financing needs may be counterproductive. This is so because of the tendency to raise the general level of interest rates. The rise in interest rates not only increases the cost of servicing the budget but also

\textsuperscript{89} Examples of such literature are Dooley, 1996a, 1996b; Eichengreen, Mussa, et.al, 1998; Griffith-Jones, 1998; and Schadler et al, 1993).

\textsuperscript{90} See Agenor (2000, 578) for a table on fiscal and quasi-fiscal costs of banking crises in selected countries.
increases the stock of domestic debt and further compounds fiscal problems. One way to avoid this may be for the central bank to issue its own paper. However, this also has potential problems of generating losses for the central bank and thereby undermining confidence in the custodian of the financial system. The desire to keep interest rates low in order to lower budget costs may prompt government to manipulate treasury bill auctions. Therein lies the potential conflict between the objectives of monetary management and debt management. Additionally, a high frequency in the treasury bill auctions may undermine the development of a vibrant secondary market, which should underpin the success of indirect instruments of monetary policy.

4.3. Inflation Stabilization and Nominal Anchors

Price stability is generally accepted as the main goal of monetary policy. Money based and exchange rate based stabilization programmes have featured among disinflation programmes. Issues about rules versus discretion, nominal anchors, fixed versus flexible exchange rates often arise in the discussions of disinflation programmes. Evidence from some disinflation programmes reveal possibilities of almost instant containment of hyperinflation without major output costs but there are significant problems associated with trying to contain chronic inflation. Stabilization programmes in chronic inflation countries tend to be associated with ephemeral increases in output followed by recessions, sustained real exchange rate appreciation and current account deficits. These problems often lead to policy reversals, which undermine credibility.

The growing trend towards flexible exchange rate regimes has been associated with a decrease in the number of countries using monetary aggregates as intermediate targets for monetary policy. This development is consistent with the increasing resort to market mechanisms than hitherto the case. As noted by Leiderman and Bufman (1995) such changes have been are inspired by practical considerations rather than theoretical or empirical underpinnings. The practical considerations revolve around the desire for flexibility to deal with short term shocks and increased volatility of international capital flows and at the same time provide a nominal anchor. Arguments for floating or fixed exchange rates abound in the literature. Floating exchanges rate are considered to confer autonomy in the conduct of monetary policy and to act as automatic stabilizers against

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external shocks while fixed exchange rates discipline monetary policy and help to counter inflation by eliminating the need for exchange rate depreciation. The nearest to theoretical legitimization are exchange rate based stabilization and the nominal anchor approaches tried out in some countries. These experiments constitute a departure from the general adoption of flexible exchange rate regimes.

The debate about the pros and cons of fixed versus flexible rates is well articulated in several contributions and among them are Bird (1998), Krugman and Obstfeld (1991), Leiderman and Bufman (1995) and Quirk (1994). As Leiderman and Bufman (1995) note, a selection of an exchange rate regime based on economic theory would derive from the welfare concept of Pareto efficiency. However, practical considerations have resulted in the assessment being based on criteria that are loosely connected to welfare measures. The criteria include implications of a chosen regime on the variability of output and prices, the level of inflation and external competitiveness.

There are no categorical answers as to what exchange rate regime is best for all countries. The discussion of exchange rates was recast in terms of nominal anchor arguments for pegging versus real targets case for maintaining flexibility in the nominal rate in order to target the real exchange rate. Through the adoption of crawling exchange rates, policy makers sought to maintain competitiveness and at the same time avoid a rise and variability of inflation. The success of the nominal anchor approach to contain inflation turns on the monetary and fiscal policies accompanying the commitment to a peg also being anti inflationary. Essentially fiscal policy would address domestic imbalances while monetary and exchange rate policy would address external imbalances.

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92 Bird (1998) observes that the reversion to pegged exchange rates especially in developing countries was brought about in the context of policy-based rules, time inconsistency and credibility.

93 See Aghevli, Khan and Montiel (1991) for a discussion on these issues.


95 See Bird (1998) for a discussion of the dilemma for the nominal anchor approach and issues of credibility.
a. **Inflation targeting**

Inflation targeting and variants of predetermined exchange rate arrangements have emerged as the main nominal anchors. Inflation targeting entails the public declaration of a quantitative target for inflation and assigning the central bank the sole responsibility to pursue this objective. A closely related issue is the granting of independence to the central bank in order to facilitate transparency and accountability that is associated with this policy regime. Both the subjects of inflation targeting as a possible monetary policy framework and central bank independence have been broached in Zimbabwe where monetary policy has suffered from fiscal dominance. To date, a few industrial countries and a handful of emerging economies have moved in the direction of inflation targeting. The ability to conduct an independent monetary policy free from fiscal domination or commitment to another nominal anchor such as the exchange rate and the existence of a quantitative framework that links policy instruments to inflation are the prerequisites for successful inflation targeting. The absence of these conditions in developing countries is the basis of some researchers’ scepticism about the wider applicability of this strategy.

The exchange rate based anchor entails managing or fixing a country’s currency relative to another country’s currency. There are several variants and these could take the form of maintaining fixed parities, fixed devaluation schedules, target zones and exchange rate bands, crawling pegs and currency boards. As observed by Flood and Mussa (1994) the common feature of all such exchange rate arrangements is that countries agree to share a nominal anchor with one or more of the participating countries targeting that anchor while others target the exchange rate.

The evidence on the counter-inflationary case for a nominal anchor is mixed with evidence from some countries supporting it and that from others refuting it. On balance,
evidence seems to weigh in favour of the case against nominal anchors and more so in cases where such a strategy is used to shore up an overvalued exchange rate and use the exchange rate as a substitute for anti-inflationary monetary and fiscal polices. In SSA, low inflation rates seemed to set the members of the Franc Zone (CFA) apart from the rest of the continent where the rates of inflation were quite high during the 1970s and 1980s. As Bird (1998) illustrates, by the 1990s, macroeconomic problems had caught up with the CFA countries and the continued support for an overvalued currency became unsustainable and the currency was devalued in early 1994. Furthermore, the argument of devaluation pessimists that this would not work in such countries was not borne out by the experiences of most of the member countries.

The foregoing discussion is relevant to the Zimbabwe situation where the anti-inflation strategy suffered credibility problems and was often subject to conflicting objectives. The interest rate shocks and the associated liquidity crunch led to a softening of monetary policy especially in the context of a drought shock in the early stages of the programme. For a long time, the authorities avoided addressing the exchange rate issue and thus continued to peg the rate even in the face of a growing parallel market. Meanwhile, international reserves were depleted and fiscal policy continued being profligate.

b. Lessons on Stopping Inflation

For many countries, the control of inflation has been an elusive goal. Useful lessons can be drawn from the experiences of some countries that have succeeded in reducing inflation of different magnitudes. As indicated above, monetary based stabilization programmes tend to experience recessions in early stages whereas exchange rate-based programmes tend to experience them in later stages. Many disinflation programmes have tended to rely on exchange rate based strategies. If there is credibility, the exchange rate based strategy is considered to generate instantaneous pay off. However, it is a risky strategy such that if the public is sceptical, authorities are better off pursuing a monetary based strategy. Experience suggests that perseverance is crucial for any disinflation strategy to be successful.

Disinflation programmes often flounder because of the absence of sustained fiscal adjustment. The lack of credibility is also a major problem especially under fixed exchange

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100 These are reviewed in Calvo and Vegh (1990,1992) Burton and Fischer (1998).
rate arrangements. That is more so if there is no evidence of a commitment to implement credible monetary and fiscal policies to sustain the peg. In the absence of credibility, a reduction in the rate of devaluation generates a small decline in the inflation rate of home goods. Consequently, the real exchange rate appreciates and engenders expectations of a large devaluation in the future because agents view the current nominal exchange rate level as unsustainable. The magnitude of the inflation inertia in Southern-cone countries led to a view that adherence a single nominal anchor would encounter serious problems in eliminating the inflation inertia generated by such problems as the lack of credibility and backward-indexation. The preclusion of a fall in real wages that is associated with indexation may negate the effectiveness of devaluation. While the additional anchors may be successful in breaking inflation inertia, their benefits can be outweighed by the resulting distortions to relative prices.

4.4. Financial Liberalization Measures

Chapter 1 spells out the objectives set for the financial liberalization programme. These objectives were to be attained through a number of measures the main ones of which were, the removal of ceilings and controls on most interest rates, maintaining positive real interest rates, allowing new entrants into banking business, improving financial intermediation and adopting indirect instruments of monetary management. Table 4.1 shows the main measures of liberalization that were introduced. These measures were concentrated in the early stages of the programme (1991-92).

Interest Rate Changes

Table 4.2. shows the evolution of selected nominal and real interest rates over the period 1993-97. With the exception of some rates pertaining to building societies and the POSB, most interest rates became positive during the period 1993-97. Figure 4.1 shows that the real discount rate, like most other rates, was negative prior to 1993. It became significantly positive and reached 122 percent in 1997 before becoming negative in 1998 because of inflation.

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101 This gave rise to the introduction of additional nominal anchors such as incomes policies, money or credit controls and wage and price controls, hence the term heterodox was used to describe the mid 1980s programmes in Argentina, Brazil and Israel.
Table 4.1. Zimbabwe: Monetary Reforms and Policy Measures (Continued).

<table>
<thead>
<tr>
<th>Changes</th>
<th>Early 1991</th>
<th>Late 1991</th>
</tr>
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<tbody>
<tr>
<td>Interest rate Policy</td>
<td></td>
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<tr>
<td>Deposit Rates</td>
<td>Increased with a view to mobilize domestic resources for investment in productive sectors</td>
<td>Minimum savings rate for all institutions increased to 14 percent Rate on demand deposits remained at 7 %</td>
</tr>
<tr>
<td>Commercial Banks</td>
<td>Minimum deposit rate increased to 7% (2/91)</td>
<td></td>
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<tr>
<td>Building societies</td>
<td>Minimum rate increased from 9.25 % to 12% (2/91)</td>
<td>PUPs increased to 12.85%</td>
</tr>
<tr>
<td>Rate on tax free PUPs 9% =&gt; 11% (2/91)</td>
<td></td>
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</tr>
<tr>
<td>POSB (tax free interest)</td>
<td>Savings deposits 9.25% =&gt; 12.5% (2/91)</td>
<td>Rate increased to 14.25 percent</td>
</tr>
<tr>
<td>Fixed deposits 11% =&gt; 12.5% (2/91)</td>
<td></td>
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</tr>
<tr>
<td>Finance Houses (fixed deposits)</td>
<td>3 months =&gt; 11% (2/91)</td>
<td>Rate increased to 14.25 percent</td>
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<td></td>
<td>6 months =&gt; 11.5% (2/91)</td>
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<td></td>
<td>12 months =&gt; 12.5 %</td>
<td></td>
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<tr>
<td>Deposits &gt;12 months &amp; NCDs</td>
<td>Continued to be market determined Maxima on placements with POSB and Building societies Retained</td>
<td>Limits of holdings increased by 100% in anticipation of increased deposits</td>
</tr>
<tr>
<td>Lending Rates</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial and Merchant Banks</td>
<td>Increased 12% =&gt; 15% (BLR)</td>
<td>Base Lending rate increased 15% =&gt; 17.25 %</td>
</tr>
<tr>
<td>Finance Houses</td>
<td>14.5% =&gt; 18% (BLR)</td>
<td>Base Lending rate increased 18% =&gt; 21%</td>
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<tr>
<td></td>
<td></td>
<td>BLR ceased to be statutory &amp; became indicative</td>
</tr>
<tr>
<td>Preferential rates</td>
<td>Continued for productive and export sectors</td>
<td>Supports for commercial farmers, Small-medium enterprises</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subsidized finance provided</td>
</tr>
<tr>
<td>Minimum Lending Rate (MLR)</td>
<td>Increased from 17% to 25%</td>
<td>Increased from 25 percent to 30 percent</td>
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<tr>
<td>(consumption-covering goods and services)</td>
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<tr>
<td>Mortgage Rates 1/</td>
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<tr>
<td>New non-owner occupied housing &amp; Commercial property in municipal areas including holiday resorts</td>
<td>Increased to 32 percent</td>
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<tr>
<td>Located in any other area</td>
<td>From 18% to 30 %</td>
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<td>Pegged at 20%</td>
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<tr>
<td>Tourist development</td>
<td>at 20%</td>
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<tr>
<td>Existing non-owner occupied</td>
<td>From 18% to 20%</td>
<td>Increased to 23 percent</td>
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<tr>
<td>Housing and commercial property in all areas</td>
<td></td>
<td></td>
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<tr>
<td>Owner-occupied houses</td>
<td>From 13.75% to 14.5 %</td>
<td>Increased to 17 percent for those &gt;Z$35,000</td>
</tr>
<tr>
<td>Mortgage rate for low-cost</td>
<td>From 12.5% to 13%</td>
<td>Threshold increased to Z$35,000 and rate increased to 15 percent</td>
</tr>
<tr>
<td>housing or loans below Z$12,000</td>
<td></td>
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</tr>
<tr>
<td>Mortgage rate for industrial</td>
<td>From 14.75% to 16%</td>
<td>Increased to 18.25 percent</td>
</tr>
<tr>
<td>Property</td>
<td></td>
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</tr>
<tr>
<td>Liquidity ratios</td>
<td>Previously used as monetary policy tool- to switch to prudential purposes Narrower definition of liquid assets with a view to reducing the ratio Reserve assets excluded from definition 11/51</td>
<td>For commercial banks from 40 % to 25% For merchant banks from 40 % to 20% Uncharged For building societies &amp; finance houses at 15 percent (10/91)</td>
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<tr>
<td>(Prescribed liquid asset ratio)</td>
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<tr>
<td>Direct Credit Controls</td>
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<tr>
<td>Import Deposits</td>
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<tr>
<td>Reserve Requirements (RR) 2/</td>
<td>Unification of reserve requirements at 10% across deposit types (2/91)</td>
<td>RR reduced to 6.25 % (3/92)</td>
</tr>
<tr>
<td>RR increased to 12.5% (11/91), Shift in focus towards monetary control- no longer treated as non liquid assets</td>
<td>RR increased again to 12.5 % (6/91)</td>
<td></td>
</tr>
<tr>
<td>Reserve requirements for finance houses</td>
<td>Remained at 4 percent</td>
<td></td>
</tr>
<tr>
<td>Non-negotiable Reserve Bank Bills</td>
<td>Used as a short term fine tuning instrument Low interest rate 5%, non liquid and non</td>
<td></td>
</tr>
<tr>
<td>Changes in the yields on treasury bills and Government stock</td>
<td>Government stock issues to be by tender and all secondary trading of such stock to be done through the Stock Exchange or through other private placements. Objective - to correct distortions brought about by aligning yields on Government stock with other market determined rates and administratively linking the determination of stock prices on the secondary market to the ruling yield curve. RBZ to act as broker for stock issues and to buy and sell Government stock at its discretion. Termination of the pre announcement of stock issue programme: Objective- to accord RBZ greater flexibility in ensuring appropriate combinations of instruments of Government paper, maturities and amounts.</td>
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<tr>
<td>Indirect Methods of Monetary Control</td>
<td><strong>Open Market Operations</strong></td>
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<tr>
<td><strong>RBZ lending</strong></td>
<td><strong>To Government</strong></td>
<td></td>
</tr>
<tr>
<td>At ruling rediscount rate 13% (2/91)</td>
<td>To lend Government at 15.75% (ruling DR)</td>
<td></td>
</tr>
<tr>
<td>At base lending rate for commercial &amp; Merchant banks 15% (2/91)</td>
<td>For commercial and merchant banks</td>
<td></td>
</tr>
<tr>
<td><strong>Rediscount rate (bank rate) - increased</strong></td>
<td>Increased from 13.65% to 15.75 % Increased to 16% (10/91) and 20% (12/91)</td>
<td></td>
</tr>
<tr>
<td>10.25% =&gt; 13% (2/91)</td>
<td>21% (1/92) and 22% (3/92), and increased to 25% (5/92), reduced to 22% (6/92), increased 30% (7/92) and increased 29% (</td>
<td></td>
</tr>
<tr>
<td><strong>Rediscount Policy</strong></td>
<td>Continued tightening but with bias towards exports (export bills rediscounted at finest rates)</td>
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<tr>
<td><strong>Bankers Acceptances</strong></td>
<td>Cap on finance house rate lifted</td>
<td></td>
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<tr>
<td>(to reduce the number of Bankers Acceptances that could be Discounted by the reserve bank and that way restrict monetary Expansion)</td>
<td>REP0 whereby the RBZ only resold BAs to the originating house at predetermined prices was discontinued. Henceforth the RBZ could hold bills to maturity or sell them to whoever it chose.</td>
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<tr>
<td>Tightened the eligibility criteria for private eligible for rediscounting purposes in line with change in liquidity ratios as follows: a) limited eligible paper to only that relating directly to specific merchandise transactions involving exports of such goods b) with respect to imports- only by allowing those imports backed by a firm export order or where there was evidence of continuity of exports to be eligible for rediscounting</td>
<td>Retained the policy of rediscounting TBs with some modifications on the issue: a) tender multiples reduced from Z$10,000 to Z$5,000 b) RBZ became the sole underwriter of TBs c) TBs tender-opened up to include individuals, insurance companies, pension funds, the POSB, banks, companies d) Variations in maturity and amounts of bills to be adopted.</td>
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</tbody>
</table>

Source: Quarterly Economic and Statistical Reviews, Policy Statements.

1/ The mortgage rate applicable to non owner occupied houses had been increased before with a view to discouraging speculative investment in real estate and containing inflation that could result from this. To support that objective, the asset prescription, which required that 80 percent of building societies' advances be in residential housing, was lowered to 70 percent.

2/ Before 1991, the reserve ratio for commercial and merchant banks was used for prudential purposes and it was 10 % for demand and savings deposits and 4% for time deposits.
Figure 4.1. Zimbabwe. Evolution of Nominal and Real Discount rates and Inflation

![Chart showing Evolution of Nominal and Real Discount rates and Inflation](chart)

### a. Deposit Rates

Deposit interest rates were generally increased across institutions and deposit types and ceilings on lending rates were removed. Spreads between lending and deposit rates widened sharply in 1991, as did the gap between LIBOR and the domestic lending rates and this continued until 1994 when the gaps started narrowing marginally. Figure 4.2 shows that the spread between the average deposit rates on 3 months deposits held with commercial banks and the average lending rates for commercial banks increased substantially. Legal reserve and liquidity requirements, operating expenses and the pressure of competition on profit mark-ups could be the explanation for this.

Minimum deposit rates for commercial banks were set at 7 percent while those for building societies were set at 12 percent and those for one-year deposits at finance houses were set at 12.5 percent. Interest rates on deposits of more than 12 months maturity and negotiable certificates of deposit were to be market determined. Towards the end of 1991, the minimum savings rate was increased to 14 percent for all institutions, the rate on paid up permanent shares (PUPS) in building societies was increased to 12.65 percent while the rate on term deposits at POSB was increased to 14.25 percent. In anticipation of a surge in deposits, the ceiling on placements with building societies and the POSB was increased by 100 percent. Interest rates rose as monetary policy was tightened and this helped to stem a
decline in international reserves. The rise in domestic interest rates led to a further widening of the spread between domestic rates and international rates.

Figure 4.2. Zimbabwe: Spread between average 3 months Deposit Rate and the Lending Rate

b. Base Lending Rate (BLR)

Base lending rates for commercial and merchant banks were raised from 12 percent to 15 percent initially and further increased to 17.25 percent. The base-lending rate for finance houses was raised from 14.5 percent to 18 percent in early 1991. The base-lending rate became indicative as opposed to being the statutory rate that it had been in the past. The lending rates for productive purposes were not to exceed the BLR by a stipulated percentage and minimum lending rates for non-productive purposes were introduced at 17 percent and increased in two stages to 25 percent in the first instance and to 30 percent in the second stage. The changes were intended to discourage luxury consumption and non-productive lending.

c. Mortgage Rates

Mortgage rates for different categories of consumers were raised in line with the government's economic, social and distributive objectives. The rates were lower for industrial properties, low-cost housing, owner-occupied houses and higher for non-owner occupied and commercial property in municipal areas. The policy was to discourage speculative investment in the real estate sector. To support this objective, the asset prescription, which hitherto required that 80 percent of building societies advances be in residential housing, was lowered to 70 percent.
Table 4.2. Zimbabwe: Selected Nominal and Real Interest Rates, 1990-1999, Percent per Annum

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</thead>
<tbody>
<tr>
<td>Inflation end of period</td>
<td>17.4</td>
<td>23.3</td>
<td>42.1</td>
<td>27.6</td>
<td>22.2</td>
<td>21.4</td>
<td>19.0</td>
<td>46.6</td>
<td>56.9</td>
<td></td>
</tr>
<tr>
<td>Nominal discount rate</td>
<td>10.25</td>
<td>20.00</td>
<td>29.50</td>
<td>28.50</td>
<td>29.50</td>
<td>29.50</td>
<td>27.00</td>
<td>31.5</td>
<td>39.5</td>
<td>74.41</td>
</tr>
<tr>
<td>Real discount rate</td>
<td>-7.15</td>
<td>-3.30</td>
<td>-12.60</td>
<td>0.90</td>
<td>7.30</td>
<td>6.90</td>
<td>5.60</td>
<td>12.50</td>
<td>-7.10</td>
<td>17.51</td>
</tr>
<tr>
<td>Nominal treasury bill rate</td>
<td>8.39</td>
<td>14.44</td>
<td>26.16</td>
<td>33.04</td>
<td>29.22</td>
<td>27.98</td>
<td>24.53</td>
<td>22.07</td>
<td>32.78</td>
<td>69.41</td>
</tr>
<tr>
<td>Real treasury bill rate</td>
<td>-9.01</td>
<td>-8.86</td>
<td>-15.94</td>
<td>5.44</td>
<td>7.02</td>
<td>5.38</td>
<td>3.13</td>
<td>3.07</td>
<td>-13.82</td>
<td>12.51</td>
</tr>
<tr>
<td>Nominal rates on 3 months fixed deposits - Commercial banks</td>
<td>11.50</td>
<td>24.00</td>
<td>42.50</td>
<td>43.00</td>
<td>31.50</td>
<td>30.00</td>
<td>19.25</td>
<td>32.25</td>
<td>40.25</td>
<td>69.00</td>
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<tr>
<td>Real rates on 3 months fixed deposits - Commercial banks</td>
<td>-5.90</td>
<td>0.70</td>
<td>0.40</td>
<td>15.40</td>
<td>9.30</td>
<td>7.40</td>
<td>-2.15</td>
<td>13.50</td>
<td>-6.35</td>
<td>12.10</td>
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<td>Nominal rates on 12-months fixed deposits - Building Societies</td>
<td>10.50</td>
<td>14.85</td>
<td>14.85</td>
<td>15.85</td>
<td>15.85</td>
<td>15.85</td>
<td>15.85</td>
<td>15.85</td>
<td>15.85</td>
<td>15.85</td>
</tr>
<tr>
<td>Real rates on 12-months fixed deposits - Building Societies</td>
<td>-6.90</td>
<td>-8.45</td>
<td>-27.25</td>
<td>-11.75</td>
<td>-6.35</td>
<td>-6.75</td>
<td>-5.55</td>
<td>-3.15</td>
<td>-30.75</td>
<td>-41.05</td>
</tr>
<tr>
<td>Nominal commercial banks lending rates (maximum)</td>
<td>12.00</td>
<td>17.25</td>
<td>47.50</td>
<td>47.50</td>
<td>40.00</td>
<td>38.49</td>
<td>37.07</td>
<td>37.86</td>
<td>58.0</td>
<td>76.0</td>
</tr>
<tr>
<td>Real commercial banks lending rate</td>
<td>-5.40</td>
<td>-6.05</td>
<td>5.40</td>
<td>19.90</td>
<td>17.80</td>
<td>15.89</td>
<td>15.67</td>
<td>18.86</td>
<td>-11.4</td>
<td>-19.1</td>
</tr>
</tbody>
</table>

Source: Central Statistical Office, and Reserve Bank of Zimbabwe Quarterly Economic and Statistical Review.

d. Liquidity Ratios and Statutory Reserve Requirements

Prior to liberalization, liquidity ratios were a statutory instrument with which to manage liquidity and channel financial resources to the government while reserve requirements were mainly used for prudential purposes. Liquidity ratios were set at 40 percent of liabilities to the public for commercial and merchant banks and at 15 percent of the same for finance houses and building societies. The liquid asset ratios were an instrument of monetary policy under the control regime. The RBZ determined what the composition of liquid assets would be and set mandatory levels, which the various financial institutions were required to hold and place in government and public enterprise securities. As indicated above this was a compulsory way of extending credit to the government and public entities. The credit requirements of the private sector were determined residually. Before financial liberalization, statutory reserve requirements were pegged at 10 percent for demand and savings deposits and at 4 percent for time deposits and were purely for prudential purposes. This meant that banks had to deposit 10 percent of their demand deposit liabilities and 4 percent of their savings deposit liabilities in unremunerated accounts at the RBZ. One of the changes ushered in by liberalization involved a switch in the respective roles of liquidity ratios and reserve requirements.
The former was pegged at 10 percent for commercial banks, merchant banks, finance houses and building societies while the latter became an instrument of monetary policy in the traditional sense and was changed as required for monetary policy objectives. A narrower definition of liquid assets to exclude bankers' acceptances and reserve assets was adopted in October 1991. Figure 4.3 on the prescribed and actual liquidity ratios shows that
apart from the initial adjustment to the policy change in 1991, financial institutions generally held excessive reserves. The levels were particularly high for merchant banks and building societies. Such high levels of liquidity constituted a challenge for the effectiveness of monetary policy. Excess reserves seem to be one of the structural features of financial systems in developing countries. It is often argued that financial institutions in this environment are highly conservative and risk averse. Another explanation for the high levels of excess reserves would be the impact of high interest rates on would-be borrowers.

Adjustments in statutory reserve requirements occurred more often and in December 1997, reserve requirements on local currency deposits were raised to 20 percent of deposit liabilities while those on foreign currency deposits had been raised to 17.5 percent. There were further increases as shown below. These high levels of reserve requirements were an implicit tax on financial intermediation and contributed to a widening of interest rate spreads.

e. Import Deposits

Changes in the trade regime removed import compression and thus led to a surge in imports. To contain the increased demand for imports, the Customs Department introduced import deposits for Open General Import Licence (OGIL) imports in excess of Z$15,000. These deposits were to be held in a special non-interest earning account at the RBZ and they were not to be financed through Banker’s Acceptances (BAs). The use of import deposits was a double pronged strategy to minimize speculative import purchases and at the same time soak up some liquidity from the banking system.

4.5. Impact of Financial Liberalization Measures in Zimbabwe

While some benefits from financial liberalization are specific to the financial sector, others are macroeconomic in nature. The more direct effects are reflected by some indicators such as the trend in financial deepening, growth in credit to the private sector, real interest rates, the removal of barriers to entry, trends in interest rate spreads and operating costs. The reforms can also influence broad macroeconomic aggregates such as savings, investment volume and efficiency, capital movements and economic growth. Some of the effects such as positive real interest rates quickly manifest themselves whereas others such as financial deepening, growth and other macroeconomic effects take longer to manifest themselves. The other dimension of an assessment of financial liberalization concerns the adoption of indirect instruments of monetary control. The impact of financial
liberalization measures is examined in terms of developments with respect to monetary aggregates, credit, savings and investment, interest rate spreads, competition and institutional developments and exchange market.

a. Monetary Aggregates, Credit Saving and Investment

Table 4.3 presents various financial aggregates, which could indicate some of the effects of liberalization. The ratios suggest the onset of some financial disintermediation in the early stages of liberalization. By 1993, the level of financial deepening began to recover. Viewed over a longer time frame as shown in Figure 4.4, the ratios of the various monetary aggregates relative to GDP indicate an upward trend which reached peaks in 1980 as political and economic stability were restored at independence. This was followed by general declines, which reached troughs at the onset of reforms. However, the upward trend which started in 1991 was adversely affected by inflation as indicated by a decline in financial deepening after 1997. This could be a reflection of inflation hedging. From 1993, the ratios of monetary aggregates showed signs of recovery from the downward trend and this in part reflected the positive impact of liberalization measures. The velocity of circulation was generally lower during the period associated with financial disintermediation. The currency to broad money ratio increased by 2 percentage points to reach 172 percent in 1991 before declining to an average annual ratio of 12.4 percent. This could suggest the increasing use of other financial instruments and some confidence in the banking system.

The ratio of domestic credit to GDP (DCE/GDP) increased substantially after 1991. The relative shares of credit to the public sector and credit to the private sector shifted somewhat in favour of the latter. However, the public sector's share of domestic credit began to increase within a few years and crowded out the private sector. This was reflected in the substantial increase in public domestic debt. Some of the dramatic increase in domestic credit availability subsequent to liberalization could be associated with distress borrowing as firms struggled to stay afloat in the face of high interest costs. The data on

102 The earlier increase in the ratios could be attributed to the shortage of foreign exchange, which forced the build up in forced savings. The subsequent decline is consistent with an increase in foreign exchange availability, which led to an increase in imports and the running down of money stock to pay for imports.
saving and investment analyzed in chapter 6 does not readily lend itself to an unambiguous attribution of the effects of financial liberalization on these variables. Empirical results suggest a low interest elasticity of savings. However, suffice it to note that there were notable increases in investment, savings rates, and economic growth. It is fair to conclude that there were some improvements in financial deepening and perhaps some efficiency gains in the use of financial resources and the quality of investment (Table 6.1 and Figure 6.1 in Chapter 6).

b. Interest rate spreads

The spread between domestic lending and savings rates declined marginally in 1990 but widened sharply thereafter until 1994 when it started narrowing. The spread between domestic commercial bank lending interest rate and LIBOR also widened considerably and only started narrowing marginally in 1993 (Table 4.3). The interest differential between domestic interest rates and international rates encouraged significant capital inflows. This outcome runs counter to the general belief that exposure to the international markets will push in the direction improved efficiency and narrowing of spreads. However, empirical results in Chapter 7 suggest a preponderance of domestic financial factors in the determination of nominal interest rates in Zimbabwe. An inference can be made that the improvement in the efficiency of the financial sector was not apparent perhaps because of the oligopolistic structure of the banking sector.

Table 4.3. Zimbabwe: Selected Financial and Economic Indicators

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</tr>
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<tbody>
<tr>
<td>GDP growth °/o</td>
<td>7.0</td>
<td>5.5</td>
<td>-9.0</td>
<td>1.3</td>
<td>6.8</td>
<td>0.1</td>
<td>7.3</td>
<td>3.2</td>
<td>1.6</td>
</tr>
<tr>
<td>Inflation °/o</td>
<td>17.4</td>
<td>23.3</td>
<td>42.1</td>
<td>27.6</td>
<td>22.2</td>
<td>22.6</td>
<td>21.4</td>
<td>18.7</td>
<td>46.6</td>
</tr>
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<td>Seigniorage</td>
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<td>1.80</td>
<td>0.58</td>
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<td>1.74</td>
<td>0.73</td>
<td>0.74</td>
<td>1.74</td>
<td>3.24</td>
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<tr>
<td>Budget deficit °/o</td>
<td>-5.3</td>
<td>-5.4</td>
<td>-5.0</td>
<td>-6.2</td>
<td>-3.8</td>
<td>-9.4</td>
<td>-7.7</td>
<td>-6.5</td>
<td>-4.9</td>
</tr>
<tr>
<td>M1 Velocity</td>
<td>8.7</td>
<td>9.8</td>
<td>10.7</td>
<td>6.8</td>
<td>7.5</td>
<td>5.4</td>
<td>6.1</td>
<td>4.7</td>
<td>5.1</td>
</tr>
<tr>
<td>M2 Velocity</td>
<td>4.3</td>
<td>5.8</td>
<td>6.0</td>
<td>4.4</td>
<td>4.2</td>
<td>3.7</td>
<td>3.8</td>
<td>3.2</td>
<td>3.9</td>
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<tr>
<td>Currency/M2</td>
<td>15.4</td>
<td>17.5</td>
<td>15.1</td>
<td>12.2</td>
<td>11.1</td>
<td>11.0</td>
<td>11.1</td>
<td>11.4</td>
<td>12.9</td>
</tr>
<tr>
<td>M1 GDP</td>
<td>11.5</td>
<td>10.2</td>
<td>9.4</td>
<td>14.7</td>
<td>13.3</td>
<td>18.4</td>
<td>16.4</td>
<td>21.4</td>
<td>19.7</td>
</tr>
<tr>
<td>M2/GDP</td>
<td>23.3</td>
<td>17.1</td>
<td>16.6</td>
<td>23.0</td>
<td>23.6</td>
<td>26.9</td>
<td>26.0</td>
<td>31.2</td>
<td>25.8</td>
</tr>
<tr>
<td>M3 GDP</td>
<td>42.0</td>
<td>34.0</td>
<td>31.7</td>
<td>37.1</td>
<td>38.7</td>
<td>45.2</td>
<td>45.1</td>
<td>49.7</td>
<td>40.2</td>
</tr>
<tr>
<td>M2/Base Money</td>
<td>2.4</td>
<td>2.0</td>
<td>2.0</td>
<td>2.4</td>
<td>2.6</td>
<td>3.0</td>
<td>2.6</td>
<td>2.6</td>
<td>2.2</td>
</tr>
<tr>
<td>M1 Base Money</td>
<td>1.2</td>
<td>1.2</td>
<td>1.1</td>
<td>1.5</td>
<td>1.5</td>
<td>2.0</td>
<td>1.6</td>
<td>1.8</td>
<td>1.7</td>
</tr>
<tr>
<td>Domestic Credit/GDP</td>
<td>22.7</td>
<td>21.2</td>
<td>26.3</td>
<td>33.8</td>
<td>30.9</td>
<td>33.4</td>
<td>30.7</td>
<td>47.8</td>
<td>50.2</td>
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<tr>
<td>Credit to the public sector/GDP %</td>
<td>10.2</td>
<td>5.4</td>
<td>7.0</td>
<td>11.6</td>
<td>9.3</td>
<td>8.2</td>
<td>8.5</td>
<td>19.3</td>
<td>21.8</td>
</tr>
<tr>
<td>Credit to private sector GDP %</td>
<td>12.4</td>
<td>15.3</td>
<td>18.8</td>
<td>21.8</td>
<td>21.4</td>
<td>24.9</td>
<td>21.7</td>
<td>27.5</td>
<td>28.1</td>
</tr>
<tr>
<td>Real deposit rate (3months average) %</td>
<td>-8.6</td>
<td>-9.1</td>
<td>-13.5</td>
<td>1.8</td>
<td>4.5</td>
<td>3.3</td>
<td>0.2</td>
<td>-0.1</td>
<td>-17.5</td>
</tr>
<tr>
<td>Interest rate spread (domestic)</td>
<td>2.9</td>
<td>1.3</td>
<td>-8.9</td>
<td>6.9</td>
<td>8.1</td>
<td>8.8</td>
<td>12.7</td>
<td>13.9</td>
<td>13.0</td>
</tr>
<tr>
<td>Real Discount Rate %</td>
<td>-7.1</td>
<td>-3.3</td>
<td>-12.6</td>
<td>0.9</td>
<td>7.3</td>
<td>6.9</td>
<td>5.6</td>
<td>12.8</td>
<td>-7.1</td>
</tr>
<tr>
<td>Interest rate spread (lending rate minus LIBOR) °/o</td>
<td>3.4</td>
<td>9.5</td>
<td>15.9</td>
<td>33.0</td>
<td>30.1</td>
<td>28.7</td>
<td>28.8</td>
<td>26.8</td>
<td>36.8</td>
</tr>
</tbody>
</table>

Sources: Calculated from IFS data and Official Publications.
1/ Seigniorage is calculated as the change in the monetary base (currency + reserves) divided by nominal GDP.
2/ M3 is based on the banking survey data in IFS.
3/ Base money comprises reserve money and currency in circulation.
Operating expenses and profit mark-ups are expected to fall as barriers to entry are dismantled. However, the increase in spreads after liberalization could be a result of banks’ reactions to the rising risk of default on loans. In such circumstances, banks pass on the cost of bad loans to other borrowers. The increased cost of finance, a significant part of which is the increase in unremunerated legal reserve requirements, has the potential to push sound borrowers into insolvency and thus further increase loan default rates, the lender’s risk and interest rate. In these circumstances, banks increasingly lend to high-risk projects and speculative ventures at very high interest rates and defaults in what is often referred to as “Ponzi schemes”.

c. Competition and institutional development

The financial sector has experienced some institutional changes and operational changes among which are the entry of new players and the use of new financial instruments. Most of the new entrants have been in specialized areas of banking. For example, there are only 3 new commercial banks whereas 4 new merchant banks and 5 new discount houses entered the market. Commercial banks remain the largest group of institutions in terms of asset holdings. Some competition has been brought to bear on discount houses in that their numbers have increased and that the monopoly status hitherto accorded to them in linkages with the RBZ has been removed. Prior to liberalization, there was virtually no competition between the two existing discount houses. Through
consultations, the two predetermined the market and margins in a setting where the market had to go to the discount houses rather than the latter soliciting business.

Discount houses used to be the market makers and would sell treasury bills to other financial institutions including commercial banks. The RBZ passively stood ready to discount any paper. The entry of new discount houses resulted in the squeezing of profit margins. The closure of current accounts of discount houses at the RBZ and the setting up of primary dealers with commercial banks being the focal point through which all other financial institutions interacted with the RBZ eliminated the privileged status of discount houses. Not only did discount houses have to compete for business with commercial banks but also conduct their business through them in their capacity as clearing banks. These developments spurred financial innovation in the form of off balance sheet items, derivatives and foreign exchange trading as institutions tried to expand into new areas in reaction to lost business. There has also been a spate of mergers and consolidations with boundaries hitherto set by the old banking statutes becoming tenuous.

Two distinct groups comprising foreign and local players operate in the financial market. The foreign owned banks continue to hold a large share of the market. At the end of 1998, the three foreign owned banks accounted for 58 percent of the market share in assets held by commercial banks. The indigenous and newer institutions, which are relatively smaller, have tended to be aggressive in their lending activities. The foreign banks seem to be guided by similar norms of risk assessment and limits on exposure that is dictated from their head offices. On average, they have better loan portfolios and stronger balance sheets.\textsuperscript{103} Many of the local banks have suffered from weak portfolios and are often subject to subtle and explicit political pressures to lend. Although some of the new and local banks have strong balance sheet positions, the experience with the failed financial institutions has reinforced perceptions about the new banks (see chapter 3). Two commercial banks, in which the government has equity, have been restructured in order to correct their operational problems. The inter-bank market has not deepened mostly because of the operational limits imposed by the foreign banks. Consequently, the local banks have

\textsuperscript{103} The situation may have changed due to exposure to the commercial agricultural sector. The ability of commercial farmers to service their loans has been threatened by government’s programme of forced land acquisitions and disruption of production activities by war veterans.
tended to rely more on the RBZ facilities for liquidity. Contrary to what one might expect, emerging competition has not reduced the level of spreads to a significant extent.

Discussions with executives from selected local banks revealed a perception that the interbank market would work well if the foreign banks did not set limits on the local banks needing liquidity. Some frustration was expressed that some banks are forced to resort to the RBZ for liquidity even when other institutions have the liquidity but are constrained by their limits of exposure to particular institutions. Although treasury bills, the finest paper in the Zimbabwe market, would normally be used to secure such lending, the foreign banks have generally preferred to place their funds at zero interest rates with the RBZ and not increase their exposure to indigenous banks. There seems to be a basic mistrust of the new institutions. Officials from foreign banks confirmed the general mistrust of the new institutions. The experiences of failed banks have reinforced these perceptions.

Whether or not there has been increased competition overall is unclear. An unambiguous answer could be derived from a detailed review of the financial margins and returns of the institutions. However, such data is not readily available for the current exercise. Nevertheless, it is worth noting that sheer numbers of institutions and range of financial instruments are poor guides to ascertaining the level of participation in markets where there is some segmentation such as the case in Zimbabwe. Furthermore, vertical integration, mergers and consolidations may concentrate power in a few banking groups. The concentration ratios shown in chapter 3 do not lend much support to the idea of strong competition having been injected into the financial system. As indicated earlier, market segmentation is a strong explanation for this. The frequency of upward adjustment of legal reserve requirements after liberalization has contributed to a notable shift of funds from banks to non-bank financial institutions, which are subject to lower reserve requirements. This has given rise to complaints about the unfair, if unwittingly accorded competitive advantage to non-bank institutions.

A number of indicators can be used to identify potential problems in the banking system; sectoral credit concentration, trends in the M2/GDP ratio, yields offered by

This information was obtained from interviews I had with executives of selected financial institutions covering the two broad groups during my visit to Zimbabwe in June 2000.
different institutions and the credit to total deposits ratio. The ratio of credit to total deposits is a good indicator of banks' ability to mobilize deposits to fund lending operations. A high ratio could be a signal that the system is under stress and that the level of liquidity is too low to withstand it. In Zimbabwe, the average ratio of bank credit to liabilities increased from 90 percent during the period 1975-80 to 133 percent during the period 1991-98. Over the same period, the average ratio of quasi money to broad money increased from 37 percent to 64 percent as shown in table 4.4 and figure 4.5. The increases in these ratios suggest that the system was under stress in funding the dramatic increases in credit and that the efficiency with which financial institutions mobilized deposits was weakened. However, the movements in the averages of another indicator of efficiency, the ratio of reserve money to quasi money seem to suggest some improvement in the level of efficiency. An examination of the annual observations in this variable shows a substantial decline in the ratio (improved efficiency) from 1 percent in 1975 to 0.4 percent by 1980. The ratio hovered around 0.5 percent during the period 1981-94 and suggests no discernible improvements before the sharp decline from 1995 to 1998. While inconclusive, the evidence on efficiency presented here is indicative. An in depth analysis of the financial ratios of the institutions would yield a sound basis for conclusions on the efficiency of operations. However, such detailed information is not in the public domain and individual institutions would not be favourably disposed to the release of such information.

The level of central bank credit to banks and other financial institutions may suggest severe liquidity problems in the financial system. In Zimbabwe, the extent of recourse of institutions to the RBZ's windows indicates the degree of stress in the system. Some of the banks have enjoyed the benefits of waivers on legal reserve requirements. It appears that some of the banks making active use of the RBZ's standing facilities have acquired large portfolios of treasury bills. In that sense it seems that the RBZ inadvertently funded the treasury bill purchases of these financial institutions in so far as they frequently relied in the RBZ's discount window.

Table 4.4. Zimbabwe: Indicative Efficiency Ratios (1975-98)-In percent

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<tbody>
<tr>
<td>DCE/PSL</td>
<td>89.6</td>
<td>99.3</td>
<td>133.3</td>
</tr>
<tr>
<td>QSM/M2</td>
<td>36.6</td>
<td>46.9</td>
<td>64.1</td>
</tr>
<tr>
<td>RM/QSM</td>
<td>0.73</td>
<td>0.51</td>
<td>0.37</td>
</tr>
</tbody>
</table>

DCE/PSL = ratio of bank credit to liabilities to the private sector, QSM/M2 = ratio of quasi money to broad money and RM/QSM = ratio of reserve money to quasi money.
d. Exchange rate and interbank market

Prior to the reforms, the official exchange rate was pegged, exporters were required to surrender all their export earnings. However, there was an export retention scheme (ERS) which entitled exporters entitlements of foreign exchange equivalent to 15 percent of their export proceeds in the allocation of the official reserves. Exchange reforms undertaken in 1992-95 fostered the development of the interbank in foreign exchange and made the market vibrant until the currency crisis of 1997. Spreads, which were initially wide, narrowed somewhat, reflecting the level of competition in the foreign exchange market. Individual and corporate foreign accounts were permitted in June 1993 and January 1994 respectively. As shown in table 4.5, the ratio of foreign currency deposits remained small suggesting that the above stated measure did not result a significant currency substitution or dollarization of the economy.

The RBZ terminated its scheme to provide forward exchange cover and henceforth permitted the market to provide it. However, the central bank continued to guarantee pre and post shipment facilities for selected exporting sectors. The ERS was widened and by July 1994, exporters were permitted to retain 100 percent of export receipts in foreign currency accounts.

Table 4.5. Zimbabwe: Foreign Currency Deposits Accounts (FCAs)

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<tbody>
<tr>
<td>Foreign currency deposits</td>
<td>1081</td>
<td>1911</td>
<td>2019</td>
<td>2307</td>
<td>3462</td>
<td>5618</td>
</tr>
<tr>
<td>Broad money</td>
<td>22171</td>
<td>28820</td>
<td>36812</td>
<td>49652</td>
<td>56628</td>
<td>73519</td>
</tr>
<tr>
<td>Ratio of FCAs</td>
<td>4.9</td>
<td>6.6</td>
<td>5.5</td>
<td>4.6</td>
<td>6.1</td>
<td>7.6</td>
</tr>
</tbody>
</table>

Source: Reserve Bank of Zimbabwe
From January 1994, the interbank market participants were allowed to deal in foreign exchange amongst themselves at uncontrolled rates but subject to the maximum spread established by the RBZ for buying and selling rates. Limits were set on the net foreign currency exposure of banks. This strengthened the development of the interbank market not only by helping to limit the exposure of dealers to foreign exchange risk but also by forcing them to trade among themselves in order to stay within the stipulated limits. Dividend remittances were freed for all post-1980 foreign investment and the repatriation of capital was guaranteed for all post April 1993 investment. The exchange rate was unified and became market determined in July 1994. Foreign exchange bureaus and brokers were created. Full convertibility of the current account was established in 1995 and some restrictions on capital were eased. The period of vibrancy in the foreign exchange market referred to above coincided with a strong external position buoyed by good export performance and capital inflows. An average import cover in excess of 3 months of imports also reflected this situation.

The situation changed dramatically with the November 1997 currency crisis described in Chapter 1. The Government reacted to this crisis through a number of draconian measures including the termination of corporate foreign currency accounts, tighter conditions for foreign exchange bureaus and subtle pressure on chief executives of foreign exchange dealers to fix the exchange rate. The gentleman’s agreement was operated under the aegis of the Bankers’ association. The banks effectively fixed the exchange rate and with the tacit consent of the RBZ. As shown in Table 4.6 under this arrangement, the market experienced continuous shortages of foreign exchange and yet the rate remained more or less fixed at US$1=Z$38. The RBZ also intervened in an effort to shore up the currency. Competition in the foreign exchange market was effectively eliminated and before long, many of the participants engaged in rent seeking behaviour. A newspaper article reported that Finhold, a banking group in which the government has a stake, topped the list of banks that were flouting the exchange rate arrangement by adding fees and commissions. This bank was reported to be adding a commission of 70 percent on foreign exchange transactions and ending up with an effective exchange rate of US$1=Z$65 compared to the pegged rate of Z$38=US$1.

105 See the Gazette of Thursday 9 March 2000 for details of measures that were to be applied to bureaux de change operations.
Table 4.6. Zimbabwe: Foreign Exchange Market position in millions of US Dollars

<table>
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<tr>
<th>Inflow</th>
<th>Outflow</th>
<th>Net</th>
<th>Average Rate</th>
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</tr>
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<td>May</td>
<td>222.80</td>
<td>219.80</td>
<td>3.00</td>
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</table>

Source: Banker’s Association of Zimbabwe.

The First Banking Corporation was reported to be adding a commission of 40 percent. The effective exchange rate offered by Standard Chartered was reported to be Z$47.5 = US$1. Stanbic Bank Zimbabwe Limited and Barclays Bank Zimbabwe Limited were reticent about their foreign exchange operations. Some foreign exchange bureaus openly quoted exchange rates that were far more depreciated than the one established by banks. For their part, virtually all the banks continued to quote the agreed rates but incorporated fees and commissions, which implied a more depreciated exchange rate. The foreign banks seized the opportunity to deal directly with public enterprises and thus would not channel foreign exchange into the market.107

106 See “Commercial banks breech agreement” in the Daily Newspaper of Tuesday 25, July. An article entitled “Banks abandon currency controls” in the Financial Gazette of Thursday 9 March 2000 reported the banks’ message to the central bank that they would abandon the exchange rate arrangement and let the market determine the rate.

107 Some controversy arose over the fact that a public oil company had been sanctioned by Government to acquire foreign exchange from one of these banks at a depreciated rate.
4.6. Post Liberalization Monetary Policy Framework

An activist monetary policy stance supported by indirect instruments of control has characterized the post liberalization period. Despite this general thrust, the policy has been subject to reversals due to some shocks and weaknesses in other policy areas. The use of open market operations for liquidity management has been constrained by the rising domestic debt, the lack of separation between paper for liquidity management and that for government financing, and the availability of proceeds from treasury bills to fund increases in government expenditure. Furthermore, the market for treasury bills has not been allowed to clear. There have been behind the scenes manipulation of the price and quantity of paper. The financing requirements of the government have increasingly become large and treasury bills and overdrafts have been the main methods of meeting this need. Figure 4.6 shows domestic debt, overdrafts and the stock of treasury bills.

Figure 4.6. Zimbabwe: Domestic Debt, Treasury Bills and Overdrafts (Z$m)

Another source of the problems for monetary policy has to do with the setting of multiple operational targets for monetary policy. As alluded to in Chapter 5, the RBZ targeted real interest rates as well as the real exchange rate. As it should have been, there
was a shift between operational targets such as international reserve accumulation, net domestic assets of the RBZ, reserve money, real interest rates, growth in broad money and the exchange rate. However, the intended targets were not hit and some of the switching was not timely.

There are inevitable trade-offs among multiple goals and operational targets of monetary policy, which have to be solved one way or another. In the debates on the interest rate versus the monetary channel of monetary policy, most central banks have in the 1990s gravitated towards the former as a favourite operating target. This followed the experiences of the 1980s when the direct targeting of monetary aggregates increased both the level and volatility of interest rate. This seems to suggest that the main sources of fluctuations have been perceived to be in the money market.

Using the standard IS/LM framework, it can be shown that interest rate targeting is better if shocks occur in the money market (LM curve) and that there is a case for monetary targeting if fluctuations originate from the goods market (IS curve).\(^{108}\) To illustrate this, fluctuations originating from the commodity market (IS curve) are shown in figures 4.7a and 4.7b while figures 4.7c to 4.7e depict the impact of fluctuations originating from the money market (LM curve). The shocks to the IS schedule typically stem from changes in consumption, investment, exports and government expenditure. Point a, represents the equilibrium for both the goods and money markets. In Figure 4.7a, the IS and LM schedules intersect at this point where ro and yo are the respective interest rate and output levels. Since the assumption is that shocks originate from the goods market, the IS schedule shifts to IS\(_1\) if the shock is positive and to IS\(_2\) if the shock is negative while the LM schedule remains constant. Interest rate and output levels increase to r\(_1\) and y\(_1\) respectively in the case of a positive shock to the IS curve and decrease to r\(_2\) and y\(_2\) respectively in the case of a negative shock. Figure 4.7b depicts a situation in which the interest rate is targeted at r\(_0\) and does not change with the shocks. It can be seen that the fluctuations in output are much larger in figure 4.7b than in figure 4.7a. This is the basis of the conclusion that targeting interest rates results in larger fluctuation in output than monetary targeting if the shocks come from the goods market.

Figures 4.7c, 4.7d and 4.7e show the impact of shocks arising from the money market. By assumption, the IS schedule is held constant. The shocks to the LM schedule may be due to changes in money demand or money supply. Therefore targeting either one would not stabilize the other. Figure 4.7c illustrates a situation where the LM shifts to LM1 because of a decrease in money demand given a targeted money supply. This shift to the right is associated an increase in output from \( y_0 \) to \( y_1 \) in output. An increase in the demand for money in a subsequent period shifts the LM schedule to LM2 and this is associated with a decrease in output from \( y_1 \) to \( y_2 \) and an increase in the interest rate from \( r_1 \) to \( r_2 \).

The situation of targeting the interest rate and the implications for the demand and supply schedules for money is shown in figure 4.7d. The initial equilibrium is the intersection of \( M^d \) and \( M^s \) at the target interest rate \( r_0 \). Holding the interest rate constant at \( r_0 \), an increase in money demand to \( M^d_1 \) requires the central bank to increase money supply to \( M_1 \). This is essentially an accommodating increase. Figure 4.7e shows that a shift in the LM schedule to LM1 when the interest rate target is set at \( r_0 \), results in an accommodating increase in money supply, which shifts the LM curve back to LM and output remains at \( y_0 \). Thus under these circumstances, monetary targeting results in larger fluctuations in both output and the interest rate than would interest rate targeting when shocks emanate from the money market.
Figure 4.7a Shocks in the Commodity Market (IS) without Targeting Interest Rate

Figure 4.7b Shocks in the Commodity Market (IS) with interest rate targeting
Figure 4.7.c. Shocks in the Money Market

Figure 4.7.d Shocks in the Money Market

Figure 4.7.e. Shocks in the Money Market
The conclusion following from the above analysis is that monetary targeting should be favoured if the shocks originate from the goods market while interest rate targeting should be preferred if the shocks come from the money market. However the real world, is a far remove from the static equilibrium analysis above, the shocks may occur simultaneously. The challenge for policy makers is to determine which of the shocks is dominant. The widespread use of interest rate targeting in recent years reflects the perception that monetary shocks have been predominant.

Policy Objectives and Instruments

The main policy objective has been to keep inflation low by maintaining the internal and external value of the currency. The intermediate policy targets have been money supply, credit aggregates, interest and exchange rates. Reserve money and short-term interest rates have been the main operating targets. Although there has been a shift to indirect instruments, moral suasion remains part of the armoury. The main policy instruments fall into two categories: a) those deployed at the initiative of the RBZ and b) those invoked at the initiative of individual banks and at pre-announced rates. Those deployed at the initiative of the RBZ include open market operations (OMO), changes in reserve requirements and repurchase agreements (repos). Those effected at the initiative of individual banks and at pre-announced rates are standing facilities, discount window operations and the overnight accommodation facility.

a. Open Market Operations

In the initial stages of the shift to indirect instruments of monetary policy, RBZ bills and special treasury bills were targeted at liquidity management while regular treasury bill issues were for financing the government’s budget deficit. Changes were made in the system of issuing treasury bills and these included the replacement of tap issues by auctions. Paper of different maturity was issued and participation in the auctions was widened. A primary dealer panel consisting of commercial banks, merchant banks and discount houses was set up. The separation of paper for financing and liquidity

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109 The new RBZ Act makes the exchange rate the responsibility of the Ministry of Finance. Strange as this arrangement may seem, the exchange rate policy has indeed been dictated from the Ministry of Finance since the currency crises of end 1997.
management and the sterilization of proceeds from the latter helped to make monetary policy transparent.

There were some differences between the Ministry of Finance and the RBZ over the interest costs of liquidity management. Special paper was discontinued and the regular treasury bills began to serve both liquidity management and government financing but without the necessary sterilization. The lack of sterilization of proceeds for paper issued for liquidity undermines the effectiveness of monetary policy. The contractionary effect of treasury bill issues is negated by the availability of proceeds from such sales for funding government expenditure. Until the end of 1998, normal Government treasury bill tenders were held weekly on Thursdays and with fixed amounts at Z$55 million. With the pressure of the Government financing requirement and maturing paper, ad hoc tenders were conducted during the week and the maturities ranged from 7 to 91 days.

The new policy measures announced in December 1998 included the introduction of a programme of treasury bill issues of 90 days to 180 days maturity. If the 6 months issue became successful, consideration would be given to the introduction of treasury bill issues with a one-year once a month. There was to be one weekly treasury bill tender and thus ad hoc issues would be discontinued. The amount to be offered depended on the Government’s short-term financing requirements and was to be announced weekly. The volume of paper to be issued was determined on the basis of government revenue projections. Such revenue projections were often too optimistic and accounted for the over-provision of government financing. This may be an explanation for the over-funding of government in especially in 1995 and 1996 when the Government built up deposits. In 1996 and 1997 the government reduced treasury bill issues and resorted to overdrafts. This was an inappropriate move because of the cost implications for the budget and the resultant injection of reserve money, which fed through to a drain on net foreign assets. The depletion of foreign reserves left the RBZ ill-equipped to deal with the November 1997 currency crisis.

With mounting pressures of government financing especially in the absence of foreign financing, ad hoc issues of treasury bills continued. At the beginning of 1999, the RBZ had trouble in raising targeted amounts through treasury bill issues. The market became reluctant to take up long-term paper in an environment where there was a sharp rise in inflation and short-term interest rates were expected to rise. These reactions prompted the RBZ to issue shorter-term paper to which the market appeared less interest
sensitive. This changed the debt profile of the country in favour of short-term debt. The market for long-term securities virtually collapsed because of the market's lack of interest. Occasionally, the RBZ was forced to cut off bids in excess of the rediscount rate in order to avoid arbitrage. If the RBZ did not take such action, there was the possibility that such bills could be sold immediately back to it at a profit. However such cutting off undermines market confidence and brings into question the commitment to reforms.

Currently, there are three tenders per week for treasury bills. The 60 days maturity issues on Tuesdays and 30 days maturities issued on Thursdays are restricted to primary dealers while the 90 days maturity bills issued on Thursdays are open to the public. The amounts offered in the first two categories are determined weekly while the 90 days maturity issue is about a Z$1 billion per week. As long as the Government account at the RBZ is in overdraft, the latter has an open mandate to issue treasury bills for financing. The RBZ uses same-day settlement treasury bill tenders from its own portfolio or from primary issues and uses repo transactions. By selling from its own portfolio, the RBZ potentially undermines the primary dealer system. Although there are plans to extend participation, presently only commercial banks are eligible to enter repurchases with the RBZ. This could be viewed as according the commercial banks an unfair competitive advantage over other primary dealers. In order to enhance its role in liquidity management, the RBZ targets a daily market shortage of Z$500 million by selling treasury bills and thereby forcing banks to access its window at the repo and bank rates. The downside to this is that the RBZ funds the banks to purchase treasury bills. Apart from market hesitancy referred to above, the required amount of treasury bills is sold. The gap between the guideline and the outcome for the three months period ended May 2000 is shown in Figure 4.8.

b. Reserve Bank Bills

Nonnegotiable reserve bank bills were used as a short-term instrument for managing liquidity. They were issued at a low interest rate of 5 percent and were non-liquid, nontransferable, and not attractive to the market. In early 1991, the yields on government stock were adjusted upwards by up to 350 basis points at the short end of the market. The objective in adjusting the yield structure was to align the yields with other market determined rates. Henceforth, government stock issues were to be conducted

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110 The repo transactions may be repurchases or reverse repurchases.
through tender and all secondary trade of such stock was to be conducted through the stock exchange or other private placements. The RBZ was to act as a broker for the stock issues and to buy and sell government stock at its discretion.

The practice of pre-announcing the stock issue programme was terminated, the objective being to accord the RBZ greater flexibility in ensuring an appropriate mix of paper, maturities and quantities. Reserve Bank lending to government was to be at the prevailing discount rate while that for its lending to parastatals was to be at the current base-lending rate for commercial banks and merchant banks. There was an increase in the stock of RBZ bills and lending to the government by the RBZ. The market viewed RBZ bills as yet another of the authorities unconventional measures to force the banks to acquire paper at well below market rates and thereby undermine credibility. As indicated above, these special bills were discontinued.

Figure 4.8. Zimbabwe: Market Position for Liquidity (March-May 2000)

The discount rate, previously known as the bank rate became an active instrument of monetary policy with rates being adjusted upwards in line with the liquidity objectives of the monetary authorities. This rate applied to discount houses, which hitherto enjoyed a monopoly position with respect to access to the RBZ discount window. Prior to liberalization, the rediscount rate was rarely changed but with the advent of liberalization, it was adjusted frequently to attain monetary policy goals. The RBZ restricted monetary
expansion by reducing the quantities of Bankers' Acceptances that it discounted. Eligibility for discount was limited to paper relating directly to specific export merchandise transactions and only those relating to imports backed by firm export orders or where there was evidence of continuity of exports. Export bills continued to be rediscounted at favourable rates. Paper eligible for rediscounting included treasury bills with less than 7 days to maturity, tobacco bills of up to 180 days to maturity and export-related bankers' acceptances.

Initially, the rediscount rate was set at the same level as the overnight accommodation rate (the rate at which the RBZ provided liquidity to the banks through discount houses), with the penal rates being the only difference between the two. The two rates were subsequently separated to make the rediscount rate an indicator of the RBZ's medium-term view of inflation and the accommodation rate, a direct indicator of prevailing liquidity conditions in the money market. Repurchase arrangements (repos) whereby the RBZ only resold BAs to the originating finance house at predetermined prices was discontinued. Henceforth the RBZ could hold bills to maturity or sell them to whoever it chose.

The system of rediscounting treasury bills was modified by reducing the size of tender denominations from Z$10,000 to Z$5,000, opening up participation in the tender to individuals, insurance companies, pension funds, the POSB and companies. The central bank became the sole underwriter of treasury bills and variations in the maturity and amounts of bills were adopted. In early 1994, the RBZ was authorized to issue special 91-day treasury bills to assist RBZ bills in short-term liquidity management.\footnote{The proceeds from special treasury bill issues were sterilized and this implied interest costs for the budget.}

The RBZ conducted weekly tenders for treasury bills and the interest rate established at these tenders acted as a benchmark for rates on treasury bills issued to mop up excess liquidity later each week. In an effort to enhance flexibility in liquidity management, the RBZ experimented with the issuance of 7 and 14-day special treasury bills. The three months discount rate reflected the RBZ's medium-term view on inflation, did not respond to short-term market conditions, acted as a cap on other interest rates and was a constraint of sorts to policy effectiveness. These concerns led to the replacement of the discount and overnight rates with the bank rate and the introduction of repos. This also
created the scope for the RBZ to influence short-term interest rates and enhance liquidity management by discouraging excessive reliance on overnight accommodation by clearing banks. In this set up, the bank rate is viewed as a last resort window when banks have failed to access funds through repurchase agreements.

d. Repos

In December 1998, repos were introduced to assist in the accommodation of market shortages and surpluses of liquidity. The interest rate payable on repurchase agreements has a direct effect on short-term market rates. With these changes, the discount rate was replaced by the bank rate, which is driven by market conditions. The bank rate became a reference rate for all other market rates. The relationships among the main rates were set as follows: the bank rate would be 2-3 percentage points above the treasury bill rate; the repo rate was to be 2 percentage points below the treasury bill rate; and the reverse repo rate was to be 3 percentage points below the treasury bill rate. The initial margins between the rates were widened in July 1999 and the intention was to discourage borrowing from the RBZ. The bank rate is 5 percentage points above the effective treasury bill rate. The repo rate which had been set below the treasury bill rate was set at 3 percentage points above the effective treasury bill rate. The current structure of rates is as follows:

Bank rate = TB + 500 basis points, Repos = TB + 300 basis points and Reverse Repos = TB + 200 basis points.

As opposed to facilities hitherto initiated at the initiative of banks, all repo transactions are at the initiative of the RBZ. Projected liquidity shortages are accommodated through competitive bidding for RBZ funds, which are supplied through repos and secured by treasury bills. Market surpluses are accommodated through reverse repos.

e. Reserve Requirements

Table 4.4 shows the levels of legal reserve requirements for commercial and merchant banks and finance houses as well as the dates when they were changed in efforts to tighten monetary policy during the period June 1992 to July 1999. As indicated in the table, the reserve requirements for finance houses were increased once and by 100 basis points. With respect to the coverage of this instrument, there is an anomaly that building societies and the POSB, which are deposit takers, are exempted.
Table 4.7. Zimbabwe. Levels of Legal Reserve Requirements

<table>
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<th>Date</th>
<th>Commercial and Merchant Banks</th>
<th>Finance Houses</th>
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<tr>
<td>June 1992</td>
<td>12.5 percent</td>
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</tr>
<tr>
<td>February 1994</td>
<td>13.5 percent</td>
<td>4 percent</td>
</tr>
<tr>
<td>June 1994</td>
<td>17.5 percent</td>
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<tr>
<td>November 1997</td>
<td>20.0 percent</td>
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<tr>
<td>September 1998</td>
<td>25.0 percent</td>
<td>5 percent</td>
</tr>
<tr>
<td>July 1999</td>
<td>30.0 percent</td>
<td>5 percent</td>
</tr>
</tbody>
</table>

Source: Reserve Bank of Zimbabwe

The frequent adjustment in statutory reserve requirements reflected the RBZ's efforts not only to manage liquidity but also to shore up the exchange rate. Prior to November 1998, the reserve requirements compliance period was weekly and based on the banks' liabilities to the public during the preceding week. The exemption from reserve requirements of deposits secured by government securities of up to one-year maturity could be viewed as an inducement to holding government securities.

The RBZ introduced a reserve averaging system to complement the repos system in accommodating liquidity forecasting errors and thereby ensuring the smooth functioning of the money market. Under this arrangement, the reserve requirement is based on the average deposit liability over a two-week period lagged by one week from the beginning of the maintenance period. Foreign currency deposits are subject to the same reserve requirements as domestic currency deposits. Participation in the reserve averaging system is subject to the institutions in question not being current recipients of assistance through other RBZ facilities besides the repos window, their borrowings from the RBZ being always fully covered by suitable collateral and their being in compliance with prudential requirements. The minimum penalty for abusing this privilege is the bank and rate plus a margin to be determined by the RBZ. Suspension from eligibility to support from the RBZ is the ultimate sanction.

The RBZ accorded commercial banks some flexibility in managing their liquidity by allowing them to use up to 25 percent of their statutory reserve requirement as free balances in between reporting periods. The same flexibility was not accorded to merchant

Legal reserve requirements refer to stipulated proportions of deposit liabilities that banks must hold. Prior to liberalization, the level was set at at 10 percent of deposit liabilities and for prudential purposes only.
banks and the justification for that is that these institutions are not affected by daily swings in liquidity because they neither have current accounts at the RBZ nor provide customers with current accounts. The concession to allow banks to use up to 25 percent of their reserve requirements between compliance dates had three negative effects. First, it had an expansionary effect on money supply, second, it encouraged banks to build up their reserves shortly before the compliance moment and only to withdraw them soon after and third, the RBZ was often forced to increase reserve money in order to accommodate some banks that often failed to meet their reserve requirements on compliance dates. In July 1999, the RBZ addressed this problem by removing the concession to use 25 percent of the statutory reserve requirements.\footnote{This policy was subject to further reversal when in August 2000, the RBZ reintroduced the concession to use part of the legal reserve requirements at a much higher level of 50 percent. Together with the developments in the treasury bill market, the policy of releasing reserve requirements in order to supply subsidized credit to the private sector effectively undermine the RBZ's attempts to manage liquidity. The RBZ essentially no longer has the instruments with which to manage liquidity in the banking system.}

Monetary policy had trouble in obtaining its intermediate objective, single digit inflation and a stable exchange rate. Inflation soared, reaching 42 percent in 1992 before hitting the all-time high of 70 percent in October 1999. Barring some policy reversals, the monetary policy stance can be characterized as being tight as reflected by high nominal interest rates. In some sense, it can be argued that monetary policy has been made to bear a disproportionate burden of stabilization and adjustment with little support from other policies, especially fiscal policy. For all its tightness, there is nothing to show for effectiveness in attaining price stability. The combination of a tight monetary policy stance and a lax fiscal policy has undermined macroeconomic stability. As shown above, the objective of maintaining the real discount rate about 2 percent was achieved for a few years but with adverse implications for the cost of funds and the level of economic activity. By 1998, many real interest rates had become negative because of the high levels of inflation, the underlying cause of which was the budget.

As noted above, the adoption of indirect instruments of monetary control could imply a loss of some degree of control of monetary variables and increased uncertainty concerning the volume of credit and the demand for money. Increasing integration into the international capital markets that is normally associated with financial liberalization may add uncertainty in the demand for money if speculative capital movements are induced.
When capital movement is low as is typically the case in repressed financial systems, the impact of foreign determinants of money demand are minimal and not too difficult to deal with. In the case of Zimbabwe, significant capital inflows experienced during the mid-nineties posed some problems for monetary control in that the foreign inflows were not successfully sterilized. The elimination of credit ceilings resulted in increased borrowing.

Financial innovation and the changing relationship between monetary aggregates and real aggregates have prompted some central banks to focus on narrower monetary aggregates, which can be monitored from the balance sheet of the central bank. However much preferred the strategy may be, it is also fraught with uncertainties in estimating the demand for reserve money, which in turn depends on portfolio allocations between currency in circulation and bank deposits. As discussed in chapter 6, a way around some of these problems would be for a central bank to monitor several aggregates both at the level of its balance sheet as well as at a much broader level of aggregation and compare their implications. The poor performance of monetary policy in Zimbabwe can be attributed to the absence of fiscal support. The relatively successful adoption of indirect instruments is marred by budgetary problems and in particular, the resort to issuing large quantities of short-term paper to finance deficits. Related to this, has been the poor coordination of the debt management strategy and liquidity management as reflected by the shift to short-term debt. The shift to short-term debt in an environment of volatile interest rates could adversely affect the budget if the volatility is upward.

Liquidity forecasts have been complicated by the lack of timely information on the government’s expenditure profile. The strategy to create market shortages depends importantly on having up to date information on the flow of funds in and out of the government. In the absence external sources of funding and disciplined fiscal policy, the government seems to be trapped in a vicious cycle of issuing an increasingly large volume of treasury bills with budgetary implications which create the need for more issues. Despite initial attempts, there has been no clear distinction between the use of treasury bills as an instrument of debt management or as an instrument of liquidity management. Additionally, there is no sterilization of the proceeds from treasury bill issues, which are meant to mop up liquidity. The policy intention is that treasury bill issues address both issues but the breakdown at the operational level stems from the lax fiscal policy and lack of commitment to address the rising domestic debt.
In most contexts where treasury bills are used for both purposes, major considerations would be to minimize the cost of borrowing for the government as well as minimize the cost monetary operations and disruptions to monetary policy. The distinction between liquidity and debt management requires that interest rates rather than quantities be the clearing mechanism for the treasury bill market. It is for this reason that auctions are preferred as the most suitable method of selling treasury bills. Additional considerations for liquidity management are the choice of an interest rate as the central bank's operating target; the existence of alternative means e.g. administered discount rates, through which signals on interest rate could be sent to the market and market information gathering by the central bank. Treasury bills are sold by auction in Zimbabwe but there seems to be some lack of commitment to interest rate flexibility as reflected by the occasional cancellations of some bids.

Speculation that a government that is accustomed to ad hoc policy reversals might one day force the conversion of short term paper to longer-term bonds could undermine confidence in the market. The transmission mechanism of monetary policy has been enhanced by a number of reforms instituted by the RBZ including direct communication with banks. Reserve requirements are quite high in Zimbabwe and they have been subject to frequent changes. Firstly they are a tax on financial intermediation and secondly they are ill suited for fine-tuning short-term liquidity because they make the money multiplier unstable and complicate banks' portfolio management. Furthermore, the exemption of building societies, which account for a significant proportion of deposits, from reserve requirements, creates the potential for credit expansion beyond the influence of the RBZ.

One of the major set backs for the new monetary policy framework in Zimbabwe concerns the lack of credibility in commitment to policy. The frequent and ad hoc policy reversals bear testimony to this. Government behaviour has tended to increase uncertainty and perceptions of high risk. Consequently, financial markets incorporate high uncertainty and risk premiums in the interest rates.

Inflation has become a major a problem in Zimbabwe and containing it has been one of challenges facing the RBZ. Monetary policy has been tightened but with no significant impact on inflation. Instead, the current interest rates have had adverse effects on economic activity. Efforts to reduce inflation have been undermined by persistent budget deficits.
4.7. Summary and policy issues

This chapter assesses the financial liberalization measures and the new monetary policy framework and some of the policy challenges. Barring a few remaining distortions, financial sector reforms have been far-reaching and indirect instruments of monetary control have been adopted. However, the high levels of inflation and poor support from fiscal policy have undermined these efforts. Real interest rates initially became positive but had become negative by 1998. As judged by indicators of financial deepening, financial intermediation improved somewhat but the size of both domestic and international interest rates spreads increased sharply before narrowing marginally. The continuation of wide spreads in domestic interest rates could be explained by the oligopolistic structure of the banking system. A restrictive monetary policy stance accounted for the continuation of the large spread between domestic interest rates and international rates, which in turn encouraged a surge in capital inflows, a significant proportion of which went to the stock exchange. While they have been allowed to adjust to market conditions, some interest rates are not completely free and some forms of asset prescription still apply to some nonbank financial institutions. Furthermore, some deposit-taking institutions remain exempt from legal reserve requirements.

Although data on the incidence of bad loans in the banking system is not readily available, conjectural evidence seems to suggest that all is not well. The surge in interest rates at the beginning of the liberalization programme adversely impacted upon the operations of companies and this in turn affected the banking system. There appears to have been a considerable amount of distress borrowing as companies struggled to service high interest costs of their borrowing.

Financial liberalization has to be viewed as a continuous process requiring continuous adaptation of the regulatory and supervisory framework to safeguard stability and confidence. The initial progress that was made has suffered major setbacks. Monetary policy is in the odd position that it has been tightened through high interest rates and changes in reserve requirements among others but it has not broken the inflation spiral. Liquidity management has been undermined by the non-sterilization of proceeds from treasury bill sales meant for liquidity management and the generally high levels of liquidity among financial institutions. For a short period, the target of keeping the real discount rate around two percent was exceeded but with negative consequences for economic activity. Macroeconomic instability and in particular a weak fiscal policy stance has been the
Achilles Heel of Zimbabwe’s financial sector reforms. A stronger commitment to reducing the deficit is critical for reducing the high interest rates and breaking the inflationary expectations. The RBZ has reduced access to its window and now appropriately acts as the lender of last resort and not of first resort as was the case before. Policy reversals and delayed policy reactions as typified by the RBZ’s experimentation with targeting various operational instruments such as net domestic assets of the central bank, real interest rates and reserve money have undermined credibility.

Weaknesses in the regulatory and supervisory framework within which the financial system operated were forcefully exposed by the inability of the regulatory authorities to forestall the systemic shocks generated by two failed financial institutions. Improvements in the supervisory and regulatory framework of the financial system have been slow and more reactive than proactive. The revised Banking and RBZ Acts designed to correct the situation took several years to be approved. Although the RBZ’s regulatory and supervisory powers have been enhanced, licensing authority still resides in the Ministry of Finance. If historical experiences are any guide, this leaves the process of licensing banks open to potential political influence. The regulatory powers over the range of financial institutions remain fragmented and with some institutions such as the POSB and building societies which take deposits remaining outside the control of the RBZ.
CHAPTERS5: THE DEMAND FOR MONEY IN ZIMBABWE

5.1. Introduction

The demand for money is probably one of the most widely researched topics in economics. Most of the early studies were conducted on data for industrial countries, notably the US and the UK. Findings of what Goldfeld (1973) termed “the case of the missing money” sparked concerns about stability of the demand for money function. Stability in the demand for money function is central to the calibration and implementation of monetary policy. The desire for a stable and predictable relationship among monetary aggregates the real economy, the increasing integration of capital markets, financial innovation brought about by financial liberalization, the general move towards flexible exchange rate regimes and possibilities of using monetary aggregates as nominal anchors for an economy have invigorated research interest on money demand.

The old generation of research on money demand was conducted in the tradition of partial adjustment models (PAMs). Recent studies use error correction and cointegration analysis. This suggests some dissatisfaction with partial adjustment models as well as buffer stock models, which purported to overcome the limitations of PAMs. The superiority of error correction models resides in their ability to exploit the time series properties of data while at the same time addressing the problem of non-stationarity of most time series data. In error correction models, economic theory defines the long-run equilibrium while the data address the short-term dynamics. Engle and Granger (1987) establish an isomorphism between cointegration and error correction models: ECMs entail and are entailed by cointegration (Barrow et al, 1997).

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114 Goldfeld (1973) found that the demand for money in the US data for 1972-74 grew a lot slower than might have been expected based on past relationships. Hendry and Ericsson (1991) use error correction and cointegration analysis and find the demand for money functions stable over the periods referred to as missing money and declining velocity in the US and UK respectively. They attribute the results of earlier studies to possible mispecification and not financial innovation.

5.2. Economic theory

Theoretical perspectives on the static or long run demand for money can broadly be viewed in terms of the function of money in transactions (inventory approach to smooth transactions), as an asset, as a consumer good (portfolio balance approach) and in the context of the quantity theory of money.\textsuperscript{116} Hence, the focus of the empirical work on this subject stresses the speculative, transactions, utility and precautionary motives for holding money. For all the differences in approach, these perspectives yield similar conclusions on the determinants of the demand for money. There is a vast literature including a number of surveys but no more than reference to them is made in this section.\textsuperscript{117}

One of the issues that arises in the empirical work has to do with definitions of monetary aggregates.\textsuperscript{118} Some researchers prefer narrow money in their empirical specifications. Their argument for its use is that it is more amenable to central bank control. However, controllability of this aggregate has to be weighed against the variability of its relationship with GDP and therefore its usefulness for policy. As Ericsson and Sharma (1996) observe, broader aggregates appear more stable relative to nominal income but are less amenable to control. Suffice it to point out that researchers differ on the question of which aggregate it is best to use. Given the stylized facts about financial systems in developing countries, some could argue that broad money (M2) is the better measure to monitor because it can be influenced by credit policies. Narrow money (M1) on the other hand, is more responsive to interest rate changes and open market operations, which are nonexistent or ineffective in financially repressed economies. With the exception of research that includes various types of liquid assets and divisia indices, most research has focused on narrow money and broad money. The research on the demand for money starts from the generally agreed postulate that the demand for money is a function of income (scale variable) and a vector of opportunity cost variables as follows:

\begin{itemize}
  \item The transactions demand perspective is associated with Keynesian models (Baumol-Tobin), while the portfolio balance and the quantity theory are associated with the works of Tobin (1958) and Friedman and Schwartz (1982).
  \item One is reminded of Goodhart’s law about the loss of usefulness of any monetary aggregate that is targeted for policy purposes.
\end{itemize}
\[ M^d/P = f(Y, 8) \]  

(5.1)

where \( Y \) = income and \( \lambda \) = vector of opportunity cost variables. The above formulation can take semi-log or a log-linear forms with interest rates entering in either logs or levels as follows:

\[
m^d - p = \beta_0 + \beta_1 y_i + \beta_2 \Delta p_i + \beta_3 r_i + \varepsilon_i \]  

(5.2)

or

\[
m^d - p = \beta_0 + \beta_1 y_i + \beta_2 \Delta p_i + \beta_3 r_i + \varepsilon_i \]  

(5.3)

where \( \beta_0, \beta_1, \beta_2, \) and \( \beta_3 \) are coefficients and \( m^d, p, y_i, \Delta p_i \) and \( r_i \) are logs of real money balances, price levels, income (scale variable), inflation and rates of return \((r_i)\). The last variable typically comprises two elements; the rates of return on money itself and the rate of return on other assets. The theoretical expectations of the signs and magnitudes of coefficients are \( \beta_1 = 1 \) (or 0.5 according to the quantity theory or the Baumol-Tobin framework), \( \beta_2 \leq 0 \) and the two components of \( r_i \geq 0 \) and \( \leq 0 \).

The demand for money is modelled in real balances and the basis for that is that equilibrium demand and supply of goods and services is dependent on relative prices. Support for this approach derives from the empirical validation that the price elasticity of the demand for money is 1. Price homogeneity is therefore imposed on the basis of theory. However, empirical specifications are many and varied. The error term is presented as \( \varepsilon_i \sim (0, \sigma^2) \), meaning that it is an independently distributed random white noise process drawn from a normal distribution. This term is also postulated to have a mean of zero, a constant variance and is uncorrelated with its own past. The specifications in equations 5.2 and 5.3 imply instantaneous adjustment of money holdings to desired levels and this is at odds with reality. The empirical desire to capture the sluggishness in the adjustment process was catered for in partial adjustment models, which posit successive but steady reductions in the difference between desired and actual holdings. Never the less, specifications 5.2 and 5.3 are useful in the two-stage procedure for the derivation of error correction terms, which are designed to overcome the limitations of the partial adjustment approaches.

In this chapter, the demand for money function in Zimbabwe is addressed through an error correction model derived from the cointegration procedure indicated below. The determination of the stability or otherwise of the selected monetary aggregates is an
integral part of this exercise and this is done through recursive graphics. The demands for narrow and broad money (m1 and m2) are estimated using quarterly data and seasonal dummies for period is 1979 to 1998. Semi-log-linear PAM specifications for both narrow (m1) and broad money (m2) can be presented as follows:119

\[
\text{Ln} (m_{1t-p_t}) = \beta_0 + \beta_1 \ln y_t + \beta_2 \Delta p_t + \beta_3 r3m_t + \beta_4 \text{DFL}_t + \beta_5 \text{ln}(m_{1t-1-p_t}) + \varepsilon_t \tag{5.4}
\]

\[
\text{Ln} (m_{2t-p_t}) = \beta_0 + \beta_1 \ln y_t + \beta_2 \Delta p_t + \beta_3 r3m_t + \beta_4 \text{DFL}_t + \beta_5 \text{ln} m_{2t-p_{t-1}} + \varepsilon_t \tag{5.5}
\]

where \( m_{-p} = \) real money balances
\( y = \) real GDP
\( \Delta p = \) rate of inflation
\( r3m = \) interest rate on 3 months deposits
\( \varepsilon = \) error term
\( \text{DFL}_t = \) dummy for financial liberalization (1975-90= 0 and 1991-98=1)

Dynamic versions of the above specifications adopted to yield the error-correction model (ECM), which is derived from the cointegrating specification in the Johansen procedure can be presented as follows:

\[
\Delta m_{1t} = \beta_0 + \beta_1 (L) \Delta y_t + \beta_2 (L) \Delta p_t + \beta_3 (L) \Delta r_t + \beta_4 \Delta \text{DFL}_t + \beta_5 (L) \Delta m_{1t-1} + \beta_6 [m_{1d_{t-1}} - m_{1t-1}] + \varepsilon_t \tag{5.6}
\]

\[
\Delta m_{2t} = \beta_0 + \beta_1 (L) \Delta y_t + \beta_2 (L) \Delta p_t + \beta_3 (L) \Delta r_t + \beta_4 \Delta \text{DFL}_t + \beta_5 (L) \Delta m_{2t-1} + \beta_6 [m_{2d_{t-1}} - m_{2t-1}] + \varepsilon_t \tag{5.7}
\]

where \( \Delta m_{1t} \) and \( \Delta m_{2t} = \) change in real narrow and broad money balances,
\( \beta_0(L) = (i = 0,\ldots,6) \) are polynomials in the lag operator, \( m_{1d_{t-1}} \) and \( m_{2d_{t-1}} \) are the long-run target values for real narrow and broad money balances, \( [m_{1d_{t-1}} - m_{1t-1}] \) and \( [m_{2d_{t-1}} - m_{2t-1}] \) are the error correction terms.120

119 Although the log-linear specification is preferred because of the convenience of a direct interpretation of the coefficients as elasticities, it is useful to note that such a specification is not without some limitations. In particular, it constrains the long-run income and interest elasticity to be constant and this is much debated in the literature. The assumption of constant interest elasticity implies that a 1 percent rise in the rate of interest leads to a constant percentage effect on the demand for money regardless of the level from which the change occurs. (see Otto (1994) for details).

120 \( m_{1t-1} \) and \( m_{2t-1} \) are fitted values from equations 5.4 and 5.5 respectively.
In essence, the ECM represents a reparameterization of an autoregressive-distributed lag model (ADL), which generalizes the conventional PAM model while at the same time allowing different rates of reaction to the various determinants of the demand for money. This approach allows for the identification of potentially different costs of adjustment and disequilibrium and the ECM term ensures that the long-run target is achieved in steady state. Ericsson (1997) Barrow et al (1997) and Kennedy (1998) discuss the important properties of ECM and its attraction relative to autoregressive distributed lag models (ADL).

Some of the motivation for this kind of work on Zimbabwe or any other economy has been cited above. In the case of Zimbabwe, challenges of the changes in the policy regimes and subsequent policy reversals in a context where disproportionate responsibility for economic stabilization and adjustment were assigned to monetary policy are further impetuses for a better understanding of the issues. As described in Chapter 3, monetary policy was passive prior to financial liberalization.

Chapter 4 analyses the post liberalization monetary policy framework and the problems associated with failure to hit the set monetary policy targets. The RBZ focused on an intermediate target for monetary aggregates in its balance sheets but apparent policy conflicts resulted in inappropriate targets and policy failures. On the one hand there were concerns with inflation, reducing real interest rates and maintaining external competitiveness. The result was a poor combination of trying to target real interest rates, maintaining competitiveness by targeting the real exchange rate and shifting between operational targets such as international reserve accumulation, the net domestic assets of the central bank, reserve money, real interest rates and growth in broad money supply without hitting the intended targets.\textsuperscript{121}

The RBZ’s targeting of the real exchange rate to protect competitiveness in a context where it had limited success in sterilizing foreign financial inflows and at the same time targeting real interest rates militated against its ability to rein in inflation and control monetary growth. Debates about inflation targeting and central bank independence as a way of addressing some of these problems have gained currency in recent years. The RBZ

\textsuperscript{121} See Ellyne (1999) and references therein for a discussion of the choice of nominal anchors, in particular the choice between exchange rate-based or money based anchors and the particular experience of Zimbabwe.
has expressed a keen interest on these issues, perhaps as way of getting a stronger commitment for the government to desist from monetizing fiscal deficits.

At various stages, the Reserve Bank of Zimbabwe experimented with elements of both money-based and exchange rate-based stabilization, which, in the literature are coterminous with “recession now versus recession later” strategies respectively. These attempts were notable for their lack of consistency and coherence. The empirical regularities in five countries that followed money-based stabilization were an ambiguous response in the current account balance, slow convergence of inflation to the rate of monetary growth, real appreciation of the domestic currency initial contraction in economic activity and initial increase in domestic real interest rates due to a liquidity crunch. The main empirical regularities associated with exchange rate based stabilization in 11 countries that pursued it include slow convergence of the rate of inflation to the rate of devaluation, real appreciation of the domestic currency, an initial increase in real private consumption and real GDP followed by a contraction, an ambiguous response of domestic real interest rates.

**Error Correction and Cointegration Analysis**

The advent of error correction and cointegration analysis has altered the conduct of time series analysis and in the process restored economic theory to centre stage in explaining the relationships between economic variables. The antecedents of these approaches can be viewed in the two main dimensions in which econometricians and statisticians used time series data in different ways. Assuming that the non-stationarity of most economic time series did not affect empirical analysis, econometricians used a

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123 Countries that have had some experience with episodes of exchange rate-based stabilization include Argentina, Brazil, Uruguay, Chile, Israel and Mexico. Those that have experienced episodes of monetary stabilization are fewer and include Chile in 1975, the bonex plan in Argentina in 1989, the Collor plan of the 1990s in Brazil, Peru and the Dominican Republic. One of the main striking features of the macroeconomic imbalances in these countries is very high level of inflation. This is of interest in a study of Zimbabwe where the rate of inflation has been accelerating and now stands above 60 percent per year and with no clear sign of abating.

traditional classical linear regression model (CRL) to represent the behaviour of such data. They paid little attention to the dynamics of such data and only concerned themselves with addressing problems of simultaneity and autocorrelation. Among the problems of this approach were spurious regressions leading to erroneous interpretations of the $R^2$, DW and t statistics. On the other hand, time series analysts tended to be atheoretical and circumvented the stationarity problem by differencing data a sufficient number of times to render them stationary. This is typically the case with the Box-Jenkins (BJ) approach. The inputs for this approach are new data series generated by differencing the original data to render them stationary. Following Kennedy (1998), the transformation of a variable $Y$ to its stationary version $Y^*$ can be shown as an autoregressive integrated moving average model (ARIMA, $p,d,q$) input into the BJ analysis as follows:

$$Y_t^* = \Phi_1 Y_{t-1} + \Phi_2 Y_{t-2} + \ldots + \Phi_p Y_{t-p} + \epsilon_t + \theta_1 \epsilon_{t-1} + \theta_2 \epsilon_{t-2} + \ldots + \theta_q \epsilon_{t-q}$$  \hspace{1cm} (5.8)

where $\Phi$ and $\theta$ are unknown parameters and the error term is $\epsilon_t \sim \text{IN}(0,\sigma^2)$, $p$ is the number of lagged values of $Y^*$, indicating the order of the autoregressive (AR) dimension of the model, $d$ is the number of times $Y$ is differenced to produce $Y^*$ and $q$ is the number of the lagged values of the error term, representing the moving average (MA) dimension of the model. The above model expresses the dependent variable in terms of its own past values together with current and past errors and is considered atheoretical in this sense.

The concept of stationarity can be illustrated by examining a simple data generating process (d.g.p.) in which a variable $z_t$ is generated in a first-order autoregressive process as shown in this adaptation from Harris (1995):

$$z_t = \alpha z_{t-1} + \mu_t$$  \hspace{1cm} (5.9)

If $|\alpha| < 1$, then the series is mean reverting and the variance of $z_t$ is finite. In that sense the series is considered stationary, it has a constant mean and variance which are independent of time. The concept of integration arises from the idea that a non-stationary series can be made stationary by differencing it. Thus a stationary series is said to be integrated of the

125 As Granger and Newbold point out, spurious regression is especially likely when the adjusted coefficient of determination exceeds the DW statistic. High adjusted $R^2$ may simply be indicative of correlated trends and not economic relationships while low DW statistics may reflect nonstationary residuals.

126 The variance of $z_t$ in this example is $\sigma^2/(1-\alpha^2)$ and the mean is zero.
order zero (I (0)). If $\alpha=1$ then $z_t$ is non-stationary and explosive in the sense that its variance becomes infinitely large as $t$ approaches infinity. An aggregation of a series of $z_t$ over a number of periods starting with an initial value of $z_{t_0}$ can be presented as follows:

$$z_t = z_{t-n} + \sum_{j=0}^{n-1} \mu_j - f$$

(5.10)

The above equation suggests that the current values of $z_t$ depend on its initial value and disturbances occurring between $t-n+1$ and $t$ while its variance increases to infinity as $t$ approaches infinity ($t \rightarrow \infty$). In essence, this non-stationary series has different means at different points in time and its variance increases with sample size. Such a series is said to be integrated of the degree one (I(1) if it can be rendered stationary by differencing once.

As alluded to above, economists recognize that many macroeconomic time series are non-stationary in their levels and need to be differenced to render them stationary. While the adoption of the BJ strategy of using only differenced variables to address the problem of non-stationarity would be tempting, there are problems concerning the loss of long-run equilibrium properties of the data as indicated by the error correction approach. The formal test for stationarity is that $\alpha = 1$, hence the term tests for unit roots. 127 As Kennedy (1998) observes, the ECM representation could be criticized for mixing data in levels and differences in the same equation especially if the levels data are I (1). However, this potential problem is removed by the fact that the levels data enter the ECM estimation equation as a single entity capturing the extent to which the system is out of equilibrium. Although the levels data variables may be I (1) individually, the special combination of them captured in the ECM term is I (0). Herein lies the concept of cointegration which essentially refers to the notion that two or more series which contain stochastic trends and are non-stationary I (1), form a long-run equilibrium relationship and move together over time are cointegrated because the differences between them are stationary. 128 Cointegration mimics the existence of a long-run equilibrium to which an economic system converges.

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127 A variety of tests for unit roots has been developed see Harris (1995), Kennedy (1998), Sargan and Bhargava (1983) and for properties of these tests.

over time. In that context, the error term essentially represents divergence from the equilibrium at a given time. Variables in an ECM model must be cointegrated and cointegrated variables must have an ECM representation.

Adapting Holden and Perman (1994)'s illustration, cointegration may be illustrated by assuming a set of variables $z_1, z_2, ..., z_k$ which is $I(1)$ and needs to be differenced once to obtain stationary random variables. If $Z_t$ is the $(k,1)$ vector with $i^{th}$ element equal to the value of $z_i$ at time $t$, then $Z_t$ is a vector a combination of whose elements would be $I(1)$ and this can be depicted as:

$$\alpha'Z_t = \begin{bmatrix} \alpha_1 \\ \alpha_2 \\ \vdots \\ \alpha_k \end{bmatrix}' \begin{bmatrix} z_{1t} \\ z_{2t} \\ \vdots \\ z_{kt} \end{bmatrix} = \sum_{i=1}^{i=k} a_i z_{it}$$

(5.11)

Regarding the above equation, it is worth noting that:

- A vector $\alpha$ which leads to $\alpha'Z_t$ being a stationary random variable would have at least two non-zero elements. A single non-zero element of a vector results in a non-zero multiple of a single element of $Z_t$ which must be $I(1)$.

- If an $\alpha$ vector can be found such that $\alpha'Z_t$ is $I(0)$ then any non-trivial scalar multiple of vector $\alpha$ will lead to a stationary linear combination of elements of $Z_t$.

- A second linear combination of the elements of $Z_t$, which is not related to the initial linear combination, may be found. It may even be possible to find up to $k-1$ linearly independent $\alpha$ vectors $(\alpha_1, \alpha_2, ..., \alpha_{k-1})$ such that $(\alpha_i)'Z_t$ is stationary for $i = 1, 2, ..., k-1$. If $\alpha_i, i=1,2, ..., r$ $(0 < r \leq k-1)$ are linearly independent vectors rendering $(\alpha_i)'Z_t$ stationary, it follows that the $(k,r)$ matrix $\alpha = [\alpha_1, \alpha_2, ..., \alpha_r]$ will have full column rank and that the $(r,1)$ vector will comprise stationary variables. The Engle-Granger (1987) approach was the first to be used for determining cointegration rank. However, Johansen's (1991) system-based technique has proved to be more efficient and

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129 For a detailed exposition see Holden and Perman (1994).
popular.\textsuperscript{130} In using the multivariate cointegration model, it worth noting that the difficulties of interpreting cointegration space increase when more variables are included in the vector autoregressive system.

5.3. Past Studies

There is a paucity of published research on the demand for money demand in Zimbabwe.\textsuperscript{131} Even the RBZ does not seem to have done much in this area. Furthermore, this research is not in the public domain and thus has not motivated discourse on this important policy issue.

Jenkins (1999) and Moyo (1998) conducted research on money demand in Zimbabwe in the tradition of error correction models. The sample periods, data and explanatory variables are different from those used in this thesis. Additionally, the researchers do not address the issue of stability specifically. However, Moyo mentions that the demand for money function was stable but she neither indicates the basis for this conclusion nor indicates the period covered by her estimations. Jenkins' short run demand for money estimate over the period 1980-95 establishes income, inflation and its lags, depreciation and the black market exchange rate as the main explanatory variables. The coefficients on income and the opportunity cost variables (inflation and exchange rate depreciation) are consistent with theoretical priors. However, the adjustment to deviations from the long-run (error correction term) is rather slow. The equation fit for broad money (0.73) is fairly close to that reported in this study. Apart from differences in the periods covered, Jenkins finds the income variable and exchange rate statistically significant in the dynamic model. Moyo (1998)'s study also finds income, interest rate and exchange rate movements as explanatory variables. These are all reported as significant and their coefficients are correctly signed. The error term is also statistically significant and the equation fit is 0.81. In contrast to these studies, the empirical results in this chapter did not find these variables statistically significant in the short run. Additionally, the speed of adjustment to deviations suggest a faster pace for error correction mechanism (30 percent per quarter).

\textsuperscript{130} See Johansen (1991), Johansen and Juselius (1991) and Harris (1995) for descriptions of the methodology and Harris (1995) for the limitations of single equation approaches.

\textsuperscript{131} Recent exceptions are Jenkins (1999) Moyo (1998).
5.4. Data Sources and Issues

Having laid out the methodological issues, the discussion in this section turns briefly, to the choice of explanatory variables the definitions, sources and statistical properties of the Zimbabwe data. The following variables, which were derived from the International Financial Statistics (IFS) unless otherwise specified were used in the analysis of the money demand in Zimbabwe:

- **\( r_{ml} \)** is the log of real narrow money derived by deflating nominal narrow money by CPI, narrow money comprises currency plus demand deposits in money deposit banks.
- **\( r_{m2} \)** is the log of real broad money also derived by deflating the nominal counterpart with CPI. It comprises narrow money plus quasi money. The coverage is limited to the money deposit banks and focuses on the monetary survey as presented in the IFS.
- **\( y \)** is the log of real quarterly GDP series derived by applying the rates of change in the quarterly index of industrial production, which is highly correlated with GDP. The manufacturing sector accounts for over 25 percent of GDP in Zimbabwe.
- The various interest rates tried in the specifications include treasury bill rate (\( tb \)), deposit rate on 3 months deposits (\( r_{3m} \)), bank rate (\( br \)) and London interbank rate (\( fi \)).
- **\( p \)** is the log of the consumer price index at 1995 prices (CPI 1995=100).
- **\( \Delta p \)** stands for inflation.
- **\( X_{ND} \)** is the exchange rate index starting from the last quarter of 1979 and it is \( \Delta lx_{nd} \) is the change in the log of the exchange rate index.
- **\( DFL_{4} \)** is a dummy for financial liberalization, which takes the form (1975-90= 0 and 1991-98=1) to reflect that the process of financial liberalization started in 1991 in Zimbabwe.

Scale variables

As is well known, the choice of variables in money demand specifications has been widely discussed among researchers. Sketched out below are some of the arguments and the specific choices of variables for the exercise at hand. The list of variables that can be used as scale variables includes wealth, Gross National Product (GNP), Net disposable income (NDI), gross national expenditure (GDE) and Gross Domestic Product (GDP). Each of these scale variables relates to the volume of economic activity. Clearly, the transactions motive would emphasize current income and the speculative motive would place more emphasis on wealth. There is some debate in the literature about the choice
between production based and expenditure based proxies for transactions. It is worth noting
the significant wedges driven by net factor payments and terms of trade shocks between the
various national accounts concepts. Some researchers establish the superiority of
expenditure based proxies.\textsuperscript{132}

However, there are considerable problems in deriving such expenditure-based
proxies in some countries especially on a quarterly basis where there are no national
accounts data on that basis. There are no quarterly series of GDP for Zimbabwe. That
problem is addressed by deriving quarterly series of GDP series was from the seasonal
pattern of the index of manufacturing production which is highly correlated with GDP.

**Opportunity Cost Variables**

The own-rate of money and the rate of return on alternative assets are the two
components to the notion of the opportunity cost of holding money. Some researchers
advocate the inclusion of both of these rates in money demand specifications while others
assume that the own-rate of money is zero or that the interest rate is unvaried enough to
justify its exclusion.\textsuperscript{133} Consequently, some studies use one measure of interest rate to
represent both the own-rate and the return on alternative assets. Yet other researchers use
real interest rates, calculated as the difference between nominal rate of interest and inflation
(see Kamin and Ericsson (1993). Theory does not offer unambiguous guidance on which
among the constituents of the term structure of interest rates to use as the best indicator of
the opportunity cost. Further discussion also arises from deciding whether to use long-term
or short-term rates of interest.\textsuperscript{134}

One of the striking differences between demand for money studies in developed
countries and those in developing countries has to do with the choice of opportunity cost

\textsuperscript{132} See Mankiw and Summers (1986) and Bomberger and Makinen (1980).

\textsuperscript{133} See Tobin (1958), Klein (1974) and Ericsson (1998) for the former view and Laidler
(1985) for the latter view.

\textsuperscript{134} Heller and Khan (1979) present a way to incorporate the term structure of interest rates
in the demand for money function. Feige and Pearce (1977) and other references in Heller
and Khan above, all seem to advocate a consideration of all candidates in the term structure
of interest rates. Arestis (1976) also has a good discussion on the choice between long-term
and short-term interest rates and concludes that it may be immaterial which rate is chosen
because the rates tend to move together.
variables. In a survey of money demand studies in developing countries, Ghatak (1981) concludes that the specifications for the demand for money function in developing countries should include real income as the scale variable, expected inflation and/or some external opportunity cost variables such as the expected rate of currency depreciation or foreign interest rate. Domestic interest rates are often excluded in specifications of the demand in developing countries and there are at least four reasons for this.

- the lack of depth of financial systems and therefore the absence of alternative forms in which to hold assets.
- the choice of asset holding in developing countries is often limited to money or real goods.
- the lack of variability in interest rates which are administratively controlled.
- the transactions motive for holding money tends to be dominant in developing countries.

The above line of reasoning has generally led to the view that the demand for money in LDCs is a function of real income and inflation. Despite the above arguments for not including interest rates as explanatory variables for the demand for money, some researchers argue that if borrowing even from informal markets plays an important role in the economic activities observed in developing countries, interest rates are an important variable. While interest rates in the informal financial markets are not observed, they are indicators of the degree of credit restraint. Ghatak (1976) makes some empirical estimates of the linkages between the formal and informal financial sectors.

While many researchers recommend the use of expected inflation, as an opportunity cost variable in developing countries with controlled interest rates, Wong (1977) suggests

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135 This has been a subject of considerable interest among researchers. See Ghatak (1981), Adekunle (1983) and Wong (1977).

136 However, this reason no longer holds in systems that have been subject to liberalization and therefore interest rate changes.

137 See Ghatak (1976), Adekunle (1968) and Park(1970)
the use of credit restraint variables. In cases where interest rates are subject to regulation, they may not be good proxies for the opportunity cost of holding money but instead be a reflection of the restrictiveness or looseness of monetary policy. Under these circumstances, it is usual to supplement or replace interest rates with inflation in the specification for the money demand function and as indicated in Chapter 2. The Cagan type analysis would be appropriate. Prior to 1991, interest rates were subject to controls in Zimbabwe.

The opportunity cost variables experimented with in this study include inflation, term deposit rates, treasury bill rates, bank rate, the spread between lending and saving interest rates, changes in the exchange rate and foreign interest rates. The motivation for the inclusion of foreign opportunity cost variables is to capture the possibilities of capital mobility and currency substitution especially after 1994 when foreign currency accounts were legalized. Furthermore, the inclusion of treasury bill rates, exchange rate changes and LIBOR takes care of speculative motives for changes in agent’s portfolios domestically and abroad. In the case of Zimbabwe, there was a tight foreign exchange control regime, which prohibited residents from holding foreign assets as described in Chapter 1.

Deflator

Ideally, the GDP deflator should be used in the analysis of real transactions demand for money. However, the absence of such series on a quarterly basis in Zimbabwe directs us to an alternative, the CPI. The consumer price index is used to deflate nominal variables into real series. Notwithstanding its shortcomings, the CPI is a better deflator since it includes import prices and excludes export prices. This is especially the case where a country is dependent on imports and where inflation is used, as a measure of the opportunity cost variable.

---

138 This is especially the case in countries with high rates of inflation which dominates the rate of return on other financial assets. This is in the tradition of work by Cagan (1956, see chapter 2), Frenkel (1977) and Khan (1977).

139 The wholesale price index is the other price index that can be used. It needs to be noted that both indices often turn out to be poor proxies for domestic inflation. The CPI often suffers from the consumption basket being dated and unrepresentative and also because of the presence of subsidies and price controls in some countries.
5.5. Zimbabwe data analysis and results

Figure 4.1. shows the levels and differences of monetary aggregates generally reflecting the non-mean-reverting characteristics and nonstationary characteristics of the data in levels. The differenced series are mean reverting and thus stationary. Visual inspection of the figure shows the impact of the major shock in output in the drought stricken period 1992/93 on money and prices. Velocity of money increased sharply as inflation soared mainly on account of output constraints. As discussed in Chapter 3, the proportion of both m1 and m2 in GDP declined sharply in 1991 and 1992, mainly because of the drought shock. As indicated in Chapter 3, interest rates adjusted upwards in contrast to their unvaried pattern before 1990. They generally moved in harmony with the discount rate, which was the reference rate. This lends some validity to the suggestion that the choice of one rate for use in the demand for money function is just as good as any.

Unit roots

Table 5.1 shows the set of the results of various tests for unit roots with constant and with constant and trend for levels and first differences of the data. For the data in levels, the null hypothesis of a unit root for both with constant and constant and trend is accepted by the Durbin-Watson statistic of each variable and the Dickey-Fuller (DF) statistic. The augmented Dickey-Fuller (ADF) test for all the variables in levels with the exception of y and rm2 at the fourth lag reflect nonstationarity. This is also borne out by the DF and DW tests shown in columns 5 and 6. Columns 3 and 4 show that all the variables become stationary after being differenced once and thus are I (1). As discussed above, this is important for integration and cointegration among the variables.

---

140 As Hendry and Doornik (1996) note, few variables have quadratic trends, it is advisable to include a trend in case a variable is stationary around a linear trend and an intercept unless the variable clearly has a zero mean. The implications of including the constant and trend are: \( \Delta y_t = (\beta-1) y_{t-1} + \epsilon_t \), if \( \beta = 1 \), this means zero growth but if \( \beta < 1 \), the mean is zero; \( \Delta y_t = \alpha + (\beta-1) y_{t-1} + \epsilon_t \), if \( \beta = 1 \), there is a trend in \( y_t \) and if \( \beta < 1 \), there is a non-zero mean; \( \Delta y_t = \alpha + (\beta-1) y_{t-1} + \mu + \epsilon_t \), if \( \beta = 1 \), there is a quadratic trend in \( y_t \) and if \( \beta < 1 \), there is a trend in \( y_t \).

141 The DW for each variable as opposed to the conventional DW statistic of the OLS regression residuals determined as follows: DW (x) = \( \frac{\sum_{t=2}^{T}(x_t - \bar{x})^2}{\sum_{t=2}^{T}(x_t - \bar{x})^2} \) and if \( x_t \) is a random walk, DW will be closer to zero whereas if it is white noise, it will be around 2.
Figure 5.1. Monetary variables in levels and differences (normalized ranges and means).

Figure 5.2. Opportunity cost variables

Cointegration Analysis

Table 5.2 reports a summary version of the cointegration analysis of real narrow money using the Johansen procedure while and the detailed output and tests are shown in
Table 5.1. Variables rm1, y, infl and r3m are entered as endogenous in that order. In the light of the limitation indicated regarding the number of variables in the cointegration space, the variables in this analysis are limited to the most basic variables that are assumed relevant. A constant and seasonals are also entered as unrestricted and therefore outside the cointegration space.

Table 5.1. Unit-root tests in levels and first differences 1981 (2) to 1998 (4)

<table>
<thead>
<tr>
<th></th>
<th>1 t-adf</th>
<th>lag</th>
<th>2 t-adf</th>
<th>lag</th>
<th>3 t-adf</th>
<th>lag</th>
<th>4 t-adf</th>
<th>lag</th>
<th>DW</th>
<th>DF</th>
</tr>
</thead>
<tbody>
<tr>
<td>rm1</td>
<td>-0.75092</td>
<td>5</td>
<td>-2.0689</td>
<td>5</td>
<td>-7.5819**</td>
<td>0</td>
<td>-7.6271**</td>
<td>0</td>
<td>0.1713</td>
<td>-1.398</td>
</tr>
<tr>
<td>rm2</td>
<td>-3.1877*</td>
<td>4</td>
<td>-3.1734</td>
<td>5</td>
<td>-7.9605**</td>
<td>0</td>
<td>-7.8999**</td>
<td>0</td>
<td>0.357</td>
<td>2.648</td>
</tr>
<tr>
<td>p</td>
<td>1.4510</td>
<td>5</td>
<td>-1.2831</td>
<td>5</td>
<td>-4.5777**</td>
<td>0</td>
<td>-5.0864**</td>
<td>0</td>
<td>0.0031</td>
<td>3.29</td>
</tr>
<tr>
<td>y</td>
<td>-3.2537*</td>
<td>0</td>
<td>-5.1155**</td>
<td>0</td>
<td>-9.0241**</td>
<td>0</td>
<td>-8.9949**</td>
<td>0</td>
<td>0.3153</td>
<td>-2.923</td>
</tr>
<tr>
<td>r3m</td>
<td>-3.1099</td>
<td>5</td>
<td>-2.2317</td>
<td>5</td>
<td>-4.3192**</td>
<td>0</td>
<td>-4.2598**</td>
<td>0</td>
<td>0.0633</td>
<td>-1.07</td>
</tr>
<tr>
<td>tb</td>
<td>-1.0454</td>
<td>5</td>
<td>-2.8107</td>
<td>5</td>
<td>-4.7654**</td>
<td>0</td>
<td>-4.7415**</td>
<td>0</td>
<td>0.0497</td>
<td>-0.495</td>
</tr>
<tr>
<td>br</td>
<td>-0.25828</td>
<td>5</td>
<td>-1.9353</td>
<td>5</td>
<td>-7.0056**</td>
<td>0</td>
<td>-6.9822**</td>
<td>0</td>
<td>0.0259</td>
<td>-0.132</td>
</tr>
<tr>
<td>LXND</td>
<td>0.47958</td>
<td>5</td>
<td>-1.6516</td>
<td>5</td>
<td>-8.0257**</td>
<td>0</td>
<td>-8.0213**</td>
<td>0</td>
<td>0.0085</td>
<td>0.850</td>
</tr>
</tbody>
</table>

1. Critical values for the augmented Dickey-Fuller (ADF) test: 5%=-2.904 1%=-3.528; Constant included (levels)
2. Critical values for the augmented Dickey-Fuller (ADF) test: 5%=-3.476 1%=-4.097; Constant and Trend included (levels)
3. Critical values for the augmented Dickey-Fuller (ADF) test: 5%=-2.905 1%=-3.53; Constant included (first differences)
4. Critical values for the augmented Dickey-Fuller (ADF) test: 5%=-3.477 1%=-4.099; Constant and Trend included (first differences).
5. The Dickey Fuller (DF) and DW tests are without lags, include a constant only and the critical values for the DF test are are:5%=-2.901,1%=-3.521.
6. The ADF test is as follows: Δy_t = α + (β-1) y_{t-1} + \sum_{i=1}^{r} γ_i Δy_{t-i} + ε_t
7. The variables are as defined above.

The results indicate that both the trace and maximal eigenvalue test reject zero in favour of at least one cointegrating vector at the 5 and 1 percent levels of significance respectively.

The adjusted trace statistic rejects while the adjusted maximal eigen value statistic accepts at the one percent level. An examination of the matrix of the standardized eigen vectors (β) yields the long run coefficients of the cointegration vectors normalized on rm1 as follows:

rm1 = + 0.60 y - 0.507 infl + 0.122 r3m

(5.12)

The signs of the coefficients on income and inflation are consistent with theoretical priors whereas the coefficient on interest rates turns out to be positive. In theory, the coefficient can be negative or positive depending on the interest rate used. The magnitude of the coefficient on income is also consistent with theoretical priors. The alpha coefficients measure the speed of short run response to disequilibria occurring in the equation system. For example -0.022116 is a measure of the speed at which rm1 reverts to the long-run equilibrium.
Table 5.2. Cointegration analysis for Narrow Money (rm1)

<table>
<thead>
<tr>
<th>Rank</th>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigenvalue</td>
<td>0.34516</td>
<td>0.22844</td>
<td>0.087935</td>
<td>0.006461</td>
<td></td>
</tr>
<tr>
<td>loglik for rank</td>
<td>310.588</td>
<td>326.253</td>
<td>335.848</td>
<td>339.254</td>
<td>339.278</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HO: RANK=P</th>
<th>P &gt;= 0</th>
<th>P &lt;= 1</th>
<th>P &lt;= 2</th>
<th>P &lt;= 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>λ trace</td>
<td>31.33*</td>
<td>19.19</td>
<td>6.811</td>
<td>0.04783</td>
</tr>
<tr>
<td>Adjusted (T-NM)</td>
<td>26.25</td>
<td>16.08</td>
<td>5.707</td>
<td>0.04007</td>
</tr>
<tr>
<td>95% Critical value</td>
<td>27.1</td>
<td>21.0</td>
<td>14.1</td>
<td>3.8</td>
</tr>
<tr>
<td>λ max</td>
<td>57.38**</td>
<td>26.05</td>
<td>6.859</td>
<td>0.4783</td>
</tr>
<tr>
<td>Adjusted (T-NM)</td>
<td>48.07*</td>
<td>21.83</td>
<td>5.747</td>
<td>0.4784</td>
</tr>
<tr>
<td>95% Critical value</td>
<td>47.2</td>
<td>29.7</td>
<td>15.4</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Standardized β' eigenvectors

<table>
<thead>
<tr>
<th>rml</th>
<th>y</th>
<th>infl</th>
<th>r3m</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0000</td>
<td>-0.58151</td>
<td>0.50725</td>
<td>-0.12230</td>
</tr>
</tbody>
</table>

Standardized α coefficients

| rml | -0.022116 | -0.00073397 | 0.0010173 | 9.0735e-005 |

Table 5.3 shows the cointegration analysis for rm2. Both the trace and maximal eigenvalue statistics reject zero in favour of at least one cointegrating vector at the 1 percent level of confidence. The suggested long run equation can be written as:

\[
rm2 = 1.718 y - 2.34 infl + 0.416 r3m
\]

(5.13)

Table 5.3. Cointegration analysis for Broad Money (rm2)

<table>
<thead>
<tr>
<th>Rank</th>
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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>eigenvalue</td>
<td>0.45799</td>
<td>0.20939</td>
<td>0.05754</td>
<td>0.007698</td>
<td></td>
</tr>
<tr>
<td>loglik for rank</td>
<td>311.197</td>
<td>333.553</td>
<td>342.128</td>
<td>344.291</td>
<td>344.573</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HO: RANK=P</th>
<th>P &gt;= 0</th>
<th>P &lt;= 1</th>
<th>P &lt;= 2</th>
<th>P &lt;= 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>λ trace</td>
<td>44.71**</td>
<td>17.15</td>
<td>4.326</td>
<td>0.5641</td>
</tr>
<tr>
<td>Adjusted (T-NM)</td>
<td>37.36**</td>
<td>14.33</td>
<td>3.615</td>
<td>0.4714</td>
</tr>
<tr>
<td>95% Critical value</td>
<td>27.1</td>
<td>21.0</td>
<td>14.1</td>
<td>3.8</td>
</tr>
<tr>
<td>λ max</td>
<td>66.75**</td>
<td>22.04</td>
<td>4.88</td>
<td>0.5641</td>
</tr>
<tr>
<td>Adjusted (T-NM)</td>
<td>55.78**</td>
<td>18.42</td>
<td>4.086</td>
<td>0.4714</td>
</tr>
<tr>
<td>95% Critical value</td>
<td>47.2</td>
<td>29.7</td>
<td>15.4</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Standardized β' eigenvectors

<table>
<thead>
<tr>
<th>rm2</th>
<th>y</th>
<th>infl</th>
<th>r3m</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0000</td>
<td>-1.7183</td>
<td>2.3360</td>
<td>-0.41607</td>
</tr>
</tbody>
</table>

Standardized α coefficients

| rm2 | -0.0069218 | -0.058311 | -0.00046564 | -0.00041175 |

The results, particularly on the signs and magnitudes of the coefficients on income and inflation are consistent with theoretical priors. However, the income elasticity of 1.7...
for broad money is on the higher side but consistent with findings in other developing countries.\textsuperscript{142} As expected, the long-run elasticities for the income variable are higher than the short-run ones. However, there are at least two competing theoretical views on the responsiveness of real cash balances to changes in income. The first view suggests that as real income increases, the public’s holdings of real cash balances increases but by less than the percentage increase in real income and on that account, income elasticities that are less than unity are not unexpected. The second view considers money as a luxury good and therefore one for which the desire as well as the capacity to hold increases more than proportionately with income and wealth.

The coefficient on inflation is consistent with theory and the importance of inflation in money demand functions in developing countries. The alpha coefficient for money shows a slow adjustment in this variable (about 1 percent per quarter). The negative sign suggests that a given amount of lagged excess money holdings induce smaller holdings of money in the current period. Figures 5.3 and 5.4 depict the diagnostic tests for the multivariate system used in the cointegration analysis while Figure 5.4a shows the cointegrating residuals, which are stationary.

\textbf{Error Correction Models}

Error correction models (ECMs), which represent the short run dynamics, are derived from the cointegrating vector representing the long-term demand for monetary aggregates indicated above. The results presented in table 5.4 reflect selected specifications for narrow and broad monetary aggregates. The general to specific approach to modelling framework of PcGIVE and PcFiml 9.1 is used to obtain these results.\textsuperscript{143}

\textsuperscript{142} See Tseng and Corker (1991)’s findings on broad money for Malaysia, Indonesia and Nepal and Darrat (1985) on Kenya. In a slightly different specification and for a shorter period, Jenkins reports an income elasticity for broad money of 0.8 in Zimbabwe.

\textsuperscript{143} The model selection criteria are Schwartz, Hannan-Quinn and final prediction error criteria (FPE), with the first being used in the general to specific modeling approach to select between congruent simplifications. Since the Schwartz criteria increases with increases in both the equation standard error and the number of regressors, a decrease in it is an indicator of model parsimony. Its computations as is follows: \text{SC}=\ln\sigma+k\ln{T/T} where \sigma is the equation standard error, k the number of parameters and T the sample size.
Figure 5.3. Graphical Analysis of Diagnostic Tests for rm1 (levels)

Figure 5.4. Graphical Analysis of Diagnostic Test for rm2 (levels)
The specifications were selected as best among several specifications of the demand for m1 and rm2 experimented with for the period 1981-98. All the specifications are of the semi-log linear form. In addition to income, prices and interest rate, some specifications, which included other possible determinants of the demand for money such as exchange rate depreciation, a dummy for liberalization and seasonal factors, were tried. The selected equations passed a battery of tests, which include residual autocorrelation (AR), conditional heteroscedasticity (ARCH), normality of residuals (Normality), unconditional heteroscedasticity (X²), functional form misspecification (RESET) as shown in table 5.4. Tables 5.8 and 5.9 present the results of the error correction specifications in more detail.

In both cases, the Wald test statistic was significant, suggesting that the coefficients are well determined and rejecting the null hypothesis that they are all zero excluding the constant term. The error correction model is the short run model, which has the I(0) representation of variables on both the left-hand side (LHS) and the right hand side (RHS). As discussed above, the RHS contains variables in their first differences and the error term in levels.

The main determinants for the demand for narrow money were found to be inflation and its lag, lagged demand for money, interest rate, the error correction term, and dummies for seasonality, drought shock in 1991 and the November 1997 currency crisis. The estimated coefficients of the change in inflation, interest rate, the lagged dependent variable and the error correction terms have the theoretically expected signs and are all statistically significant at the 5 percent level with the exception of lagged real money balances and the error correction term which are significant at the 1 percent level.

Figure 5.4a. Cointegrating Residuals for rm1 and rm2
The income variable had the expected sign but was statistically insignificant. The interest rate came with one positive coefficient and a negative but the net effect was negative as expected. Though the overall coefficient is small, the significance of the interest rate is surprising given that interest rates were controlled and more or less fixed. However, the rise in interest rates was dramatic after 1991. The dummy for the drought shock in 1991/92 had a negative coefficient suggesting a decline in the money demand as one might expect. The positive sign on the dummy for currency crisis of November 1997 partly reflects the massive injection of liquidity from the payment of gratuities to former combatants. The coefficient of the error correction term suggests a speed of adjustment to disequilibrium at the rate of 57 percent of the deviation from the equilibrium path per quarter. The equation for real money balances explains 65 percent of the variation in the demand for real narrow money balances.

In the equation for broad money, changes in the inflation rate with 4 lags, lagged real broad money, the error correction term and the dummies for seasonality, drought and currency crisis are the main explanatory variables and are statistically significant at the 1 percent level. Both the income variable and the opportunity cost variable were statistically insignificant but with the correct signs. The coefficient on lagged money suggests an adjustment rate of 36 percent of deviations from the equilibrium path per quarter. The error correction term adjusts at 30 percent of the deviations from the equilibrium path and is slower than that for narrow money. The difference in the pace of adjustment can be attributed to the domination of portfolio considerations in the demand for broad money. For example, agents may hold term deposits from which it is not possible to withdraw before a specified time frame.

Inflationary expectations and inertia as proxied by lags in the specifications clearly have a dominant role as reflected by the significance of the various lags of the changes in inflation and their being generally greater than unity. As indicated in chapter 1, inflation has been a serious economic problem in Zimbabwe. The annual rate reached 70 percent in October 1999. Other opportunity cost variables such as exchange rate changes, treasury bill rates, and foreign interest rates were statistically insignificant but with the expected signs. The lack of evidence for currency substitution reflects the tightness of the foreign exchange regime that operated in Zimbabwe.
While correctly signed, the coefficient of the income variable and a range of opportunity cost variables were statistically insignificant for both narrow and broad money. However, the interest rate variable is found to be statistically significant in the demand for narrow money. This reflects the portfolio shift associated with an increase in time deposits that is reported in Chapter 3. As indicated therein, the shift was ephemeral. The coefficient is so small that overall one can conclude that the interest rate variable was not an important determinant of the demand for narrow money. This would also be consistent with the fact that interest rates were not varied significantly for part of the period and the fact that inflationary expectations became dominant.

Some interest rate elasticity of the demand for money, albeit low, challenges the extreme monetarist and Keynesian positions of zero interest elasticity and infinite interest elasticity respectively. The policy significance of this is an advocacy of some middle ground with respect to monetary policy. In practice, any action geared to achieve the desired growth in money supply affects both reserve aggregates and interest rates. The latter influences the portfolio decisions of banks and the public and this could complicate the achievement of the desired path in the evolution of money stock. It is clear that the determination of money supply is subject to the Marshallian scissors, hence the stock of money can not be regarded as an autonomous variable subject to control by the monetary authorities.

To be sure, a lower numerical value of the interest rate elasticity of money supply makes it more difficult to effect monetary control through the control of reserve money and this is more so in the case high excess reserve holdings by deposit money banks. The interest elasticity of money demand determines the rate at which financial intermediation can help to mobilize domestic financial resources. Herein lies one of the bases for the focus on interest rates in the financial liberalization literature and the attendant policy recommendations. The improvement in financial intermediation is deemed to increase the interest rate sensitivity of money demand and in the process strengthen monetary policy both as a policy instrument and in mobilizing resources.

The equations for the demand for narrow and broad money balances explain 65 percent and 74 percent of the variations in the demand for these variables respectively. The goodness of fit and forecast properties of these equations are shown in Figures 5.5. and 5.6.
Table 5.4. Selected Equations for Drml and Drm2 1/

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>DRML</th>
<th>DRM2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.071495</td>
<td>(5.652)**</td>
</tr>
<tr>
<td>Drml_1</td>
<td>0.50167</td>
<td>(3.167)**</td>
</tr>
<tr>
<td>Drm2_4</td>
<td>0.35525</td>
<td>(3.756)**</td>
</tr>
<tr>
<td>Ddp</td>
<td>-0.557</td>
<td>(-2.244)*</td>
</tr>
<tr>
<td>Ddp_1</td>
<td>-0.714</td>
<td>(-2.504)*</td>
</tr>
<tr>
<td>Ddp_2</td>
<td>-1.7052</td>
<td>(5.646)**</td>
</tr>
<tr>
<td>Ddp_3</td>
<td>-1.0616</td>
<td>(3.707)**</td>
</tr>
<tr>
<td>Ddp_4</td>
<td>-0.75055</td>
<td>(3.096)**</td>
</tr>
<tr>
<td>Dr3m_1</td>
<td>-0.0120</td>
<td>(-2.665)*</td>
</tr>
<tr>
<td>Dr3m_2</td>
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</tr>
<tr>
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<td>ECM_1</td>
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<td>DMQ497</td>
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<td>0.756</td>
</tr>
<tr>
<td>F(8,62)</td>
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<td>16.623</td>
</tr>
<tr>
<td>R</td>
<td>0.06359</td>
<td>0.04572</td>
</tr>
<tr>
<td>DW</td>
<td>1.69</td>
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<td>HQ</td>
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</tr>
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</tr>
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<td>71</td>
</tr>
<tr>
<td>Period</td>
<td>1981q2-1998q4</td>
<td>1981q2-1998q4</td>
</tr>
<tr>
<td>Autocorrelation (AR 1- 5) F(5, 55)</td>
<td>1.0526 [0.3966]</td>
<td>F(5, 54) = 1.7117 [0.1476]</td>
</tr>
<tr>
<td>AutoRegressive Conditional Heteroscedasticity ARCH 4 F(4, 52)</td>
<td>0.68758 [0.6038]</td>
<td>F(4, 51) = 0.62653 [0.6457]</td>
</tr>
<tr>
<td>Normality Chi²(2)</td>
<td>0.02792 [0.9861]</td>
<td>0.25904 [0.8785]</td>
</tr>
<tr>
<td>Unconditional Heteroscedasticity XI² F(16, 43)</td>
<td>0.92624 [0.5472]</td>
<td>F(18, 40) = 0.70076 [0.7898]</td>
</tr>
<tr>
<td>Misspecification (RESET) F (1, 59)</td>
<td>0.54708 [0.4624]</td>
<td>F (1, 59) = 1.1925 [0.2793]</td>
</tr>
</tbody>
</table>

1/ One and two stars mean significance at the 5 and 1 percent levels respectively.
5.6. Parameter Constancy and Forecasting Performance

As indicated above, the stability of the demand for money function is an important issue for policy making. Recursive estimation procedures and Chow statistics were used to evaluate the stability and the forecasting performance of the estimated regressions. Figures
5.7 and 5.8 plot the recursive estimates of the coefficient estimates of the determinants of the changes in real narrow and broad money respectively with ±2 errors shown on either side. Apart from the changes in the inflation and interest rate variables, the rest of the explanatory variables for both aggregates seem to be fairly flat.

Figures 5.9 and 5.10. show further output from the recursive procedure and these include the residual sum of squares (RSS), standardized innovations, one-step-ahead residuals with their ±2 estimated standard errors, one-step Chow –tests under the null of constant parameters, the break-point (Ndn step Chow tests) and the forecast (Nup Chow tests). The residuals that fall outside the confidence bars in the plots for the one step residuals would be outliers or changes associated changes in coefficients. The confidence bands in for both variables seem to be constant apart from a slight widening in the case of narrow money between 1993 and 1994. There is no suggestion of an outlier or parameter changes in the case of narrow money while broad money points to some outlier or parameter change between 1993 and 1994. The one-step chow test accepts parameter constancy in the case of narrow money but does not accept it for 1994 in the case of broad money as shown in the figure. The break point Ndn step Chow test graphs depict the F-test scaled by its critical value in this case 1 percent which is the line at unity.

Figure 5.7. Recursive estimates for drml

---

144 See Hendry and Doornik (1996) for the routines for calculating these tests.
Figure 5.8. Recursive estimates for drm2

Parameter constancy is not rejected in both monetary aggregates as reflected by the fact that the plots lie below the scaled critical value of 1 percent.
In addition to the above graphics on parameter constancy, table 5.5. shows some arbitrarily chosen sub-periods and the respective forecast and parameter tests.

**Figure 5.10. Parameter Constancy for Drm2**

**Table 5.5. Tests for Parameter Constancy and Forecast Performance**

<table>
<thead>
<tr>
<th>OUT-OF-SAMPLE FORECAST</th>
<th>Drm1</th>
<th>Drm2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forecast Chi^2(8)</td>
<td>1997q1-1998q4 27.105 [0.0007] **</td>
<td>1997q1-1998q4 25.912 [0.0011] **</td>
</tr>
<tr>
<td>Chow F(8, 55)</td>
<td>1.4342 [0.2047]</td>
<td>1.0769 [0.3940]</td>
</tr>
<tr>
<td>Forecast Chi^2(12)</td>
<td>1996q1-1998q4 31.305 [0.0018] **</td>
<td>1996q1-1998q4 28.798 [0.0042] **</td>
</tr>
<tr>
<td>Chow F(12, 50)</td>
<td>1.4082 [0.1952]</td>
<td>1.0118 [0.4537]</td>
</tr>
<tr>
<td>Forecast Chi^2(16)</td>
<td>1995q1-1998q4 31.024 [0.01341] *</td>
<td>1995q1-1998q4 29.49 [0.0208] *</td>
</tr>
<tr>
<td>Chow F(16, 47)</td>
<td>1.0587 [0.4199]</td>
<td>0.87113 [0.6037]</td>
</tr>
</tbody>
</table>
Parameter constancy is accepted in the chosen periods for both monetary aggregates. However, specifications exhibit poor forecasting performances. The general conclusion that one may draw from these results is that for the greater part of the period in question, monetary aggregates show stability although the forecast performance is significantly weak over the selected periods. In pointing this out, it is worth noting that the Zimbabwean economy was subject to severe drought shocks and other macroeconomic imbalances, the reactions to which often took the form of policy reversals especially in the monetary area. There were also considerable changes in the monetary policy stance starting with a tight stance, which then got relaxed in the face of droughts and again got tight as macroeconomic imbalances worsened. The implication is that focusing on the demand for money function alone does not capture all developments in the financial sector.

5.7. Summary of Issues

An important objective of this chapter was to establish the determinants of the demand for money in Zimbabwe, with a view to making some inferences on how the process of financial liberalization might have caused some instability in monetary aggregates. The estimated coefficients of inflation, error correction terms, the dependent variable and some dummies had the theoretically expected signs and were statistically significant in both specifications for m1 and m2. The interest variable was significant in the specification for narrow money but not significant in the broader aggregate where changes in inflation had a dominant influence.

Although the coefficients of the income variable and interest rate had the expected signs, they were statistically insignificant suggesting the dominance of inflation and other factors. The long run income elasticity was found to be quite high especially for broad money but not out of accord with findings in other developing countries. Other opportunity cost variables such as exchange rate changes, treasury bill rates, and foreign interest rates also proved statistically insignificant but with the expected signs. Currency substitution was not picked up in the specifications despite the opening up and allowing of foreign currency account holdings by firms and individuals in 1994. A higher income elasticity of the demand for broad money suggests the importance of portfolio considerations for holding components of the broader monetary aggregate as opposed to the domination of transactions considerations in the narrow aggregate.
Both m2 and m1 specifications exhibited some stability as reflected by the Chow tests for parameter constancy in the selected sub-periods. However, the experience of the Reserve Bank in trying to monitor reserve money leads one to conclude that a strategy of monitoring several aggregates at the level of the balance sheet as well as at a broader level of aggregation is better. The problems experienced by the monetary authorities in controlling monetary aggregates that are discussed in Chapter 4, were not so much to do with the impact of the policy regime change as with the pursuit of conflicting objectives and delayed corrective measures.
### Table 5.6. Cointegration analysis for rm1

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>loglik for rank</th>
<th>rml Estimated loglik for rank</th>
<th>y</th>
<th>inflation Estimated loglik for rank</th>
<th>rm3 Estimated loglik for rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.345157</td>
<td>310.598</td>
<td>0</td>
<td>326.253</td>
<td>1</td>
<td>335.848</td>
</tr>
<tr>
<td>0.228439</td>
<td>339.254</td>
<td>0</td>
<td>339.254</td>
<td>3</td>
<td>339.278</td>
</tr>
<tr>
<td>0.0879351</td>
<td>339.254</td>
<td>0</td>
<td>339.254</td>
<td>3</td>
<td>339.278</td>
</tr>
<tr>
<td>0.000646079</td>
<td>339.278</td>
<td>0</td>
<td>339.278</td>
<td>4</td>
<td>339.278</td>
</tr>
</tbody>
</table>

Ho: rank = p - T\(\log (1 - \mu)\) using T-nm 95% using T-nm 95%

<table>
<thead>
<tr>
<th>p</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>loglik</td>
<td>310.598</td>
<td>326.253</td>
<td>335.848</td>
<td>339.254</td>
</tr>
<tr>
<td>using T-nm</td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
</tr>
<tr>
<td>p &lt;= 0</td>
<td>31.33*</td>
<td>26.25</td>
<td>27.1</td>
<td>57.38**</td>
</tr>
<tr>
<td>p &lt;= 1</td>
<td>19.19</td>
<td>16.08</td>
<td>21.0</td>
<td>26.05</td>
</tr>
<tr>
<td>p &lt;= 2</td>
<td>6.811</td>
<td>5.707</td>
<td>14.1</td>
<td>6.859</td>
</tr>
<tr>
<td>p &lt;= 3</td>
<td>0.04783</td>
<td>0.04007</td>
<td>3.8</td>
<td>0.04783</td>
</tr>
</tbody>
</table>

**standardized \(\beta\) eigenvectors**

<table>
<thead>
<tr>
<th>rml</th>
<th>y</th>
<th>inflation</th>
<th>rm3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0000</td>
<td>-0.58151</td>
<td>0.50725</td>
<td>-0.12230</td>
</tr>
<tr>
<td>0.57926</td>
<td>1.0000</td>
<td>-0.060357</td>
<td>-0.014867</td>
</tr>
<tr>
<td>-17.002</td>
<td>46.178</td>
<td>1.0000</td>
<td>0.062792</td>
</tr>
<tr>
<td>55.401</td>
<td>-66.106</td>
<td>2.2112</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

**standardized \(\alpha\) coefficients**

<table>
<thead>
<tr>
<th>rml</th>
<th>y</th>
<th>inflation</th>
<th>rm3</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.022116</td>
<td>-0.0073397</td>
<td>0.0010173</td>
<td>9.0735e-005</td>
</tr>
<tr>
<td>-0.0057039</td>
<td>-0.054074</td>
<td>0.00019123</td>
<td>5.6397e-005</td>
</tr>
<tr>
<td>-0.68945</td>
<td>5.0024</td>
<td>-0.035974</td>
<td>-0.0016956</td>
</tr>
<tr>
<td>1.3026</td>
<td>2.2761</td>
<td>0.0086215</td>
<td>0.0022324</td>
</tr>
</tbody>
</table>

**long-run matrix Po = \(\alpha\)\(\beta\), rank 4**

<table>
<thead>
<tr>
<th>rml</th>
<th>y</th>
<th>inflation</th>
<th>rm3</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0.034811</td>
<td>0.053107</td>
<td>-0.0099561</td>
<td>0.0028702</td>
</tr>
<tr>
<td>y</td>
<td>-0.0013924</td>
<td>-0.14279</td>
<td>-0.0014172</td>
</tr>
<tr>
<td>inflation</td>
<td>2.7260</td>
<td>3.8542</td>
<td>-0.69138</td>
</tr>
<tr>
<td>rm3</td>
<td>2.4868</td>
<td>1.9020</td>
<td>0.53247</td>
</tr>
</tbody>
</table>

**Number of lags used in the analysis:** 3

**Variables entered unrestricted:**

- Constant
- Seasonal
- Seasonal_i
- Seasonal_2

**rm1 Portmanteau 8 lags = 1.9479**

**y Portmanteau 8 lags = 5.0157**

**inflation Portmanteau 8 lags = 0.89912**

**rm3 Portmanteau 8 lags = 4.5115**

**rm1 AR 1-5 F(5, 53) = 0.16743 [0.9735]***

**y AR 1-5 F(5, 53) = 1.3432 [0.2607]***

**inflation AR 1-5 F(5, 53) = 0.7529 [0.5877]***

**r3m AR 1-5 F(5, 53) = 0.63071 [0.6771]***

**rm1 Normality Chi^2(2) = 1.1621 [0.5593]***

**y Normality Chi^2(2) = 1.7201 [0.4231]***

**inflation Normality Chi^2(2) = 4.6126 [0.0996]***

**r3m Normality Chi^2(2) = 6.9492 [0.0310]***

**rm1 ARCH 4 F(4, 50) = 0.51853 [0.7224]***

**y ARCH 4 F(4, 50) = 4.0947 [0.0060]***

**inflation ARCH 4 F(4, 50) = 0.29145 [0.8822]***

**r3m ARCH 4 F(4, 50) = 0.2607 [0.9017]***

**rm1 \(\xi^2\) F(24, 33) = 1.1287 [0.3680]***

**y \(\xi^2\) F(24, 33) = 0.67575 [0.8390]***

**inflation \(\xi^2\) F(24, 33) = 0.51311 [0.9534]***

**r3m \(\xi^2\) F(24, 33) = 0.76341 [0.7515]***

**Vector Portmanteau 8 lags = 90.322**

**Vector AR 1-5 F(80,140) = 0.90689 [0.6814]***

**Vector normality Chi^2(8) = 18.526 [0.0176]***

**Vector \(\xi^2\) F(240,246) = 0.62396 [0.9999]***
Table 5.7. Cointegration analysis for rm2 1980 (4) to 1998 (4)

<table>
<thead>
<tr>
<th>eigenvalue</th>
<th>loglik for rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>311.197</td>
<td>0</td>
</tr>
<tr>
<td>0.457994</td>
<td>333.553</td>
</tr>
<tr>
<td>0.209386</td>
<td>342.128</td>
</tr>
<tr>
<td>0.0575398</td>
<td>344.291</td>
</tr>
<tr>
<td>0.00769818</td>
<td>344.573</td>
</tr>
</tbody>
</table>

Ho: rank=p -Tlog(1-μ) using T-nm 95% -T\Sum log() using T-nm 95%

| p = = 0   | 44.71** | 37.36** | 27.1 | 66.75** | 55.78** | 47.2 |
| p <= 1    | 17.15   | 14.33   | 21.0 | 22.04   | 18.42   | 29.7 |
| p <= 2    | 4.326   | 3.615   | 14.1 | 4.89    | 4.086   | 15.4 |
| p <= 3    | 0.5641  | 0.4714  | 3.8  | 0.5641  | 0.4714  | 3.8  |

standardized \beta' eigenvectors

<table>
<thead>
<tr>
<th></th>
<th>rm2</th>
<th>y</th>
<th>infl</th>
<th>r3m</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0000</td>
<td>-1.7183</td>
<td>2.3360</td>
<td>-0.41607</td>
<td></td>
</tr>
<tr>
<td>1.2101</td>
<td>1.0000</td>
<td>-0.014337</td>
<td>-0.021329</td>
<td></td>
</tr>
<tr>
<td>46.914</td>
<td>-84.881</td>
<td>1.0000</td>
<td>0.21909</td>
<td></td>
</tr>
<tr>
<td>51.153</td>
<td>-22.116</td>
<td>1.6176</td>
<td>1.0000</td>
<td></td>
</tr>
</tbody>
</table>

standardized \alpha coefficients

<table>
<thead>
<tr>
<th></th>
<th>rm2</th>
<th>y</th>
<th>infl</th>
<th>r3m</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0069218</td>
<td>-0.058311</td>
<td>-0.00046564</td>
<td>-0.00041175</td>
<td></td>
</tr>
<tr>
<td>0.0032186</td>
<td>-0.035165</td>
<td>0.0011355</td>
<td>-0.00027600</td>
<td></td>
</tr>
<tr>
<td>0.35799</td>
<td>3.8001</td>
<td>0.0085162</td>
<td>0.0083599</td>
<td></td>
</tr>
<tr>
<td>0.27577</td>
<td>2.3642</td>
<td>-0.0077573</td>
<td>-0.0052089</td>
<td></td>
</tr>
</tbody>
</table>

long-run matrix P = \alpha*\beta', rank 4

<table>
<thead>
<tr>
<th></th>
<th>rm2</th>
<th>y</th>
<th>infl</th>
<th>r3m</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.12039</td>
<td>0.002213</td>
<td>-0.016465</td>
<td>0.0036099</td>
<td></td>
</tr>
<tr>
<td>-0.0066189</td>
<td>-0.11992</td>
<td>-0.0063256</td>
<td>0.00206206</td>
<td></td>
</tr>
<tr>
<td>5.0678</td>
<td>3.5074</td>
<td>-0.86873</td>
<td>0.078126</td>
<td></td>
</tr>
<tr>
<td>2.5064</td>
<td>2.6640</td>
<td>0.59413</td>
<td>-0.17207</td>
<td></td>
</tr>
</tbody>
</table>

Number of lags used in the analysis: 3
Variables entered unrestricted:
Constant Seasonal Seasonal_1 Seasonal_2

rm2 : Portmanteau 8 lags= 8.0187
y : Portmanteau 8 lags= 9.4105
infl : Portmanteau 8 lags= 0.97423
r3m : Portmanteau 8 lags= 5.9692
rm2 : AR 1-5 F(5, 52) = 1.0211 [0.4149]
y : AR 1-5 F(5, 52) = 1.3384 [0.2629]
infl : AR 1-5 F(5, 52) = 1.0312 [0.4092]
r3m : AR 1-5 F(5, 52) = 0.90029 [0.4880]
rm2 : Normality Chi² (2) = 2.9262 [0.2315]
y : Normality Chi² (2) = 2.4051 [0.3004]
infl : Normality Chi² (2) = 1.4624 [0.4813]
r3m : Normality Chi² (2) = 6.4328 [0.0401] *
rm2 : ARCH 4 F(4, 49) = 1.3487 [0.2654]
y : ARCH 4 F(4, 49) = 2.9385 [0.0296] *
infl : ARCH 4 F(4, 49) = 0.35137 [0.8418]
r3m : ARCH 4 F(4, 49) = 0.17179 [0.9518]
rm2 : Xi² F(24, 32) = 0.73425 [0.7811]
y : Xi² F(24, 32) = 0.55828 [0.9284]
infl : Xi² F(24, 32) = 0.79833 [0.7131]
r3m : Xi² F(24, 32) = 0.89808 [0.6025]
### Table 5.8. Modelling Drml by OLS (using COINTM1&M2.in7)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std.Error</th>
<th>t-value</th>
<th>t-prob</th>
<th>HCSE</th>
<th>Part R^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.071495</td>
<td>0.012649</td>
<td>5.652</td>
<td>0.0000</td>
<td>0.012357</td>
<td>0.3474</td>
</tr>
<tr>
<td>Drml_1</td>
<td>0.50167</td>
<td>0.15840</td>
<td>3.167</td>
<td>0.0024</td>
<td>0.14864</td>
<td>0.1432</td>
</tr>
<tr>
<td>DDrp</td>
<td>-0.55695</td>
<td>0.24824</td>
<td>-2.244</td>
<td>0.0286</td>
<td>0.32593</td>
<td>0.0774</td>
</tr>
<tr>
<td>DDrp_1</td>
<td>-0.71410</td>
<td>0.28514</td>
<td>-2.504</td>
<td>0.0150</td>
<td>0.34590</td>
<td>0.0946</td>
</tr>
<tr>
<td>Dr3m_1</td>
<td>-0.012036</td>
<td>0.0045165</td>
<td>-2.665</td>
<td>0.0099</td>
<td>0.0053129</td>
<td>0.1058</td>
</tr>
<tr>
<td>Dr3m_2</td>
<td>0.0098496</td>
<td>0.0045603</td>
<td>2.160</td>
<td>0.0348</td>
<td>0.0050288</td>
<td>0.0721</td>
</tr>
<tr>
<td>Vrml_1</td>
<td>-0.56969</td>
<td>0.20529</td>
<td>-2.775</td>
<td>0.0073</td>
<td>0.21655</td>
<td>0.1138</td>
</tr>
<tr>
<td>DMQ497</td>
<td>0.17165</td>
<td>0.070033</td>
<td>2.451</td>
<td>0.0172</td>
<td>0.038796</td>
<td>0.0910</td>
</tr>
<tr>
<td>Seasonal_1</td>
<td>-0.092076</td>
<td>0.028895</td>
<td>-3.187</td>
<td>0.0023</td>
<td>0.027842</td>
<td>0.1447</td>
</tr>
<tr>
<td>Seasonal_2</td>
<td>-0.17220</td>
<td>0.022433</td>
<td>-7.676</td>
<td>0.0000</td>
<td>0.021170</td>
<td>0.4955</td>
</tr>
<tr>
<td>DMQ491</td>
<td>-0.16411</td>
<td>0.069741</td>
<td>-2.353</td>
<td>0.0219</td>
<td>0.030256</td>
<td>0.0845</td>
</tr>
</tbody>
</table>

R^2 = 0.653197 \( F(10,60) = 11.301 \) [0.0000] \( \sigma = 0.0635858 \) \( DW = 1.69 \)

RSS = 0.242589024 for 11 variables and 71 observations

WALD test Chi^2 (7) = 15.819 [0.0268] *

Information Criteria:
- SC = -5.01865
- HQ = -5.2298
- FPE = 0.0066955
- AIC = -5.36921

AR 1-5 F(5, 55) = 1.0526 \( [0.3966] \)

ARCH 4 F(4, 52) = 0.68758 \( [0.6038] \)

Normality Chi^2 (2) = 0.027915 \( [0.9861] \)

Xi^2 F(16, 43) = 0.92624 \( [0.5472] \)

RESET F(1, 59) = 0.54708 \( [0.4624] \)

### Table 5.9. Modelling Drm2 (Change in real broad money) by OLS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std.Error</th>
<th>t-value</th>
<th>t-prob</th>
<th>HCSE</th>
<th>Part R^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.0072423</td>
<td>0.0079084</td>
<td>0.916</td>
<td>0.3635</td>
<td>0.0081955</td>
<td>0.0140</td>
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<tr>
<td>Drm2_4</td>
<td>0.35525</td>
<td>0.094592</td>
<td>3.756</td>
<td>0.0004</td>
<td>0.079200</td>
<td>0.1929</td>
</tr>
<tr>
<td>DDrp</td>
<td>-1.3738</td>
<td>0.23010</td>
<td>-5.971</td>
<td>0.0000</td>
<td>0.25744</td>
<td>0.3766</td>
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<tr>
<td>DDrp_1</td>
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<td>0.29855</td>
<td>-5.973</td>
<td>0.0000</td>
<td>0.303333</td>
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<tr>
<td>DDrp_2</td>
<td>-1.7052</td>
<td>0.30201</td>
<td>-5.646</td>
<td>0.0000</td>
<td>0.28976</td>
<td>0.3508</td>
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<tr>
<td>DDrp_3</td>
<td>-1.0616</td>
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<td>-3.707</td>
<td>0.0005</td>
<td>0.26311</td>
<td>0.1889</td>
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<tr>
<td>DDrp_4</td>
<td>-0.705055</td>
<td>0.24245</td>
<td>-3.096</td>
<td>0.0030</td>
<td>0.23892</td>
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<tr>
<td>DMQ497</td>
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<td>0.016250</td>
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<td>DMQ491</td>
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<td>-4.431</td>
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<td>Vrm2_1</td>
<td>-0.29768</td>
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<td>-2.776</td>
<td>0.0074</td>
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<td>Seasonal_1</td>
<td>0.032577</td>
<td>0.015245</td>
<td>2.137</td>
<td>0.0368</td>
<td>0.015005</td>
<td>0.0718</td>
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<tr>
<td>Seasonal_2</td>
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<td>-2.677</td>
<td>0.0096</td>
<td>0.014425</td>
<td>0.1083</td>
</tr>
</tbody>
</table>

R^2 = 0.756053 \( F(11,59) = 16.623 \) [0.0000] \( \sigma = 0.0457243 \) \( DW = 1.78 \)

RSS = 0.1233522269 for 12 variables and 71 observations

WALD test Chi^2 (6) = 42.617 [0.0000] **

Information Criteria:
- SC = -5.63494
- HQ = -5.86528
- FPE = 0.00244408
- AIC = -6.01736

AR 1-5 F(5, 54) = 1.7117 \( [0.1476] \)

ARCH 4 F(4, 52) = 0.62653 \( [0.6457] \)

Normality Chi^2 (2) = 0.25904 \( [0.8785] \)

Xi^2 F(18, 40) = 0.70076 \( [0.7898] \)

RESET F(1, 58) = 2.4447 \( [0.1234] \)
CHAPTER 6. EFFECTS OF FINANCIAL LIBERALIZATION ON SAVINGS, INVESTMENT AND GROWTH

6.1. Introduction

The policy conclusion of the financial repression hypothesis of MS is that financial liberalization promotes saving, investment and allocative efficiency of the financial markets by ensuring the attainment of positive real interest rates. As pointed out in Chapter 2, more savings are believed to result in increased investment, this in turn begets higher economic growth. This is not necessarily the case especially when there is a liquidity overhang in the banking sector and there are other constraints on investment behaviour. Negative real interest rates associated with financial repression foster excess demand for credit and rationing emerges as an allocative mechanism for the limited funds available.

The challenge to the tenets of the financial repression hypothesis has been indicated in Chapter 2. Therein, the inconclusive verdicts of the empirical tests of this hypothesis have been pointed out. In general, some of the benefits of financial liberalization accrue directly to the financial sector while others are economy wide and thus not easily separable from the effects of other policy changes. Some of them take a short time to manifest themselves while others take a long time. This chapter assesses the extent to which the regime changes in interest rates have led to increased savings and investment and through them, higher economic growth as predicted by the financial repression thesis in Zimbabwe.

Zimbabwe's experience with financial liberalization is recent and therefore not amenable to the kind of ex-post assessment suggested in Khan and Knight (1981). The approach adopted here entails estimating the impact of interest rate changes on savings, investment and growth. Section 6.2 examines some analytical ratios and other related financial sector phenomena to indicate the impact of liberalization. Included among such ratios are the level and structure of interest rates, the growth of the financial sector, availability of long-term credit to the private sector, and integration of domestic interest rates with foreign interest rates. Sections 6.3 and 6.4 present empirical tests of the validity of the financial repression hypothesis on the behaviour of savings and investment in Zimbabwe. Given data limitations, these tests are conducted within the framework of

145 Indicators of competitiveness and bank profitability, quality of loan portfolios and the corporate sector sector's financial sector would be extremely helpful but data deficiencies preclude detailed treatment of these issues here.
simple econometric models of savings and investment, which focus narrowly on the variables of immediate interest. Section 6.5 concludes.

6.2. Financial Intermediation, Savings and Investment

The processes of saving and investment are separate but interdependent and are linked in varying degrees through financial intermediation, government appropriation or self-finance. Which of these links is most important in a given economy depends on the respective roles of the public and private sectors. Table 6.1 shows averages of some financial indicators, which cover the pre and post liberalization periods in Zimbabwe.

Financial deepening is one of the expected outcomes of financial liberalization. As measured by the ratio of broad money to GDP and availability of credit to the private sector, the Zimbabwe data does not reveal a dramatic improvement in financial depth. Instead, the high level of financial deepening attained in the early 1980s was followed by a steady decline until 1991. The average level of financial depth was 24 percent during the post liberalization compared to 27 percent during the proceeding 10-year period ended in 1990. A possible explanation of this could be the restoration of confidence at the time when the country gained political independence followed by a period of economic problems and financial disintermediation due to financial repression. In that sense, the modest recovery in financial depth, which started in 1992, can be attributed to the liberalization measures.

Though somewhat lower than during the preceding period, the trend in financial deepening as measured by the ratio of broad money relative to GDP experienced a reversal in the downward trend that had emerged. Further support for the perception of improvements in financial intermediation can be deduced from the substantial increase in the level of bank credit available to the private sector. This development was mirrored by the shift in the relative shares of credit to the private and public sectors in favour of the former. However, some of the dramatic increase in credit was associated with the increased incidence of distress borrowing in an environment of high nominal interest rates.

Although most interest rates became positive in real terms after the removal of ceilings, they did not remain so because of the high levels of inflation. Table 4.1 in Chapter 4 shows the range of monetary reforms and policy measures that were introduced as part of financial liberalization. Most of the changes were related to the interest rate regime change and were concentrated in the early stages of the process. As can be seen from the table, ceilings on interest rates were removed and changes were introduced in the instruments for
liquidity management. These are discussed in Chapter 4 in the context of the post liberalization monetary framework.

Figure 6.1 shows upward trends in the investment and savings ratios. However, it is not clear that these developments can be attributed to financial sector liberalization. The empirical results in this chapter and Chapter 7 cast doubt on the interest elasticity of savings and the levels of liquidity in the banking system suggest that savings were not a constraint on investment. The banking system held large excess reserves and liquidity was not a constraint on their ability to extend credit. Banks sat on these reserves due to other constraints on investment. As described in chapter one, foreign exchange availability was a major constraint on investment. The allocation mechanism for the scarce foreign exchange was de facto a credit rationing device, as credit was always available to those allocated with foreign exchange. Given the structure of domestic manufacturing industry that emerged under the import substitution strategy of the UDI years, investment was highly dependent on imported materials. While foreign exchange constraints held back investment prior to 1991, the situation after liberalization became one of credit constraints ushered in by the high interest rate shocks as well as foreign exchange shortages there after.

Abstracting from problems of measurement, no clear conclusion can be drawn from the path of the incremental capital output ratio, which declined during the early stages of liberalization but fluctuated thereafter. The efficiency in the investment process associated with a decline in the incremental capital output ratio and high growth rates could be attributed the combination of financial sector related factors and the economic reforms, which restored investors’ confidence during the early stages of reforms.

On average, both domestic and international interest rate spreads widened. The initial narrowing of domestic interest rate spreads could be read as an indicator of some limited improvement in efficiency. Part explanation could be derived from the market structure of the banking system, which was oligopolistic. Some of the increase in the size of the spreads is associated with higher loan rates that became necessary in order to offset the costs of bad loans and subsequent increases in unremunerated reserve requirements. Although the entry of new financial institutions could be a basis for concluding that efficiency and competition have increased, there is no conclusive quantitative evidence of these having occurred. The size of the international spread could be an indicator of expectations that the currency will depreciate as well as the extent to which the domestic interest rates were out of line. The large interest rate differential between domestic rates
and Libor encouraged significant capital inflows and this led to some problems of monetary management. These issues are discussed in Chapters 3 and 4.

The empirical results on savings, investment and growth rates discussed below are summarized in table 6.2.

Table 6.1. Zimbabwe: Averages of Selected Financial and economic Indicators

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic savings ratio</td>
<td>16.2</td>
<td>14.6</td>
<td>15.9</td>
</tr>
<tr>
<td>Private savings ratio</td>
<td>22.1</td>
<td>16.4</td>
<td>17.4</td>
</tr>
<tr>
<td>Total investment ratio</td>
<td>20.2</td>
<td>19.7</td>
<td>23.1</td>
</tr>
<tr>
<td>Foreign saving ratio</td>
<td>4.0</td>
<td>5.1</td>
<td>7.2</td>
</tr>
<tr>
<td>Private investment ratio</td>
<td>14.9</td>
<td>14.7</td>
<td>20.0</td>
</tr>
<tr>
<td>Government savings ratio</td>
<td>-5.9</td>
<td>-2.5</td>
<td>-3.2</td>
</tr>
<tr>
<td>Real deposit rate</td>
<td>-6.5</td>
<td>-3.8</td>
<td>-2.0</td>
</tr>
<tr>
<td>Credit to the private sector/GDP</td>
<td>17.1</td>
<td>12.8</td>
<td>21.8</td>
</tr>
<tr>
<td>Credit to the public sector/GDP</td>
<td>11.0</td>
<td>15.1</td>
<td>11.4</td>
</tr>
<tr>
<td>Currency/GDP</td>
<td>3.9</td>
<td>3.8</td>
<td>3.0</td>
</tr>
<tr>
<td>M2/GDP</td>
<td>28.5</td>
<td>26.9</td>
<td>23.8</td>
</tr>
<tr>
<td>GDP growth</td>
<td>0.8</td>
<td>4.4</td>
<td>2.0</td>
</tr>
<tr>
<td>Incremental capital output ratio</td>
<td>0.3</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Spread 1/</td>
<td>3.9</td>
<td>0.9</td>
<td>7.0</td>
</tr>
<tr>
<td>International spread 1/</td>
<td>-1.5</td>
<td>3.0</td>
<td>26.2</td>
</tr>
</tbody>
</table>

Source: Calculations from IFS data and official publications.
1/ Commercial bank lending rate minus 3 months fixed deposit rates and LIBOR for domestic and international spreads respectively.

6.3. Savings Rates

Savings constitutes a time preference choice by economic agents in favour of future as opposed to present consumption. In the absence of constraints to intertemporal shifts in consumption, the optimal level of consumption would be determined by the equalization of the rates of change of the marginal utility of consumption and the difference between the rates of interest and time preference of economic agents. In this context, saving would facilitate the determination of optimal consumption. Saving can be looked at from the point of view of national income accounts, where is it derived residually or from the perspective of financial instruments, which can be classified as such. The assumption would be that such financial saving is encouraged by the rate of return (interest) on financial assets. Evidence from industrial economies shows little relationship between interest rates and
saving suggesting that the income and substitution effects of interest rate changes cancel each other out.\textsuperscript{146}

Saving theories derive from consumption theory and they can broadly be divided into two groups namely the absolute income hypothesis associated with Keynes and inter-temporal approaches associated with the works of Friedman, Ando, Brumberg and Modigliani. The main differences in these approaches lie in the period over which the analysis of consumption behaviour is based.

In the Keynesian approach, the notion of consumers intertemporally smoothing consumption was challenged but only to be revived by the discovery of long-run stability in the saving rate. Dissatisfaction with current income as a predictor of current consumption led to the shift in focus toward the permanent income hypotheses (PIH) and life-cycle income hypotheses (LCH) both of which are premised on the notion of inter-temporal utility maximizing behaviour on the part of households.

These intertemporal approaches to saving dominate the current literature on savings.\textsuperscript{147}

The PIH explains fluctuations in the savings ratio by the slow adjustment of consumption to variations in permanent income such that a household’s consumption at time \(t\) depends on permanent income \(Y^p\). This can be represented as:

\[
C_t = Y^p
\]  
\hspace{1cm} (6.1)

where \(C_t\) is consumption in time \(t\) and \(Y^p\) is permanent income. This hypothesis is attributed to Friedman (1957). Permanent income is defined as the income from which a household could consume while maintaining their wealth intact. This implies that: \(Y^p = rW\) where \(r\) is the long run rate of interest and \(W\) represents the stock of human and non-human wealth. Observed income thus comprises permanent and transitory income \((Y^t)\) as follows:

\[
Y = Y^p + Y^t
\]  
\hspace{1cm} (6.2)

\textsuperscript{146} As an example, see the reference to Japan’s postal savings bank’s ability to mobilize large savings despite paying low interest rates that is cited in chapter 2.

\textsuperscript{147} See IMF staff studies for the World Economic Outlook, September 1995 for a detailed discussion of these two approaches.
The propensity to consume out of permanent income ($C/Y^p$) depends on the long run rate of interest and other factors and is therefore independent of current income and thus expected to be stable over time. The different savings rates among income groups are explained by differences in the levels of transitory income (assuming all such income is saved). The main challenge for making this idea operational in an empirical sense derives from establishing permanent income ($Y^p$). One approach has been to take a weighted average of past values of observed income and deriving the equation:

$$C_t = a_C t + b Y^t$$  \hspace{1cm} (6.3)$$

where $C_{t-1}$ represents past income. Another way is to run a time series regression of the propensity to save where both the permanent and transitory components of income are explanatory variables as follows:

$$S = a_0 + a_1 Y^p + a_2 Y^t$$  \hspace{1cm} (6.4)$$

As suggested above, it is expected that the propensity to save out of transitory income is larger than out of permanent income. One of the implications of this hypothesis is that
countries facing high volatility in export earnings tend to have more savings available to finance investment.\footnote{See Maizels (1968).}

The LCH explains fluctuations in consumption in terms of a desire to smooth consumption over a lifetime. Thus patterns of consumption are maximized subject to a lifetime budget constraint. Savings behaviour is dependent on age under the general assumption that saving is higher during the income-earning period and very low during retirement. This hypothesis is associated with the works of Ando and Modigliani (1963) and Barro (1974). The approaches by these authors view the consumption optimization problem within a two period life span. Barro's model employs the overlapping generations model by incorporating intergenerational bequests.

The operational assumptions for the LCH are that most individuals engage in wage labour, individuals' earnings typically increase with their accumulated experience and increase in productivity, income falls off on retirement and that the saving behaviour of individual households can be aggregated within and over age groups. Ando and Modigliani (1963) derive the following consumption function:

\[ C_t = a YL_t + b YL^e_t + c A_{t-1} \]  

(6.5)

where \( YL_t \) is current non-property income (labour), \( YL^e_t \) is expected annual labour income and \( A_{t-1} \) is accumulated net worth. Empirical specifications of this postulated relationship has to deal with the fact that observations on \( YL^e_t \) and \( c A_{t-1} \) are generally not available. Various efforts made to address these empirical problems have not escaped problems of multicollinearity and definitions among others.\footnote{See Jansen (1990, 89-94) for details.}

As Jansen (1990) observes, the application of various theories of saving in developing country contexts encounters some problems due to the fact that these economies are undergoing rapid structural changes, most households are primarily production units as well as consumption units, and that the condition of perfect markets which underlie most of the theories may not hold. Some researchers especially on new growth theories have expressed skepticism about the importance of investment-savings
ratios as determinants of economic growth and have preferred instead to focus on productivity and investment in human capital.

Although each of the theories suggests a specific formulation of the savings function, some explanatory variables are common to all.\textsuperscript{150} A lot is known about the determinants of savings at the theoretical level but much less is known empirically about the interactions of the identified determinants of savings.\textsuperscript{151} Most empirical work has tended to adopt an eclectic approach whereby the savings functions tested combine variables suggested by different theories as well as other variables that could be expected to influence savings. Researchers have sought to settle a number of questions.\textsuperscript{152}

The presumption that savings tend to respond favourably to positive real interest rates has been challenged by empirical evidence. Some empirical work has produced ambivalent results on the interest rate sensitivity of savings mainly because of the income and substitution effects working in opposite directions. Mikesell and Zinser (1973) concluded that the level of interest rates affects the portfolio composition rather than the level of savings. Giovannini (1983) also drew similar conclusions.

Although the empirical question about the direction of causality among growth, savings and investment is unsettled, evidence from the economic growth experiences of some countries and their high savings rates points to a strong positive correlation between savings rates, investment rates and economic growth. Casual empiricism shows that one of the characteristics of the Asian countries, which enjoyed phenomenal growth rates before the recent financial sector crises, was a high savings rate. Thus, the interaction between savings and investment is quintessential for increasing the rate of economic growth.

Influences on savings rates could be broadly grouped into policy and non-policy factors. The policy related factors include, government saving, real interest rates on

\textsuperscript{150} See Jansen (1990) for a detailed discussion on the limitations of the various theories and the range of explanatory variables identified.

\textsuperscript{151} See Kotlikoff (1989) for a review of the various determinants of saving and the theoretical basis in the works of Solow (1956), Modigliani and Brumberg (1954), the growth theories, new models of consumption and new test of intertemporal optimization.

\textsuperscript{152} See Masson et al (1995) for a review of some of the outstanding issues and an empirical study in the tradition of the eclectic approach referred to above. Hadjimichael et al (1995) also carried out such a study on Sub-Saharan Africa.
deposits, exports, financial development, inflation, external debt and public investment. The non-policy or exogenous factors include income growth, per capita income, foreign savings, population growth, dependency ratio and changes in terms of trade. Equation 6.6 below shows the general format that the eclectic empirical specification of the savings rate might take.

\[
sy = \alpha_0 + \alpha_1ygr + \alpha_2bd + \alpha_3fsy + \alpha_4\pi + \alpha_5m2 + \alpha_6dpnd + \alpha_7ctt + \alpha_8ypcus + \alpha_9rdr + \alpha_{10}dbt + \alpha_{11}dbs + \alpha_{12}crer
\]

(6.6)

The variables are domestic savings rate (sy), growth in GDP (ygr), budget deficit relative to GDP (bd), external current account (foreign savings rate fsy), inflation (\pi), broad money (m2) as a ratio of GDP, dependency ratio (dpnd), change in terms of trade (ctt), per capita income in US dollars (ypcus), real deposit rate (rdr), debt ratio (dbt), debt service ratio (dbs), change in the real effective exchange rate (crer), government saving as a ratio of GDP (gsy), government investment as a share of GDP (Ig) and private saving rate relative to GDP (psy). Along similar lines, the specification for private savings rate would be as follows:

\[
psy = \alpha_0 + \alpha_1ygr + \alpha_2bd + \alpha_3fsy + \alpha_4\pi + \alpha_5m2 + \alpha_6dpnd + \alpha_7ctt + \alpha_8ypcus + \alpha_9rdr + \alpha_{10}dbt + \alpha_{11}dbs + \alpha_{12}crer + \alpha_{13}gsy + \alpha_{14}Ig
\]

(6.7)

Since the focus in this chapter is to establish the impact of financial liberalization on the saving rates, the specifications used are limited to that objective. Given the limited degrees of freedom on 23 annual observations the selection is limited to key variables particularly highlighting the relationship to be examined, in this case the impact of financial liberalization on the savings rate. The general to specific modelling procedure of PC Give was used to arrive at the choice of variables but making sure that the income and interest rate variables are included. Tests of the impact of financial liberalization on savings rates were conducted by regressing the level of domestic savings rate on real growth in GDP, lagged savings rate, external current account as a ratio of GDP (foreign savings rate) and real deposit interest rate. The justification for including income growth is that it

\[\text{(continued)}\]

\[\text{153 The variables are described in the data appendix.}\]

\[\text{154 The use of the external current account/GDP ratio of GDP as an indicator of foreign savings from a resource balance perspective is consistent with other studies on the determinants of savings rates. This concept includes foreign transfers (grants). Foreign (continued)}\]
reflects deviations from permanent income path, which in turn should lead to changes in the savings rates. The inclusion of the lagged dependent variable reflects the fact that the adjustment process is not instantaneous. The foreign savings rate variable establishes whether there is some crowding out of domestic savings and the real interest variable tests whether saving is interest elastic. A number of runs were made and the final specifications selected where the ones that passed various diagnostic tests to ensure that there were no problems of residual autocorrelation (AR), conditional heteroscedasticity (ARCH), unconditional heteroscedasticity and functional form mispecification.\textsuperscript{155}

The results on the specifications for the total savings rate during the period 1975-98 are shown in equations 6.8 and 6.9. The former represents a partial adjustment framework whereas the latter is an error correction representation. The results in equation 5.8 indicate that the growth in current income had an insignificant effect on the savings rate, the real deposit rate had a positive and statistically significant effect on the savings rate, lagged savings rate had a positive but insignificant effect on the savings rate and the foreign savings rate had a negative and statistically significant influence on the savings rate.

\begin{equation}
\text{sy} = 18.6 + 0.006 \text{sy}_{-1} - 0.080 \text{ygr} + 0.218 \text{rdr} - 0.421 \text{fsy}
\end{equation}

\text{(6.8)}

R\textsuperscript{2} = 0.661 \quad F(4, 18) = 8.78 \quad \text{DW} = 1.63

\text{Observations: 23 Period 1976-98}

AR 1-2 F\left(2, 16\right) = 0.56544 \left[0.5791\right]

ARCH 1 F\left(1, 16\right) = 0.2531 \left[0.6218\right]

Normality Chi\textsuperscript{2}(2) = 0.24115 \left[0.8864\right]

\text{Xi}^2 F\left(8, 9\right) = 0.29195 \left[0.9514\right]

\text{Xi*Xj} F\left(14, 3\right) = 0.57565 \left[0.7947\right]

\text{RESET} F\left(1, 17\right) = 0.91737 \left[0.3516\right]

The error correction version shows similar results with the exception being that changes in the real deposit rate become statistically insignificant but retain the positive sign for the coefficient, the growth in income remains statistically insignificant but the sign of the coefficient becomes positive and the error correction term is statistically significant and with the expected sign.

savings deposit rates are used in Chapter 7 in establishing the relationship between the domestic financial market and international capital markets.

\text{\textsuperscript{155} The same procedure is true of the specifications on private savings and investment in this chapter.}
Considering the results from both specifications, it is worth noting that the foreign savings rate crowds out the domestic saving effort and that the adjustment speed is relatively high with a 55 percent correction in one period. Although the observations are far too few, a cointegrating vector is established among national savings rate, foreign saving rate, growth rate of GDP and the real deposit rate. The suggested long run relationship is as follows:

\[
\Delta sy = -0.139 - 0.140 \Delta SY_{-1} + 0.019 ygr - 0.540 \Delta sy + 0.095 \Delta rdr - 0.546 EC_{-1}
\]  
\[\text{[t]} \quad (-0.245) \quad (-1.072) \quad (0.179) \quad (-6.208) \quad ** \quad (1.330) \quad (-2.093) \star \]

\[
R^2 = 0.829179 \quad F(5,16) = 15.533 \quad [0.0000] \quad DW = 1.98
\]

N=22 1977-98

AR 1- 2 F(2, 14) = 0.057247 [0.9446]
ARCH 1 F(1, 14) = 0.15981 [0.6954]
Normality Chi^2 (2) = 0.82338 [0.6625]
Xi^2 F(10, 5) = 0.82338 [0.6625]
RESET F(1, 15) = 2.6539 [0.1241]

Although positive and consistent with theoretical priors, the coefficient for real deposit interest rate has a low elasticity. However, the negative sign on the coefficient of the growth in income is counterintuitive since higher income tends to be associated with higher rates of saving. The inference is that changes in current income did not have a significant effect on the savings rate. The sign could be explained by some notion of a desired path for the level of consumption to which economic agents try to revert after any disturbances. The relationship between the trend growth and the actual growth rate depicted in figure 6.2 may illustrate this. Unexpected increases in income do not necessarily lead to increases in saving rates. Instead, they may lead increased consumption especially, if economic agents are guided by some notion of permanent and transitory components of income. Controlling for other factors, the above results lend mild support to the idea that financial liberalization had a positive effect on savings.
Private Saving

Since the financial repression thesis focuses on the responsiveness of private savings to interest rate changes, it is useful to examine the relationship between interest rate changes and the private saving rate. The results for such an exercise are similarly presented below.

\[
\text{psy} = 16.713 + 0.317 \text{psy}_1 - 0.278 \text{ygr} + 0.251 \text{rdr} - 0.473 \text{fsy}
\]  \hspace{1cm} (6.11)

(t) \hspace{1cm} (4.934)** \hspace{1cm} (2.082)* \hspace{1cm} (-1.624) \hspace{1cm} (1.603) \hspace{1cm} (-3.220)**

\[R^2 = 0.625 \quad F(4,18) = 7.5076 \quad [0.0010] \quad \text{DW} = 1.57\]
\[N = 23 \quad \text{Period} \quad 1976 \text{ to } 1998\]
\[\text{AR 1-2} \quad F(2,16) = 0.69173 \quad [0.5151]\]
\[\text{ARCH 1} \quad F(1,16) = 0.96771 \quad [0.3399]\]
\[\text{Normality Chi}^2 (2) = 2.1638 \quad [0.3389]\]
\[\text{Xi}^2 \quad F(8,9) = 0.56988 \quad [0.7799]\]
\[\text{Xi}^2 \times \text{Xi}^2 \quad F(14,3) = 0.30201 \quad [0.9487]\]
\[\text{RESET} \quad F(1,17) = 0.85368 \quad [0.3694]\]

\[
\Delta \text{psy} = 0.173 - 0.507 \Delta \text{psy}_1 - 0.157 \text{ygr} - 0.507 \Delta \text{fsy} + 0.114 \Delta \text{rdr} - 0.562 \text{EC}_1
\]  \hspace{1cm} (6.12)

[t] \hspace{1cm} (0.189) \hspace{1cm} (-1.776)** \hspace{1cm} (-0.980) \hspace{1cm} (-3.432)** \hspace{1cm} (0.989) \hspace{1cm} (-1.776)

\[R^2 = 0.664301 \quad F(5,16) = 6.3323 \quad [0.0020] \quad \text{DW} = 2.31\]
\[N = 22 \quad \text{observations} \quad \text{Period:} \quad 1977 \text{ to } 1998\]
\[\text{AR 1-2} \quad F(2,14) = 1.8639 \quad [0.1916]\]
\[\text{ARCH 1} \quad F(1,14) = 0.47985 \quad [0.4998]\]
\[\text{Normality Chi}^2 (2) = 3.8517 \quad [0.1458]\]
\[\text{Xi}^2 \quad F(10,5) = 0.26611 \quad [0.9644]\]
\[\text{RESET} \quad F(1,15) = 0.14925 \quad [0.7047]\]

The partial adjustment (in levels) specification (equation 6.11) for private savings shows that the private savings rate in Zimbabwe during the period 1976-98 was a positive
function of its own lag and the real deposit rate and a negative function of the growth rate and foreign savings rate. Only the lagged dependent variable and foreign savings rates are statistically significant. The error correction specification (equation 6.12) shows that changes in the rate of foreign savings are the only statistically significant determinant changes in private saving. The availability of foreign savings tends to lower the rate of private savings. The error correction term has the expected sign but is statistically insignificant and so are the other determinants. Subject to some caveats about the size of the data sample, a cointegrating vector was found among private savings rate, foreign savings rate, the real deposit rate and growth in GDP. The long run relationship is as follows:

\[
\text{psy} = 0.097 \text{fsy} + 1.042 \text{rdr} - 1.842 \text{ygr} \tag{6.13}
\]

this suggests some interest rate responsiveness of the savings rate to the real deposit rate as reflected by the long run elasticity, which is slightly greater than unity. However, the limitations of the sample size on which this result is based raises questions about the robustness of the exercise.

As indicated in Chapter 2, the econometric evidence on the interest elasticity of savings is inconclusive. One of the criticisms of the empirical work on the interest elasticity of savings issues discussed in the financial liberalization literature is the tendency to focus on the national accounts concepts of savings. To address that concern, the relationship between financial savings and deposit rates was examined for the Zimbabwe data but interest elasticity of savings could not be confirmed. For example, the results of the following specification for financial savings using both annual and quarterly data were as follows:

\[
\Delta \text{fs}_t = a_0 + \beta_1 \Delta y_t + \beta_2 \Delta \text{rdr}_t + \beta_3 \Delta \pi_t + \epsilon \tag{6.14}
\]

where: \( \text{fs}_t \) is financial savings defined as change in the difference between stock of real broad money and real narrow money; \( y_t \) is real GDP; \( \text{rdr}_t \) is interest rate, and \( \pi_t \) stands for inflation.
\[ \\
\Delta s_t = 4.705 - 0.464 \Delta y_t + 0.002 \Delta rt_t - 0.709 \Delta \pi_t \]
\[ (1.642) (-1.558) (0.288) (-0.898) \]
\[ R^2 = 0.289 \sigma = 0.212312 \quad DW = 1.66 \]


AR 1-2 \( F(2, 14) = 0.55588 [0.5857] \)
ARCH 1 \( F(1, 14) = 0.0092384 [0.9248] \)
Normality Chi\(^2\) (2) = 1.2717 [0.5298]
\( X_t^2 \) \( F(6, 9) = 1.5334 [0.2707] \)
\( X_t \times X_j^2 \) \( F(9, 6) = 0.72213 [0.6831] \)
RESET \( F(1, 15) = 0.024762 [0.8771] \)

\[ \\
\Delta s_t = 0.007 - 0.464 \Delta y_t + 0.002 \Delta rt_t - 0.309 \Delta \pi_t \]
\[ (0.652) (-2.169)^* (1.735) (-1.448) \]
\[ R^2 = 0.095 \sigma = 0.0490137 \quad DW = 2.36 \]

Observations: 73 Period: 1980 q4 to 1998 q4

AR 1-2 \( F(2, 67) = 1.5129 [0.2277] \)
ARCH 1 \( F(1, 67) = 0.080922 [0.7769] \)
Normality Chi\(^2\) (2) = 2.278 [0.3201]
\( X_t^2 \) \( F(6, 62) = 1.271 [0.2838] \)
\( X_t \times X_j^2 \) \( F(9, 59) = 1.2253 [0.2974] \)
RESET \( F(1, 68) = 0.29432 [0.5892] \)

While the real interest variables appear with the right signs, the results on interest rate elasticity of savings using both the national accounts concept of savings and financial saving lend weak support to the tenets of the financial repression paradigm. This also suggests that savings such as were in Zimbabwe were due to other factors and not driven by interest rates. Due to the exchange control regime and capital controls, a sizeable amount of forced foreign savings emerged in the form of blocked dividends, profits and capital of foreign companies. These foreign savings, which could not be repatriated because of exchange controls contributed to the high levels of liquidity in the banking system.

Another feature in establishing the validity of the liberalization hypothesis focuses on the impact of the changes in interest rates on the growth in income. For that purpose, the following specification was tested on the Zimbabwe data.

\[ y_{gr} = \alpha_0 + \beta_1 Ar_{dr} + \beta_2 Ar_{ip} + \beta_3 Ar_{Fd} \]
\[ (6.17) \]
\( \Delta fd \) represents change in financial deepening as measured by the ratio of broad money to GDP and \( \Delta ip \) is change in the private investment ratio relative to GDP.
\[
\begin{align*}
\text{ygr} &= 2.740 + 0.053 \Delta r + 0.284 \Delta p + 0.840 \Delta f_{d,1} \\
\text{R}^2 &= 0.311 \quad \text{DW} = 1.08
\end{align*}
\]


\[
\begin{align*}
\text{AR 1-2 F(2,16)} &= 1.4711 \quad [0.2591] \\
\text{ARCH 1 F(1,16)} &= 0.27364 \quad [0.6081] \\
\text{Normality Chi}^2(2) &= 1.7588 \quad [0.4150] \\
\text{Xi}^2 F(6,11) &= 0.44554 \quad [0.8338] \\
\text{Xi*Xi F(9,8)} &= 0.35756 \quad [0.9266] \\
\text{RESET F(1,17)} &= 0.092446 \quad [0.7648]
\end{align*}
\]

The above representation of economic growth is necessarily limited and seeks to highlight the impact of changes in real interest rates on growth. Although the coefficient on real interest rate is positive and consistent with theoretical expectations, it is not statistically significant. It thus does not lend strong support for the MS hypothesis. However, changes in the financial deepening variable are positive and statistically significant and consistent with the tenets of the MS hypotheses about the impact of increased financial resources on investment and growth.

6.4. Investment Rates

Theoretical explanations of investment range from the simple accelerator model which characterizes investment as the difference between the initial actual level of capital stock and the desired level of capital, the neoclassical theory, the internal liquidity model and the expected profits model. The neoclassical model adapts the flexible accelerator model and postulates that the desired level of capital is determined from conditions of profit maximization subject to a production function with constant returns to scale as follows:

\[
Q = AK^\alpha L^{1-\alpha}
\]

where K is capital, L is labour and \(\alpha\) and \(1-\alpha\) are the respective shares.

The desired capital stock can be presented as follows:

\[
K^* = \alpha(pQ)/c
\]

where \(\alpha\) is the elasticity of output with respect to capital services, \(p\) is the price of output, \(Q\) is the quantity of output, \(K^*\) is the desired amount of capital and \(c\) is the accounting price.
of capital services before taxes. In this formulation, $K^*$ is determined by both technological and market conditions and the price of the product relative to that of capital services. The process of adjustment to the desired stock of capital occurs over several periods and if the adjustment factor is a constant proportion of the difference between the desired and actual capital, it can be characterized as a distributed lag function as follows:

$$I_n = K_t - K_{t-1} = (1-\lambda)(K^*_t - K_{t-1}) \quad (6.21)$$

where $I_n$ is net investment and $\lambda$ is a constant adjustment factor.

Since total investment depends on both new investment and replacement investment, it can be characterized as follows:

$$I = (1-\lambda)(K^*_t - K_{t-1}) + *(K_{t-1}) \quad (6.22)$$

where the last term stands for replacement capital defined as proportional to capital stock. Tobin's Q model of investment is amenable to empirical treatment because it relates investment demand to financial variables through the $q$ ratio. This ratio represents a division of the rate of return on investment by the cost of capital. The model suggests that firms continue to invest as long as the increase in the value of their shares exceeds the increase in the replacement cost of their physical assets. This model incorporates managerial theories of investment in which the objective function of managers includes both profit maximization and other strategic objectives such as diversification and expansion to increase the market share of a firm, which may lead to improved share prices. As Hayashi (1982, 214) points out, many researchers have established the equivalence of Tobin's Q model to both the modified neoclassical model and the profit model.

The internal liquidity model relates the desired ratio of capital to the flow of internal funds available for investment as follows:

$$K^*_t = \alpha L_t \quad (6.23)$$

---

156 Neoclassical investment theory also uses a rational lag distribution scheme for the adjustment of capital stock to the desired level.

157 This definition is more widely used in empirical estimates of investment demand.
where $\alpha$ is the desired ratio of capital to internal funds available for investment and $L$ is a measure of liquidity. The expected profits model relates the desired capital stock to the market value of the firm as follows:

$$K^*_t = \alpha V_t$$

(6.24)

Where $V'$ is the desired ratio of capital to the firm's market value and $V$ is the market value of the firm. These models of investment demand assume developed financial markets and ready availability of data on capital stock and cost of capital among others. A number of studies have pointed out the shortcomings of some of these models especially in a developing country context.\textsuperscript{158} In particular, financial markets in these countries are underdeveloped, institutional problems often arise in foreign exchange and labour markets, the share of public investment is often quite large relative to the private sector investment and data on the cost of capital and stock is sparse. Most of the empirical work done on investment seems to use some variant of the accelerator model and it takes as the point of departure, the flexible accelerator model.

In the fixed accelerator model, the level of capital stock adjusts to a level consistent with the new level of output and thus the latter is the driving force. In that context, investment is determined as the sum of the difference between the existing and the desired capital stock and the replacement needed to substitute the depreciation of the existing stock. In the flexible variant of the accelerator model, the speed of adjustment depends on factors such as the level of capacity utilization hence the incorporation of distributed lags to deal with the lack of instantaneous adjustment. Some of the strength of the accelerator model derives from its malleability and the support of its basic tenets by substantial empirical work.

The popularity of the neoclassical-flexible accelerator models in most empirical work on investment reflects at least two basic considerations in undertaking investment i.e. aggregate demand and profitability. In addition to these two considerations, literature on investment in the context of developing countries has other arguments and these are financial repression, foreign exchange shortage and the lack of infrastructure; and economic instability.

There does not appear to be a convergence of views on investment functions in LDCs. The neoclassical model has limited applicability in developing countries particularly because of institutional and structural features, market imperfections, foreign exchange constraints, data constraints (e.g. cost of capital, definition of private investment tend to include public enterprises). However, several researchers have, with varying degrees of success, incorporated features of the neoclassical investment function in developing countries (Greene and Villanueva, 1991; and Blejer and Khan, 1984).

The financial repression approach to the study of investment in developing countries abandons the neoclassical approach and postulates a positive relationship between private investment and the accumulation of real money balances, which in turn are influenced by real interest rates. The inference drawn from this is that private investment is a positive function of real interest rates. This approach hypothesizes that private investment in developing countries is positively related to the accumulation of domestic real money balances.

Other studies have retained the neoclassical model and adjusted for the analytical and data problems in developing countries. In line with the neoclassical model, these studies suggest a negative relationship between private investment and the real rate of interest and a positive relationship between the rate of growth of real GDP per capita and investment. Additionally, the ratio of public investment to GDP has been identified as one of the determinants of private investment in developing countries. Blejer and Khan (1984) indicate that in developing countries, investment is positively influenced by the availability of domestic credit.

The work of MS shows that firms in developing countries are subject to credit rationing. While asymmetry in the information between debtors and creditors might also lead to such rationing in industrial countries, the situation in developing countries with repressed financial systems is further compounded by the administrative fixing of interest rates at low levels and the direct allocations of credit to favoured sectors. According to the

---

159 This runs counter to the neoclassical position that higher real interest rates have negative effects on investment through the implied higher cost of capital.

160 Examples of studies which have attempted such modifications and adaptations of theory in developing countries are Tun Wai and Wong (1982); Blejer and Khan (1984); and Greene and Villanueva (1991).
MS perspective, ceilings are more relevant than spreads for credit allocation in developing countries. Foreign exchange shortage is a constraint on investment especially under exchange controls and import quotas. The effects of this shortage are similar to those of credit rationing. The investment decision by an economic agent arises from an optimization problem that takes into account quantity rationing. As discussed above, these factors were at play in Zimbabwe.

Another issue that arises with respect to investment has to do with the relationship between private and public investment. Questions often arise as to whether or not public sector investment crowds out private investment. Some researchers have established some complementarity between the two and that public investment especially for infrastructure development crowds in private investment.

What emerges from the various models of investment and the associated empirical work is that the models need not be mutually exclusive. Empirical work has had some degree of success in integrating these models in the context of developed countries. For example, what has been termed neoclassical-flexible accelerator models have proved quite popular in developed country research on investment. However, similar success has not accompanied efforts in developing countries, and this has given credence to the view that in addition to the theoretically expected determinants of investment, there are other additional factors which have to do with the structural features of developing country economies and the role of government.

The range of variables commonly tested in investment functions include economic growth (ygr), per capita income (ypcus), private investment rate (Ip), real lending rate (rbind), the rate of public sector investment (Ig), government saving rate (gsy), net international reserves in months of imports (rsvs), inflation (π) real credit to private sector (crpvt), foreign direct investment (fdi), changes in the real effective exchange rate (crer), lagged private investment (Ip_1) and the rest are as defined earlier.

\[ Ip = \alpha_0 + \beta_1 ygr + \beta_2 ypcus + \beta_3 \pi + \beta_4 rbind + \beta_5 dbs + \beta_6 dbt + \beta_7 Ig + \beta_8 gsy + \beta_9 crpvt + \beta_{10} rsvs + \beta_{11} crer + \beta_{12} fdi + \beta_{13} Ip_1 + \epsilon \]  

(6.25)

The variables ryg and ypcus are measures of income and its rate of change and are used as proxies of aggregate demand, π captures the diversion of resources from productive activities to rent seeking behaviour and/or various forms of hedges against inflation, Ig and
gsy capture the substitution or complementary effects of fiscal policy to private investment, crpy captures the impact of monetary policy and financial system on private investment. Higher real interest rates imply a rise in the cost of capital as well as an increase in the opportunity cost of retained earnings. A lower incremental capital output ratio (ICOR) is associated with higher growth rates and implies improved efficiency in the use of capital. In situations of financial repression, the volume of credit may be a better indicator of monetary policy than the cost of credit.

Changes in the real effective exchange rate capture the impact of an appreciation or depreciation on investment behaviour. This is particularly important in cases of high dependence on imported capital goods. Under such circumstances, depreciation would result in a decrease in investment as well as an increase in the debt burden while an appreciation would have the opposite effects. On the other hand, a real exchange rate depreciation improves the profitability of the tradable goods sector which in turn is expected to attract increased investment in that sector. Thus, the impact of exchange rate movements on private investment is ambiguous.

The measure for available foreign reserves captures the impact of foreign exchange availability on investment. In some developing countries, investment is often constrained by the lack of foreign exchange and this is especially true in situations where exchange controls are operative. Variable dbt and dbs capture the negative effects of a rising debt burden on investor's confidence and therefore ability to invest in a given economy.

Since the objective is to establish the relevance of the financial liberalization in explaining investment behaviour, the specification adopted here is narrow and focuses on growth in GDP, real interest and credit to the private sector as shown below.

\[ Ip = \beta_0 + \beta_1 ygr + \beta_2 ygr_{-1} + \beta_3 rdr + \beta_4 crpy + \beta_5 Ip_{-1} + \varepsilon \]  

\[ Ip = 5.803 - 0.149 ygr + 0.105 ygr_{-1} + 0.026 rdr + 0.427 crpy + 0.247 Ip_{-1} \]  

\[ (2.296)^* \quad (-1.679) \quad (1.288) \quad (0.365) \quad (4.630)^** \quad (1.516) \]

\[ R^2 = 0.857 \quad F(5, 14) = 16.737 \quad [0.0000] \quad DW = 2.28 \]

Instability tests, variance: 0.204659 joint: 1.28797
AR 1-1 F( 1, 13) = 2.6373 [0.1284]
ARCH 1 F( 1, 12) = 0.15609 [0.6997]
Normality Chi2(2) = 1.4936 [0.4739]
Xi2 F(10, 3) = 0.17507 [0.9847]
RESET F( 1, 13) = 0.27286 [0.6102]
The results in equation 6.27 suggest that credit availability was the main determinant of private investment in Zimbabwe. The coefficient on this variable is positive and statistically significant. This variable captures the situation of foreign exchange constraints before financial liberalization as well as credit squeeze after liberalization. The signs on the income variable and its lag and the lag of the investment rate suggest the operation of the acceleration mechanism of sorts. However, the coefficients on these variables are statistically insignificant suggesting that they are disturbed by other factors in the foreign exchange constrained situation. The allocation of foreign exchange was closely tied to credit availability and effectively became a rationing devise for credit allocation. It can also be inferred that investment was not constrained by the availability of savings. In other words, credit availability did not depend on the level of savings in the banking system first because the banking system was awash with liquidity and could fund any sound investment projects and secondly because bank lending operations may not necessarily be constrained by their deposit base. This is especially so given the high levels of liquidity that existed in the banking system.

The coefficient on the real interest rate variable is positive and statistically insignificant. This is inconsistent with the expectation that higher real deposit rates reflect higher cost of capital the effect of which would be negative on investment. Taken together with the coefficient on credit availability, this may simply reflect that it is credit availability rather than cost which is much more important. When included in the above specification, the coefficient on changes in real broad money was statistically insignificant. This result suggests that fluctuations in the stock of real money did not conform to the expectations of the standard arguments of financial repression. Although most of the coefficients on the variables are correctly signed, only credit availability and financial deepening have statistically significant impacts on investment and growth. This supports the view that improved financial intermediation in the form of increased credit availability promotes investment. However given that the coefficients on broad money were not significant and thus unsupportive of the MS paradigm, the explanation for the impact of credit availability and financial deepening should be read as reflecting an improved foreign exchange situation. As described earlier, under the exchange control regime in Zimbabwe, the demand for credit was derived and it was readily available to those allocated with foreign exchange.
6.5 Summary

In this chapter, it has been argued that financial liberalization in Zimbabwe started at time when the level of financial depth as represented by the ratio of broad money to GDP was on a declining trend. The regime change arrested this decline and ushered in some recovery. There was a notable, if ephemeral, shift in the relative share of domestic credit going to the private sectors compared to the public sector. This suggests the removal of the potential crowding out of the private sector.

It is noted that there were some improvements in savings and investment but these cannot be unambiguously be attributed to financial liberalization. Increased availability of foreign exchange and the return of confidence are strong explanations of increased investment in a hitherto foreign exchange constrained economy. The increased availability of credit reflect the banking system’s ability to meet hitherto pent-up demand for credit and in the Zimbabwe context this means increased availability of foreign exchange, the allocation procedures of which were a de facto credit rationing device. Although, giving mild support to the MS hypothesis in terms of the signs on the coefficients of real interest rate variable, overall, the empirical results do not confirm the interest elasticity of savings in the Zimbabwe data for the period examined.

A priori, the entry of new financial institutions would have increased competition and efficiency in the banking system. However, data on the evolution of both domestic and international interest rate spreads do not confirm this. The widening of international interest rate spreads contributed to significant capital inflows which were not successfully sterilized by the monetary authorities and thus led to some problems for monetary control. Financial liberalization has since been undermined by a number of policy reversals. Interest rates have generally been negative and the private sector has increasingly been crowded out by the financing requirements of the public sector.
Table 6.2. Selected Equations for saving, investment and growth rates 1/2/

<table>
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<th>sy</th>
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<th>Δδs</th>
<th>Δδs (ann)</th>
<th>Δδs (quart)</th>
<th>ygr</th>
<th>Ip</th>
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</table>

1/ One and two stars mean significance at the 5 and 1 percent levels respectively.
2/ sy-national saving/GDP, psy-private saving/GDP, Ip=private investment /GDP, ygr=growth in real GDP, y= change in log of real GDP, rdr=real deposit rate, fsy=foreign savings/GDP (external current account), EC= error correction term, Δr=change in the rate of inflation, crpy= bank credit to the private sector, Δfd= change in financial deepening (M2/GDP). The data are from the IFS.
CHAPTER 7. INFLATION AND INTEREST RATES

7.1 Introduction

As indicated in Chapter 1, high levels of inflation and nominal interest rates were among the features of the liberalized financial environment. These had adverse effects on the rest of the economy and became major concerns for policy makers. Accordingly, the containment of inflation at single digit levels and targeting of interest rates became important planks of monetary policy. This chapter analyses the underlying causes of inflation and high interest rates after financial liberalization. Prior to economic reforms introduced in 1991, Zimbabwe maintained extensive controls on consumer and producer prices and provided a wide range of subsidies. A general price freeze was in force from June 1987 to January 1990. The purpose of these controls was threefold. First, it was to ensure the availability of basic foodstuffs to the poor at affordable prices, second it was to control monopoly pricing due to the high degree of concentration in domestic industries and lastly it was to keep in check excessive profiteering from limited supplies of imported goods.

The effectiveness of the price controls could be questioned especially in light of the many reported incidents of violation by companies and merchants, the emergence of shortages and the associated rent seeking behaviour and the cumbersome administrative machinery to police the controls. The actual prices paid by consumers in many cases bore no resemblance to the story gleaned from the official consumer price indices and in that sense one could talk of suppressed inflation prior to 1991. In that sense reported inflation numbers reflected the effectiveness of price controls. Imported goods were deliberately suppressed through the tight foreign exchange controls designed to ensure sustainable external account positions. Before the price freeze, any price increases in foodstuffs and other essential products required cabinet approval while increases in prices of other products were subject to maximum percentage mark-up over costs.

The price freeze was lifted in two stages in June 1989 and in January 1990. Henceforth, there was some reversion to the previous practice of price controls. The

161 Four main categories covered by the price controls comprised: cabinet price setting for products subject to direct controls, product prices increases which required ministerial approval, products with pricing formula requiring ministerial approval for changes in the formula and products with fixed markup above cost which was set by a price control board.
Government also intervened extensively in wage determination with a view to redressing past income inequalities. Consequently, wages at the lower end of pay scales rose faster and contributed to some form of wage compression particularly in the public sector. Under these circumstances, the indicators of inflation such as consumer price indices understate the underlying inflation. Historically two indices of consumer prices were collected in Zimbabwe. The indices were based on the respective consumption baskets of the lower and higher income groups. The index for the former income group was more affected by policy intervention in the form of price controls and subsidies referred to above while the index for the latter income group was not and thus tended to be a better indicator of the inflationary forces. Table 7.1 shows the relative weights of the composite consumption basket where the categories food and housing, fuel and power have the highest weights.

Table 7.1. Composition of the Consumer Price Index

<table>
<thead>
<tr>
<th>Category</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>29.2</td>
</tr>
<tr>
<td>Drink and Tobacco</td>
<td>9.8</td>
</tr>
<tr>
<td>Clothing and Footwear</td>
<td>9.8</td>
</tr>
<tr>
<td>Rent, rates, fuel and power</td>
<td>18.7</td>
</tr>
<tr>
<td>Furniture and Households stores</td>
<td>7.2</td>
</tr>
<tr>
<td>Medical care</td>
<td>2.8</td>
</tr>
<tr>
<td>Transport and communication</td>
<td>8.4</td>
</tr>
<tr>
<td>Recreation and entertainment</td>
<td>1.9</td>
</tr>
<tr>
<td>Education</td>
<td>7.6</td>
</tr>
<tr>
<td>Miscellaneous goods and services</td>
<td>4.4</td>
</tr>
<tr>
<td>All items</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Quarterly Digest of Statistics, Central Statistical Office (CSO)

The level of inflation recorded prior to 1990 was quite low for the above stated reasons. However, the situation changed dramatically after 1991 and inflation became a major problem and concern for the authorities. Inflation surged from an annual average of less than 15 percent prior to 1990 to an annual average in excess of 25 percent after the reforms. This was mainly on account of the removal of price controls which coincided with output shocks occasioned by drought. Inflation reached 70.4 percent in October 1999 and is thus above the moderate range defined by Dornbusch and Fischer (1993) as being in the range 15-30 for at least three years. Figure 7.1 seems to suggest some negative relationship between inflation and the rate of growth in output, inflation rises when growth in output is

162 The other indicators are the GDP deflator and the wholesale price index. Note the inherent weaknesses of CPI discussed in Chapter 5.
in output is low and vice versa. Although inflation has many economy-wide costs with implications for output and welfare, the focus here is on its implications for the financial sector.\textsuperscript{163}

In the financial sector, high and unstable levels of inflation trigger portfolio shifts out of financial assets into real assets. This may lead to financial disintermediation and so undermine the financial sector's role in domestic resource mobilization. To forestall this negative externality, financial liberalization needs to be underpinned by among others, price stability as indicated in Chapter 2. The removal of price controls, exchange controls and the consequent surge in imports, increases in both private and public sector wages, persistent fiscal deficits and a series of drought induced supply shocks unleashed inflationary forces.\textsuperscript{164} As shown in table 1.1 inflation surged from 23 percent to 42 percent in 1992. The average annual rate of inflation during the five year period preceding liberalization was 12 percent. The challenge for policy makers was to rein in the inflation.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Figure7.1.png}
\caption{Zimbabwe: Inflation, GDP growth and Discount Rate}
\end{figure}

\textsuperscript{163} See Driffill et al (1990) and Romer (1996) for discussions on the costs of inflation and motivations for containing it.

\textsuperscript{164} While relieving some of the supply constraints, increased imports would have exerted some upward pressure on prices through the pass through effect of downward exchange rate adjustments.
One of the major challenges facing the Zimbabwe policy makers is how to free interest rates and make them positive in real terms. This resulted in very high nominal interest rates in Zimbabwe. High rates of interest became a major problem for many companies dependent on borrowing for their working capital. Bond (1998, 249) reported that corporate debt had become a millstone for many companies. He cited the Financial Gazette (23/7/92), which reported that company liquidations had become rampant as heavily borrowed companies including blue chip ones failed to pay increased interest rates and retrenched workers. As noted in an earlier section, the RBZ set itself a target of maintaining the real discount rate in the range 2-5 percent. The attainment of this required that the rate of inflation be kept in check. Liberalization of the domestic financial sector is expected to integrate the domestic market with the international capital markets. One manifestation of such integration would be the narrowing of the spread between domestic interest rates and international rates of interest. Contrary to these expectations and despite changes in the exchange and trade regimes, the spread between domestic interest rates and international rates in Zimbabwe widened after liberalization. Significant, if ephemeral capital inflows occurred during the mid 1990s but domestic nominal interest rates remained quite high and became one of the major policy concerns as indicated above.

The second section of this chapter sets the conceptual framework for analyzing inflation. The linkages between inflation, interest rates and money supply on one hand and that between inflation and seigniorage on the other are examined. The third section discusses some studies of inflation in Africa while the fourth section presents the findings on the Zimbabwe data and the fifth concludes.

7.2. Conceptual Framework

a. Inflation

Since the authoritative surveys by Johnson (1963) and Laidler and Parkin (1975), discussions on inflation have changed to reflect the dominant trends in macroeconomic theory. As observed by McCallum (1996), the Laidler-Parkin distinction between steady

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165 Institutional investors were reported to have provided temporary respite to some companies with which they entered into long-term lease arrangements and eventually bought up factory premises.

166 See McCallum (1996) for a discussion of the influence on rational expectations, the Ricardian equivalence, overlapping generations models, cash-in-advance constraints, (continued)
and predictable inflation on one hand and surprise inflation remains a useful analytical
device. At least four models for explaining the acceleration of inflation are identified in the
literature and these are the monetary view, the fiscal view, the exchange rate depreciation
and the structuralist view. Yet, another way of approaching the subject is to group
explanations of inflation around three categories as follows:

i) pure monetarist theories;

ii) internal theories comprising labour market theories and excess demand theories;\(^{167}\)

iii) external theories comprising the transmission of inflation through import prices and
through the pass through effects of exchange rate depreciation.

These perspectives are not necessarily disparate and can viewed in terms of
Marshall’s scissors of demand and supply factors. Demand–pull factors include the impacts
of monetary growth and fiscal deficits, while the cost-push factors include rising costs of
imported inputs, rising import prices, wage demands and mark-up pricing. The structuralist
perspective contends that fiscal deficits and the resulting inflation are rooted in the
peculiarities of developing economies.\(^{168}\) From this, it follows that the more inclusive
definition of inflation is one that covers the essence of situations of actual and potential
price increases, which are of an enduring nature. The use of the word potential reflects
situations of suppressed inflation due to administrative price controls.

As described in Chapter 5, financial liberalization can have significant effects on
monetary aggregates. Inflation is one of the links in this process and it is invariably

\(^{167}\) The relationships among inflation, employment and output levels relative to their
"natural-rate values have been discussed under the Philips-curve phenomena. Four Philips–
curve or aggregate–supply theories are often discussed (flexible-price, sticky price
expectational models, NAIRU models and real business cycle models). See McCallum
(1996) for a discussion of these.

\(^{168}\) The main assumptions and policy implications of the structuralist perspective are
discussed in Chapter 2. From an empirical perspective, elements of the structuralist
perspective could be subsumed under internal theories, which incorporate supply side
factors such as wage demands, indexation, cost plus pricing and pass through effects of
exchange rate changes.
associated with rapid increases in monetary aggregates. Early applications of the Cagan model to the inflation problem in developing countries led to conclusions that inflation is primarily caused by the expansion in money supply. Subsequent studies and empirical work recognized the interdependence of inflation and monetary expansion by explicitly examining the impact of bank financed fiscal deficits on inflation. Specifically, it was noted that government expenditure tends to rise with inflation while revenue declines due to collection lags.

The revenue shortfall-induced deficit contributes to an increase in money supply and further inflation. A conclusion that emerges from such work is that revenue collection lags constitute the main built-in destabilizers rendering fiscal policy automatically destabilizing in developing countries. This has given rise to perceptions that there is an inflation bias in monetary policy. This inherent tendency to inflate arises from the problem of time inconsistency whereby a policy that is considered optimal in one period is considered sub-optimal when the time to act on it arrives. The trade-offs between output and inflation and governments’ desire to collect seigniorage are often cited as the main motivations for increasing money supply especially in cash strapped developing countries. The consensus seems to be that monetary accommodation sustains inflation. Others have gone so far as to conclude that the neglect of domestic monetary and credit policies in many countries led to inflation at home and excessive borrowing abroad (World Bank 1985, 2).

In terms of specifications, an eclectic approach is preferred because of its ability to take into account the demand and supply side aspects of inflation and to combine competing views as follows:

169 This is often linked to Friedman (1963)’s dictum that inflation is always and everywhere a monetary phenomenon. Added to this notion is also the idea of the exogeneity of money stock. McCallum (1996) defends the monetarist position on this issue and appeals to a correct interpretation of exogeneity. Romer (1996) provides an explanation of why growth in money supply plays an important role in determining inflation.

170 For studies addressing the two-way causality between money and prices in high inflation countries, see Sargent and Wallace (1973), Frenkel (1977) and Aghevli and Khan (1977). See Bird (2000) lecture notes on the automatic destabilizing effects of his concept of fiscal thrust in developing countries. Fiscal thrust acts in the opposite way to the effects of the fiscal drag. Added to this would be the Tanzi effect, which suggests an endogenous rise in the budget deficit, occasioned by slower adjustment to inflation by revenue relative to expenditure.
\[ \pi_t = \beta_0 + \beta_1 \text{rd} + \beta_2 y + \beta_3 M \Delta \chi + \beta_4 \Delta m2 + \pi_{t-1} + \varepsilon \]  

(7.1)

where \( \pi_t \) stands for inflation, \( \pi_{t-1} \) is lagged inflation, \( \text{rd} \) is the real deposit interest rate, \( y \) is GDP, \( M \Delta \chi \) represents import prices adjusted for exchange rate changes, \( \Delta m2 \) is the change in broad money and \( \varepsilon \) is the error term. The logic underlying equation 6.1 is that the consumer price index is made up of prices of tradable and non-tradable goods. The prices of the former are determined by world prices adjusted for a country's exchange rate while the prices of the latter are determined by the discrepancy between the supply of money and the demand for money. Stated in another way, the prices of nontradeables are determined by excess money supply. The foregoing can be summarized in the following equations, which are then combined with the demand for money function to yield equation 6.1 above.

Price: \( \pi_t = \pi_t^T + \pi_t^{NT} \), where \( \pi_t^T \) stands for prices of trade goods whereas \( \pi_t^{NT} \) stands for prices of nontraded goods.

Traded goods prices: \( \pi_t^T = \pi_t^T \chi \), Nontraded goods: \( \pi_t^{NT} = MS_t - M_t^D \)

An important difference in the determinants of the money demand function used above with the one in Chapter 5 has to do with the use of the real rate of interest in equation 6.1. The intention is to capture the possible increase in financial credit resulting from higher positive real rates of interest and ultimately its positive effects on output. The expected signs in of the coefficients in equation 6.1 are as follows: \( \beta_1 < 0, \beta_2 < 0, \beta_3 > 0 \) and \( \beta_4 > 0 \). This implies that higher positive real rates and higher output reduce inflation while increases in import prices and money supply increase it.

b. Link between Inflation and Interest Rates

The effects of inflation on the demand for money in Zimbabwe have been analyzed in Chapter 5 where the empirical results suggest a dominance of inflationary expectations. One of the objections to financial liberalization is the possible inflationary impact of the freeing of interest rates. The emergence of very high rates of interest subsequent to financial liberalization in some countries led many researchers to incorporate open economy and domestic monetary factors in the analysis of interest rate determination. 171 In

171 The experiences of Argentina, Chile and Uruguay are noteworthy in this regard. These experiences were discussed by Diaz-Alejandro (1981), Edwards (1985b), Hanson and deMelo (1985) and Harberger (1982).
particular there was concern about the operations of domestic financial markets and the impact of the high and volatile world interest rates prevailing in the 1980s as reflected in a number of studies, examples of which are Edwards and Khan (1985), Mathieson (1982) and others cited above. As noted by Edwards and Khan (1985), the establishment of the exact effects is clearly an empirical issue. However, there is no gainsaying that higher interest rates may shift savings from goods into financial instruments and in the process contribute to a reduction in demand pull inflation as well as ease pressure on aggregate supply by reducing the need to hoard goods.

The Fisher identity and the interest parity theory are the two main analytical frameworks for analyzing interest rate determination. The former, suggests that the nominal interest rate is the sum of the real interest rate and expected inflation as follows:

\[ i = r + \pi^e \] (7.2)

The policy recommendations flowing from this framework are that competitive financial markets establish nominal interest rates on deposits in order to encourage the portfolio shift from real assets to financial assets and that the nominal growth in real assets is on average, equivalent to the nominal rate of inflation. Since lending rates are based on the cost of funds, they are also positive in real terms.\(^{172}\) Debates have often arisen as to whether the real interest rate necessarily becomes positive all the time and whether the effects of inflation depend on whether it is expected or unexpected. The answer on the first issue is negative while some views about the incorporation of inflationary expectations in US treasury Bill rates appear to have been invalidated by Summers (1983) among others.\(^{173}\)

In view of the potential substitution between domestic currency denominated and foreign currency denominated assets, the Fisher identity’s focus on domestic goods and assets is limited in explaining interest rate determination in open economies. Indeed many of the countries undertaking interest rate liberalization have done so within the framework of also liberalizing their trade regimes. The interest parity theory takes into account the potential substitution between domestic and foreign assets and focuses on the condition of

\(^{172}\) The cost of funds includes rates paid on deposits and a margin to cover the cost of financial intermediation. The intermediation costs include reserve requirements, taxes, administrative costs, overheads and return to equity.

uncovered interest parity. Under the assumption of capital mobility, the notion of uncovered interest parity suggests equality between the nominal interest rate on domestic assets with the world interest rate adjusted for the expected rate of devaluation and risk. For example, capital flight triggered by expansionary demand management policies would trigger some upward adjustment in local interest rates until the spread between local and foreign currency assets just covers the expected devaluation.

As Hanson et al (1986) point out, the two theories of interest rate determination may yield different results if the expected rate of devaluation and the expected inflation differential are not equal and also if the risk premium on one of the currencies is significant. The effects of expected devaluation are one possible explanation of the abnormally high real rates of interest observed in some countries after liberalization. Domestic interest rates could become depressed and even negative if the expected rate of devaluation were significantly lower than the expected inflation differential. This would imply an increase in the public's desire to borrow in foreign currency and lend or deposit in local currency.

One might ask the question as to which of the two theoretical frameworks for interest rate determination guides policy makers in developing countries. However, a lot depends on the openness of economies in question and specifically on the degree of substitution between domestic and foreign assets. Both perspectives offer some guidance since interest rates depend on domestic financial market conditions as well as on the expected rate of devaluation and world interest rates. Edwards and Khan (1985) develop a hybrid model, which incorporates both features of closed and open economies, and demonstrate that the relative importance of domestic monetary factors and open economy factors crucially depend on the openness of the capital account.

Edwards and Khan (1985) develop three models comprising the two polar cases of autarky and openness and a general case. The general case is applicable to most countries. For the exercise at hand, the general case model is adapted in establishing the determinants of domestic interest rates in Zimbabwe. The essence of the model is as follows:

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174 The extremes of completely closed or open economies are ruled out in the generally liberal global economic environment. Even economies with closed capital accounts are subject to external effects in the determination of interest rates and these are transmitted through trade with the rest of the world.
id = α₀ + α₁afi + α₂ln y₁ + α₃ln m₁ + α₄π₁ + α₅ id₁ + e₁

(7.3)

where id represents 3 months domestic treasury bill interest rates, afi is the 3 months US treasury bill interest rates adjusted for exchange rate movements, y is real income, m is broad money, π stands for inflation measured by changes in the CPI and e₁ is the error term. The above specification incorporates open and closed economy features and additionally accommodates the possibility of slow adjustment in both the domestic and foreign variables. If the coefficient on foreign interest rate were unity, implying instantaneous adjustment of the domestic interest rate as in the case of a completely open economy and the coefficients on the rest of the variables were zero, then the domestic nominal rate of interest would be would be equal to the adjusted foreign interest rate in both the short and long runs.

In the case of the closed economy, the coefficients on the adjusted foreign interest rate and the lagged domestic interest rate would be equal to zero suggesting the influences from the domestic side only. Given the absence of a developed forward exchange market in Zimbabwe, agents are risk neutral and therefore use the notion of expected rate of devaluation in adjusting the foreign rate of interest.¹⁷⁵ In view of the range of controls existing in Zimbabwe and the nascent liberalization of interest rates and the trade regime initiated in 1990, the economy could be characterized as semi open.

Quarterly data are used for the period 1990 q2 to 1998 q2 and the estimation method is OLS. The actual rate of inflation is used and thus there is an implicit assumption of perfect foresight.¹⁷⁶ Unlike the model from which the specification here is adapted, real income and lagged money balances are entered separately. The results shown in equation 7.4 (with t ratios shown in parenthesis below the respective coefficients) indicate that inflation, real money balances and the lagged 3 months treasury bill are statistically significant at the 5 percent level.

¹⁷⁵ As noted by Edwards and Khan (1985), a forward premium could be used where it exists and some assumptions could be made about the nature and properties of the risk premium.

¹⁷⁶ Otherwise one could use fitted values from an autoregressive process applied to the actual rate of inflation as did Edwards and Khan (1985).
id = 18.94 - 0.26 \alpha + 0.26 \pi + 4.78 m_1 - 6.18 y + 0.79 id_1 
(7.4)

(t) \begin{bmatrix} 
0.368 \\ -0.443 \\ 3.529 \\ 2.081 \\ -1.148 \\ 8.790
\end{bmatrix}

R^2 = 0.922081 \quad F(5, 27) = 63.903 \quad [0.0000] \quad DW = 1.62
SC = 2.23401 \quad HQ = 2.05347 \quad FPE=7.14211 \quad AIC = 1.96192
WALD test \ Chi^2(4) = 13.888 \quad [0.0077] **
Number of Observations:33

Information Criteria:
SC = 2.23401 \quad HQ = 2.05347 \quad FPE=7.14211 \quad AIC = 1.96192
AR 1- 3 F( 3, 24) = 0.46409 \quad [0.7100]
ARCH 3 F( 3, 21) = 1.0561 \quad [0.3887]
Normality \ Chi^2(2) = 0.38115 \quad [0.8265]
Xi^2 F(10, 16) = 1.4481 \quad [0.2456]
Xi*Xj F(20, 6) = 0.74374 \quad [0.7159]
RESET F( 1, 26) = 0.00016498 \quad [0.9898]

The US treasury bill rate and real income are statistically insignificant and their coefficients are negative. The specification passes a number of tests and in particular shows no evidence of residual autocorrelation (AR), conditional heteroscedasticity (ARCH), unconditional heteroscedasticity (Xi^2 or Xi*Xj) and functional form misspecification (RESET). The residuals are normal and the residual of equation 7.3 is stationary. Figure 7.2 illustrates a good fit for the specification and the results demonstrate a preponderance of domestic factors over foreign determinants of nominal interest rates during the period covered.

As shown in Figure 7.3, foreign interest rates as proxied by US treasury bill rates(afi), had little impact on domestic interest rates, which actually moved in the opposite direction immediately after liberalization. This development can be taken as an indicator of the extent of misalignment prior to the regime change and current expectations for currency depreciation. It also indicates that the domestic financial market was effectively insulated from foreign influences despite liberalization.

The negative sign on the coefficient for the foreign interest rate variable is not in line with theoretical expectations. However, this may be explained in terms of the tightness of the exchange control regime, capital controls and the fact that it was illegal for residents to hold or acquire foreign currency denominated assets. These factors militated against the country’s domestic financial market being integrated into world capital markets. As indicated in Chapter 1, foreign currency accounts were only introduced in 1994 and even then subjected to a series of policy reversals. Under financial repression, interest rates were administratively fixed.
The results are akin to what would be expected in the closed economy model where the coefficients on the adjusted foreign interest rate and the lagged domestic interest rate would be equal to zero suggesting the influences from the domestic side only as described above. From the results obtained here, it may not be wide off the mark to suppose that what appears on the surface to be a semi-open economy in reality operated like a closed economy. Though subsequently jettisoned, the initial implementation of trade and exchange reforms gives credence to the notion a semi-open economy. This sort of result is not peculiar to Zimbabwe.

In their study, Cho and Khatkhate (1989) report that the outcomes with respect to integration for their sample of countries were varied and not always consistent with theory. For example in The Philippines, the interest rate differential widened because of volatile exchange rate movements, exchange controls and uncertainty about inflationary pressures. Parallels could be drawn between the Zimbabwe situation and that of the Philippines with respect to interest rate differentials. It can also be argued that the initial widening of the interest rate differentials in the early stages of the reforms reflected some correction to the level of domestic rates. The widening after the 1997 currency crises reflects the re-imposition of exchange controls as the authorities reacted to the currency attack. The re-imposition of exchange controls moved the country further back towards a closed economy where domestic interest rates are insulated from external influence.

Edwards and Khan (1985) apply their model to Colombia and Singapore, two countries in different stages of financial development with the former at the time of analysis, still maintaining restrictions on capital movements and the financial system only partially liberalized and the latter being a highly open economy with a sophisticated financial sector that was well integrated with the international financial markets. As expected, their results confirm that both domestic and foreign factors were important determinants of interest rates in Colombia but that only foreign factors seemed to matter in the case of Singapore. The results for Colombia suggested that the country was much more open than suggested by the actual system of controls. In the case of the results on the Zimbabwe data discussed above, one could perhaps argue that the re-imposed foreign exchange controls became much more effective than was suggested by the partial liberalization that had been initiated.

See appendix 2.1.
the case of Singapore. The results for Colombia suggested that the country was much more open than suggested by the actual system of controls. In the case of the results on the Zimbabwe data discussed above, one could perhaps argue that the re-imposed foreign exchange controls became much more effective than was suggested by the partial liberalization that had been initiated.

Although economic theory does not establish interest rates as causing inflation, concerns are often raised about simultaneously undertaking stabilization programmes and reforming interest rates. High interest rates were part of the RBZ’s policy arsenal to contain inflation. As discussed before, some critics of financial liberalization view increases in interest rates as raising costs of production and therefore being inherently inflationary.

Figure 7.2. Goodness of Fit for Nominal Interest Rates

Figure 7.3 Zimbabwe 3 months Treasury Bill rate and US 3 months Treasury Bill Rate Adjusted for exchange rate Movements.
b. Interest rates and money supply

As shown above, inertia, as represented by the lagged rate of interest, inflation and real money balances were the driving forces behind the high nominal rates of interest experienced in Zimbabwe after liberalization. A brief discussion of the mechanisms for the transmission of changes in money supply on interest rates is worthwhile. Interest rate shocks associated with financial liberalization lead to higher costs of credit intermediation. In the absence of a sound regulatory framework, these have given rise to distress borrowing, the accommodation of which spreads insolvency.

The two main transmission mechanisms for the effects of changes in money on interest rates are the Fisher identity discussed above and the Wicksell effect. The old debate between Keynesians and monetarists about the relative effectiveness of monetary policy hinged on their respective views about the interest rate elasticity of the demand for money being high and low respectively.\textsuperscript{178} In the Fisherian framework, the rate of growth of money supply affects the expected rate of inflation by affecting the actual rate of inflation.\textsuperscript{179} Equation 6.5 illustrates the formation of expectations in the Fisher model.

\[
\pi_t^e = \sum_{i=0}^{\infty} \lambda (1 - \lambda)^i \pi_{t-i} \tag{7.5}
\]

where \(\lambda\) is a parameter for weighting past values of inflation.

Other researchers confirmed the findings of long adjustment lags by Fisher (1930). However, some researchers found shorter lags than the average 10-year period found by Fisher. The implication of the slow adjustment is that the response of inflationary expectations to a permanent change are slow and depend importantly on the size of the parameter \(\lambda\). Similarly, nominal interest rates will adjust gradually to their new equilibrium level. Higher inflationary expectations trigger portfolio adjustment from financial to real assets. Consequently, the price of real assets increases while the real interest on financial assets falls as the demand for cash declines. Consequently, the increase in the nominal rate of interest may fall short of the increase in inflation.

\textsuperscript{178} This is discussed in Chapter 5.

\textsuperscript{179} The process depends on economic agents' discount rate for past inflation in formulating expectations and is therefore not instantaneous.
The demand and supply of real loanable funds is the basis of Wicksell’s model of the determination of the real interest rate. This is depicted in Figure 7.4. In this static framework, the natural rate of interest is the rate, which equates desired saving and investment. The initial and ephemeral effect of an increase in money supply is to increase the supply of real loanable funds. In the absence of changes in desired real saving and investment, the market (real) interest rate falls below the natural rate as shown by the intersection of the supply schedule for loanable funds that has shifted to the right and the unchanged investment schedule shown in the figure. However, the eventual upward price adjustment reduces the real value of cash balances and shifts the supply schedule of loanable funds back to the left as shown by the arrow in the diagram. This move restores the equilibrium between the market rate and the natural rate.

The two movements depicted in Figure 7.4 i.e. the rightward shift in the supply of loanable funds schedule and its reversion to equilibrium, operate simultaneously in a dynamic setting. To illustrate the impact of these interactions on the nominal rate of interest within the Fisherian and Wicksellian frameworks, assume that an economy is initially in equilibrium where the following hold:

i) zero growth in real income;

ii) actual growth in the stock of money is zero and equal to the expected growth in this variable (\(M^* = (M^*)^e = 0\));

iii) the expected rate of inflation is zero (\(\pi^e = 0\)) as a result of which;

iv) the nominal rate of interest equals the real rate of interest (\(i = r\)).

An unexpected shock in the form of \(x\) percent growth in the money supply will in terms of the Wicksell Effect, cause the real and nominal interest rate to fall. In the next phase, prices start to increase and via the Fisher Effect, raise the nominal interest rate. In the third phase, the stock of money supply will increase and in the process, eliminate the Wicksell effect. Abstracting from the impact of the price increase on the real rate of interest, equilibrium is restored when \(r\) reverts to its former value, if the expected inflation is \(x\) percent (\(\pi^e = x\) percent), then the nominal rate is equal to the real rate plus \(x\) percent

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180 This is before price adjustment to changes in money supply.
(i=r+x percent). These changes are illustrated in Figure 7.5, adapted from Carr and Smith (1972). If one accepts the above illustration, conclusions can be drawn that monetary changes have significant but temporary impact on real interest rates, the higher the inflationary expectations, the higher the increase in nominal interest rates and that interest rates adapt quickly to changes in the rate of inflation.

Figure 7.4. Demand and Supply of Real Loanable Funds

where,

\[ i = D_{LF} \]

\[ S = S_{LF} \]

\[ S = S'_{LF} \]

\[ S = S_{LF} \]

\[ i = D_{LF} \]

\[ S = S'_{LF} \]

where,

\[ i = \text{investment schedule} \]

\[ S = \text{savings schedule} \]

\[ D_{LF} = \text{demand for loanable funds} \]

\[ S_{LF} = \text{supply of loanable funds} \]
Figure 7.5. The Effect of Money on Interest Rates
c. Inflation and Seigniorage

The extraction of seigniorage is often suggested as one of the reasons for financial repression. Seigniorage refers to the amount of resources that a government obtains through the issuance of fiat money. Blanchard and Fischer (1989) note that seigniorage accounts for as much as 2 percent of GNP in low-inflation industrial countries and accounts for much more in high inflation and cash strapped developing countries. Obstfeld and Rogoff (1998) point out that most hyper-inflations stem from the government’s need for seigniorage revenue hence the concept is often discussed in the context of the Cagan model. Real seigniorage revenue (the real value of changes in the monetary base) in period t may be presented as:

\[ s = \Delta M_t / P_t = \sigma m \]

(7.6)

where \( \Delta M_t \) represents the change in nominal money supply between two periods, \( P_t \) is the price deflator to convert the flow into real resources accruing to the government, \( \sigma \) is the growth in money supply and \( m \) is the stock of real money balances. Seigniorage revenue comprises two parts, namely the real balance effect and the inflation tax effect. The former derives from the public’s willingness to hold the government’s financial liabilities while the latter derives from taxation of the outstanding stock of real balances through inflation. Following Obstfeld and Rogoff (1998), inflation tax proceeds can be presented as:

\[
\frac{M_{t-1}}{P_{t-1}} - \frac{M_{t-1}}{P_t} = \frac{P_{t-1}P_{t-1}}{P_t} \cdot \frac{M_{t-1}}{P_{t-1}}
\]

(7.7)

Equation 6.8 shows the two components of the revenue from seigniorage.

\[
s = \left( \frac{M_{t-1}}{P_t} - \frac{M_{t-1}}{P_{t-1}} \right) + \left( \frac{M_{t-1}}{P_{t-1}} - \frac{M_{t-1}}{P_t} \right)
\]

(7.8)

181 See table in Cukierman (1992, 84) which shows the relative importance of seigniorage and inflation as sources of revenue for both developed and developing countries. It shows that revenue from seigniorage and inflation are more important for developing countries.

182 Cagan studied seven hyperinflations for Austria, Germany, Hungary, Poland and Russia after World War I and from Greece and Hungary after World War II. He defined hyperinflations as periods during which the price level in terms of good in terms of money rises at an average rate of at least 50 percent per month.
The above equation means that seigniorage is the sum of inflation tax proceeds and the change in real money holdings. A stochastic discrete-time version of Cagan's model posits that the demand for real money balances \((M/P)\) depends entirely on the expected future price-level inflation and that higher expected inflation lowers the demand for real balances by raising the opportunity cost of holding money (Obstfeld and Rogoff, 1998). The Cagan model is a special case of the LM curve. While recognizing the standard demand for money function has output, interest rate and inflation as explanatory variables, Cagan contends that during hyperinflation, expected inflation overwhelms all other influences.\(^{183}\)

Some researchers discuss questions about how much revenue a government can obtain from money creation, what the seigniorage-revenue maximizing rate of inflation is, and whether high inflation can result from a government's attempt to collect seigniorage in order to finance a large budget deficit.\(^{184}\) There is a Laffer curve for seigniorage in the sense that such revenue eventually declines as inflation increases. Indeed the desire to collect seigniorage, especially by fiscally weak governments is a reason for imposing this form of financial repression. The collection of revenue through seigniorage can be viewed as a second best solution to weak tax administration. Figure 7.6 shows the relative size of the monetary base and the revenue from seigniorage in Zimbabwe. The annual average revenue from seigniorage revenue in percent of GDP for the periods 1975-80, 1981-90 and 1991-98 was 1.3, 1.5 and 1.62 percent respectively.

7.3 Studies of inflation in Africa

a. General

Given the structural features of developing countries, some of the above cited analytical frameworks for understanding inflation are more applicable in industrialized countries and less so in understanding the problem in former category of countries. As Killick and Sharpley (1984) observe, wage inflation is usually not a major source of

\(^{183}\) Following (Obstfeld and Rogoff, 1998), the Cagan, model of inflation can be written in a log-linear form as: 
\[ m^d_t = -\eta E_t[p_t+1 - p_t] \]
where \(m^d_t\) is the log of nominal money balances at the end of period \(t\), \(\eta\) is the semi elasticity of demand for real balances with respect to expected inflation \((E_t)\) and \(p\) is the log of the price level.

inflationary forces in developing countries where labour unions are weak and there is underemployment and surplus labour.

The evolution of wages in Zimbabwe during the first three years of independence and the emergence of a vocal trade union movement supported by the Government provides an example of a situation where wage push inflation was an issue. As a result of Government intervention, wages rose faster than the rate of increase in productivity but this was ephemeral as real wages began to decline from 1983 onwards. An econometric study by Chhibber et al (1989) for the period 1969-86 showed that changes in unit labour costs, changes in import prices, money supply, output and interest rate were the main determinants of inflation in Zimbabwe. The lack of data on unit labour costs is a common problem in many developing countries.\textsuperscript{185} Chhibber and Shafik (1990) also undertook a similar study on Ghana.

Figure 7.6. Zimbabwe. Base Money and Seigniorage in Percent of GDP

Many country specific studies have been criticized for being ad hoc and of limited general applicability.\textsuperscript{186} A number of multi-country studies of inflation in Africa have been

\textsuperscript{185} For Zimbabwe, Chhibber et al (1989) estimated the changes in unit labour costs by first estimating a real wage equation and assuming that real wages adjust to their desired level with a lag. The real wage is a function of productivity growth, which follows a time trend. Their results capture the fact that government intervention in wage setting had the effect of driving the rate of increase in real wages above the rate of increase in productivity, albeit for a short period.

\textsuperscript{186} See Odedokun (1995).
carried out. However, these also have their limitations when it comes to country specific recommendations. The range of variables included in the specifications used by the various researchers lends support to the case for the eclectic specification suggested above.

b. Studies of inflation in Zimbabwe

Notwithstanding some differences in the variables included in the various specifications for inflation, and the significance of inflationary expectations in the present study, the results shown below are consistent with the findings of other studies of inflation in Zimbabwe. Chhibber et al (1989) carried out the most comprehensive study of inflation in Zimbabwe. The other study is contained in an IMF background document on economic developments in 1993. The results from Chhibber et al (1989) indicate that changes in import prices, unit labour costs, money supply, output and the nominal interest rate were the main determinants of inflation in Zimbabwe during the period 1969-86. With the exception of money supply, all the variables were statistically significant. The signs of the coefficients were as expected but the nominal interest variable had a positive sign, suggesting the impact of the rising cost of capital on inflation. For businesses that are dependent on bank credit for their operations, an increase in nominal interest rates increases costs of operation, which in turn may be passed on to final consumers in the form of increased prices of products.

However, the specification in equation 6.1 that is used in the present study used real interest variable and picked up the positive effects of increases in real interest rates on the availability of loanable funds and the ultimately positive effects of this on output constraints which in turn reduce inflation. Moreover, the negative sign of the coefficient on the real deposit rate lends support to Shaw (1973), Galbis (1977), McKinnon (1973) and Fry (1981) that high deposit interest rates can be used to dampen inflation through the resulting increase in output. This is expected to work through increased output resulting from the increase in loanable funds that is fostered by higher real interest rates. Consistent with this, Ikhide (1993), estimated an equation for inflation for Nigeria, Ghana, Kenya and Tanzania over the period 1967-1990 and found the real interest variable to have a depressing effect on inflation. However, such results are contrary to the arguments put forward by Wijnbergen(1983) and other structuralists who view deposit rates as a cost of

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production, which is inherently inflationary. The specification used by Chhibber et al (1989) explained 79 percent of the variation in inflation. The IMF study found import prices and money supply both with expected signs, as the main determinants of inflation in Zimbabwe over the period 1976-91. Although the coefficient on income was consistent with theory, it was not statistically significant. The coefficient of determination was very high in this specification.

7.4 Results and Analysis of Inflationary Developments in Zimbabwe

The relatively low level of inflation experienced in Zimbabwe before 1990 is contrary to what one might have expected especially given the magnitude of the fiscal deficits. The explanation has to be in the nature of financing of the fiscal deficits, which was not inflationary and the wide ranging price controls that were enforced. Nonbank financial institutions such as pension funds and insurance companies provided finance for fiscal deficits and as indicated in Chapters 1 and 3 these institutions were subject to portfolio restrictions. Such financing was not inflationary in the way overdrafts from the RBZ and bank borrowing would be. The situation changed dramatically after the introduction of economic reforms in 1991. Figure 7.7 shows the log of inflation in relation to various determinants, all with normalized ranges and means.

Results and Discussion

Equation 7.1 is tested on annual Zimbabwe data for the period 1975-98 and both partial adjustment and error correction versions are tested. The results are presented in Table 7.2. Normality is rejected for the residuals in equation 1 but accepted for equations 2 and 3. For all the three equations, there is no evidence of residual autocorrelation, conditional heteroscedasticity and unconditional heteroscedasticity as shown in the detailed output and diagnostic tests in tables 6.2a, 6.2b and 6.2c. Furthermore, there is no evidence of functional forms of misspecification. Table 6.2d shows the descriptive statistics and the correlation matrix. The results of the partial adjustment specification shown as equations 1 and 2 in table 6.2 suggest that income (output measure) and the real interest rate variable have the expected negative signs. However, these variables are only statistically significant

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188 See Ikhide (1993) for a discussion of this issue.
in equations 2 and 3 where changes in the fiscal deficit Dfd and an error correction term (EC) are added respectively.

Figure 7.7. Normalized Means and Ranges of Logs of Inflation, Growth in GDP, Broad Money and Changes in Import Prices.

Lagged inflation (Dp_{1}), changes in the fiscal deficit, nominal broad money DM2 and import prices (Dpme) affect inflation positively. The lagged dependent variable is statistically significant at the 1 percent level while changes in the fiscal balance and broad money are statistically significant at the 5 percent level. Although it has the theoretically expected signs, the changes import prices variable is not statistically significant in any of the specifications. While statistically significant, changes in the fiscal balance have a small coefficient and lend weak support to the view that budget deficits were a major source of Zimbabwe's macroeconomic problems. To some extent, the changes in broad money also pick up some of the fiscal impact and thus suggest that the fiscal impact is greater than it appears from looking at the variable Dfd. Never the less, the combined effect of the fiscal balance and broad money is still overshadowed by the coefficient and statistical
significance of lagged inflation. The estimation deals with the 1990s when the major price controls had been removed in the spirit of economy wide liberalization. It appears that that once the initial price correction had kicked in as reflected by the sharp increase in inflation at the time of initiating reforms, the inflationary process became autoregressive and fed on itself and generated further inflation. Although the level of inflation in Zimbabwe could not be described as the Cagan type inflation, its behaviour as reflected in the empirical results is similar. As already adverted to in Chapter 5 when discussing the demand for money function, expected inflation overwhelmed all other explanatory variables. This appears to be also the case according the empirical results on the determinants of inflation in Zimbabwe.

The behaviour of inflation after what could be termed corrective behaviour as price controls were lifted in the early 1990s can be understood in terms of the notion of adaptive expectations. The issue revolves around the argument that economic agents form expectations of inflation on the basis of recently observed values and with the most recent observations having more weight. In simple terms, economic agents expect the rate of inflation in the current year ($\pi_t$) to be the same as last year ($\pi_{t-1}$) i.e.

$$\pi_t = \pi_{t-1} \quad 7.9$$

In more general terms expected inflation during a period is derived from observations of actual inflation in preceding periods i.e.:

$$\pi_{t-1}, \pi_{t-2}, \ldots, \pi_{t-n} \quad 7.10$$

The process incorporates a learning process whereby agents’ expectations take into account past errors as follows:

$$\pi_t^e = \pi_{t-1} + \beta (\pi_{t-1}^e - \pi_{t-1}) \quad 7.11$$

The coefficient $\beta$ is of critical importance and if it is zero then all the weight in the determination of the expected rate of inflation would be on last year’s rate of inflation as shown in equation 7.11. If $\beta = 1$, then this year’s expected inflation would be the same as last year’s expected inflation rate with the actual rate having no influence. The inflationary process has inertia in the sense of being akin to an object that is moving through space and will continue to move until something acts to stop it. A citation of Robert Solow by Mankiw (1992, 367) in describing the high inflation of the 1970s, articulates the notion of
inflation inertia well that it warrants repetition here. Solow is attributed to have said, "Why is our money ever less valuable? Perhaps it is simply that we have inflation because we expect inflation, and we expect inflation because we have had it". This means that the model of expected inflation is endogenous to the type of economy and the policy context in which it is formulated.¹⁸⁹

The output and the real interest variables have a dampening effect on inflation and show up with negative coefficients that are statistically significant at the 5 percent level. This is consistent with theoretical priors. The error correction term in equation 3 in table 7.2 is statistically significant and shows a high rate of adjustment (70 percent) of the departure from the equilibrium path. From equation 3 in table 7.2, one can conclude that the main determinants of inflation during the period indicated were the supply of nominal broad money, the real deposit rate, demand pressure, changes in fiscal deficit, import prices and lagged inflation.

¹⁸⁹ This forms the basis of the Luca critique the essence of which revolved around the Lucas' criticism of the macroeconomic models of the 1970s for their failure to take stock of the fact that rational individuals would change their behaviour when policy rules are changed. Fixed models of expected inflation were the particular target of Lucas' critique which has general applicability to the policy games.
Table 7.2. Inflation Equations

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Equation 1</th>
<th>Equation 2</th>
<th>Equation 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.004</td>
<td>0.017</td>
<td>-0.025</td>
</tr>
<tr>
<td>(t)</td>
<td>(0.086)</td>
<td>(0.391)</td>
<td>(-0.635)</td>
</tr>
<tr>
<td>DDP_1(t)</td>
<td>0.841</td>
<td>0.761</td>
<td>0.999</td>
</tr>
<tr>
<td></td>
<td>(3.798)**</td>
<td>(3.839)**</td>
<td>(5.363)**</td>
</tr>
<tr>
<td>DM2_1(t)</td>
<td>0.138</td>
<td>0.161</td>
<td>0.148</td>
</tr>
<tr>
<td></td>
<td>(1.541)</td>
<td>(2.027)*</td>
<td>(2.235)*</td>
</tr>
<tr>
<td>Dy(t)</td>
<td>-0.657</td>
<td>-0.979</td>
<td>-0.835</td>
</tr>
<tr>
<td></td>
<td>(-1.822)</td>
<td>(-2.887)*</td>
<td>(-2.853)*</td>
</tr>
<tr>
<td>rdr(t)</td>
<td>0.006</td>
<td>-0.006</td>
<td>-0.006</td>
</tr>
<tr>
<td></td>
<td>(-1.957)</td>
<td>(-2.514)*</td>
<td>(-2.992)*</td>
</tr>
<tr>
<td>Dfd(t)</td>
<td></td>
<td>0.015</td>
<td>0.012</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2.365)*</td>
<td>(2.00)*</td>
</tr>
<tr>
<td>Dpme(t)</td>
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<td>0.105</td>
<td>0.095</td>
</tr>
<tr>
<td></td>
<td>(1.676)</td>
<td>(0.855)</td>
<td>(0.921)</td>
</tr>
<tr>
<td>EC_1(t)</td>
<td></td>
<td></td>
<td>-0.701</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(-2.760)*</td>
</tr>
<tr>
<td>R²</td>
<td>0.603</td>
<td>0.712</td>
<td>0.813</td>
</tr>
<tr>
<td>σ</td>
<td>0.060</td>
<td>0.053</td>
<td>0.044</td>
</tr>
<tr>
<td>DW</td>
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<td>1.85</td>
<td>1.88</td>
</tr>
<tr>
<td>RSS</td>
<td>0.058</td>
<td>0.042</td>
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</tr>
<tr>
<td>Observations</td>
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<td>22</td>
<td>22</td>
</tr>
</tbody>
</table>

1/ One and two stars mean significance at the 5 and 1 percent levels respectively.
### Table 7.2.a EQ(1) Modelling DLCPI by OLS (using REVCPIA.in7)

The present sample is: 1977 to 1998

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std.Error</th>
<th>t-value</th>
<th>HCSE</th>
<th>PartR^2</th>
<th>Instab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.0041</td>
<td>0.04803</td>
<td>-0.086</td>
<td>0.0477</td>
<td>0.0005</td>
<td>0.67*</td>
</tr>
<tr>
<td>DLCPI_1</td>
<td>0.8411</td>
<td>0.2215</td>
<td>3.798</td>
<td>0.1905</td>
<td>0.471</td>
<td>0.64*</td>
</tr>
<tr>
<td>DLM2_1</td>
<td>0.1377</td>
<td>0.0894</td>
<td>1.541</td>
<td>0.1298</td>
<td>0.1292</td>
<td>0.43</td>
</tr>
<tr>
<td>DLy</td>
<td>-0.6565</td>
<td>0.3604</td>
<td>-1.822</td>
<td>0.3776</td>
<td>0.1718</td>
<td>0.05</td>
</tr>
<tr>
<td>rdr</td>
<td>-0.0056</td>
<td>0.0029</td>
<td>-1.957</td>
<td>0.0020</td>
<td>0.1931</td>
<td>0.56*</td>
</tr>
<tr>
<td>DLPme</td>
<td>0.2166</td>
<td>0.1292</td>
<td>1.676</td>
<td>0.1655</td>
<td>0.1494</td>
<td>0.25</td>
</tr>
</tbody>
</table>

\[ R^2 = 0.6032 \quad F(5,16) = 4.8651 \quad [0.0068] \quad \sigma = 0.0601 \quad DW = 1.52 \]

### Table 7.2.b EQ(2) Modelling DLCPI by OLS (using REVCPIA.in7)

The present sample is: 1977 to 1998

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std.Error</th>
<th>t-value</th>
<th>HCSE</th>
<th>PartR^2</th>
<th>Instab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
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<td>0.0433</td>
<td>0.391</td>
<td>0.0346</td>
<td>0.0101</td>
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<td>DLCPI_1</td>
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<td>0.1982</td>
<td>3.839</td>
<td>0.1244</td>
<td>0.4956</td>
<td>0.52*</td>
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<td>DLM2_1</td>
<td>0.1609</td>
<td>0.0794</td>
<td>2.027</td>
<td>0.1075</td>
<td>0.2149</td>
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<td>DLy</td>
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<td>rdr</td>
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<td>Dfd</td>
<td>0.0147</td>
<td>0.0062</td>
<td>2.365</td>
<td>0.0092</td>
<td>0.2715</td>
<td>0.17</td>
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</tbody>
</table>

\[ R^2 = 0.711 \quad F(6,15) = 6.1495 \quad [0.0020] \quad \sigma = 0.053 \quad DW = 1.85 \]

### Table 7.2.c EQ(3) Modelling DLCPI by OLS (using REVCPIA.in7)

The present sample is: 1977 to 1998

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std.Error</th>
<th>t-value</th>
<th>HCSE</th>
<th>PartR^2</th>
<th>Instab</th>
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</thead>
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<td>Constant</td>
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<td>0.0391</td>
<td>-0.635</td>
<td>0.0387</td>
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<td>DLCPI_1</td>
<td>0.9992</td>
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<td>0.6726</td>
<td>0.13</td>
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<tr>
<td>DLM2_1</td>
<td>0.1482</td>
<td>0.0663</td>
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<td>0.0683</td>
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<td>-2.853</td>
<td>0.3310</td>
<td>0.3677</td>
<td>0.24</td>
</tr>
<tr>
<td>rdr</td>
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<td>-2.992</td>
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\[ R^2 = 0.813 \quad F(7,14) = 8.6837 \quad [0.0003] \quad \sigma = 0.0441 \quad DW = 1.88 \]
Table 7.2 d. EQ(3) Descriptive Statistics

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<th></th>
<th>DLCPI</th>
<th>Constant</th>
<th>DLCPI_1</th>
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<th>rdr</th>
<th>Dlpme</th>
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<tbody>
<tr>
<td>Means</td>
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<td>Standard Deviations</td>
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<td>0.185</td>
<td>0.049</td>
<td>5.682</td>
<td>0.114</td>
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<td>0.046</td>
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</table>

Correlation matrix

<table>
<thead>
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<th></th>
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<th>DLCPI_1</th>
<th>DLM2_1</th>
<th>DLy</th>
<th>rdr</th>
<th>Dlpme</th>
<th>Dfd</th>
<th>EC_1</th>
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7.5. Summary of Issues

Inertia, as represented by the lagged rate of interest, inflation and real money balances were the driving forces behind the high nominal rates of interest experienced in Zimbabwe after liberalization. Furthermore, the regime change generated shocks for the financial system. The effects of expected devaluation are one possible explanation of the abnormally high real rates of interest observed in some countries after liberalization. Both the Fisher identity and the interest parity perspectives offer some guidance on the determination of interest rates since interest rates depend on domestic financial market conditions as well as on the expected rate of devaluation and world interest rates. Tests on the Zimbabwe data demonstrate a preponderance of domestic factors over foreign determinants of nominal interest rates during the period covered. The tightness of the exchange control regime, capital controls and the fact that it was illegal for residents to hold or acquire foreign currency denominated assets militated against the country's domestic financial market being integrated into world capital markets. It is shown that foreign interest rates as proxied by US treasury bill rates, had little impact on domestic interest rates, which actually moved in the opposite direction immediately after liberalization. This development can be taken as an indicator of the extent of misalignment prior to the regime change.

Regarding the transmission mechanisms for the effects of changes in money on interest rates, an analysis of the Fisher identity and the Wicksell effect leads to the conclusion that monetary changes have significant but temporary impact on real interest
rates. Interest rates adapt quickly to changes in the rate of inflation. Therefore, the higher the inflationary expectations the higher will be the increase in nominal interest rates.

The main determinants of inflation during the period indicated were the supply of money, the real deposit rate, output, and changes in fiscal deficit. These variables were all statistically significant and the signs of their coefficients are consistent with theoretical expectations. These results are consistent with the findings of other studies. The pricing structure was such that business could adjust fully their prices by the extent of exchange rate changes and this constituted some de facto indexation.

In terms of strategies to deal with the problem of inflation, some useful lessons can be drawn from the experience of some countries that achieved some success. Mid-stream abandonment of stabilization programmes undermines the credibility of policy makers. The emerging financing requirements of the budget deficits have undermined efforts to contain inflation. Policy credibility could be restored by strong fiscal measures. There is a case for an endogenous disinflationary impulse either from the supply side through increases in output or reductions in the public sector deficit as suggested by Chhibber et al (1989). Such a strategy seeks to break the inflationary spiral without inducing further distortions in the form of real appreciation of the exchange rate or increased subsidies to the economy.

While the additional anchors such as wage and price controls may be successful in breaking inflation inertia in the short term, their benefits can be outweighed by the resulting distortions to relative prices. Most of the successful cases have tended to rely on exchange rate based systems. However, these strategies are risky when policy credibility is lacking and under those conditions money based programmes may be less risky. Attempting to pursue a disinflationary policy while maintaining a given level of the real exchange rate is likely to be self-defeating (Calvo and Vegh, 1992).
CHAPTER 8: SUMMARY AND CONCLUSIONS

This thesis has assessed Zimbabwe's experience with financial liberalization and monetary management against the backdrop of stylized facts and the policy makers' objectives. Chapter 2 presented selected theoretical issues most appropriate to the task at hand, Chapter 3 examined the institutional framework of the financial sector and monetary policy before liberalization, Chapter 4 examined the specific financial reforms and the changing monetary policy framework in Zimbabwe. Chapters 5 to 7 contain the empirical analysis of issues pertaining to the stability of the demand for money and the implications for policy, the effects of liberalization on savings, investment and growth and the underlying causes of inflation and high interest rates.

From Zimbabwe's experience and the experiences of other countries that are summarized in appendices 2.1 and 2.11, one can draw a few common themes that emerged. Useful as these themes may be, care should be taken not to generalize and present them as policy packages that can work in all situations. No such panaceas exist since the outcomes of liberalizations efforts depend on individual country circumstances. Nonetheless, useful lessons can be drawn from the recurring themes a few of which are restated below.

- Countries, which deregulated interest rates and eliminated credit controls early in their programmes, experienced significant financial deepening but some lost control over domestic financial aggregates;

- Financial sector problems may undermine the effectiveness of monetary policy, set off or aggravate economic contractions, distort financial intermediation, lead to large financial costs and worsen macroeconomic imbalances;

- The effectiveness of indirect instruments is often hampered large financing requirements of budgets. Damaging policy reversals could be averted by preceding the adoption of indirect instruments of monetary policy with the requisite institutional support and policies;

- Liberalization under high and volatile inflationary conditions can lead to an overshooting of both nominal and real interest rates and trigger distress borrowing.
Debt intermediation characterized by mismatching of funds exposes highly leveraged firms to economic downturns and increases in interest rates; and

- While there are divergent views on the pace and timing of reforms, there is a consensus that macroeconomic stability, appropriate sequencing of reforms, a strong regulatory and supervisory framework are important requisites for successful financial liberalization.

Current notions of financial liberalization go beyond the initial preoccupation with making real interest rates positive. The process additionally entails market orientation of a wide range of financial services in a way that reflects risk, maturity and costs of financial instruments; institutional enhancements especially with respect to legislation and supervision; and the adoption of indirect instruments of monetary policy. The focus has shifted from concerns with quantities of resources channelled through financial institutions to the ways in which the financial system can allocate resources to generate higher rates of return. Such a focus is consistent with development strategies where the private sector is the driving force for economic development and there is a scaling back of the state sector. However, eliminating financial repression without undertaking fiscal reforms not only to compensate for lost revenue but to reduce the size of the domestic public debt may result in extraordinarily high real interest rates which are just as damaging as financial repression. The objective to enhance the financial intermediation role of banks may be weakened by monetary policy actions to contain inflation. In Zimbabwe, monetary policy not only failed to contain inflation which seemed to feed on itself but also contributed to recession and exacerbated bankruptcy.

Notwithstanding economists' divergent views on the relationship between the financial sector and the real economy, notions that the financial sector automatically responds to economic activity or that it is an inconsequential addendum to it are no longer tenable. It is generally agreed that financial repression leads to various forms of distortions. In Zimbabwe, the distortions included: interest rate ceilings which led to negative real interest rates and credit rationing; directed lending, which led to inefficient resource allocation and market fragmentation; and exchange controls and a foreign exchange allocation arrangement, which effectively became the central element of credit rationing. In line with the general features of financial repression described above, the controlled
interest rates were negative in real terms. Low effective demand for credit and exchange controls contributed to the large excess reserves that were held by the banks. With excess reserves, banks over-fulfilled the statutory requirements to invest prescribed proportions of their portfolios in government paper. The Government obtained seigniorage revenues through controlled and below market interest rates.

Many studies have examined the channels through which the financial sector affects and is affected by economic developments. The main empirical work seeking to establish the relationship between financial liberalization and economic growth has focused on the components of the transmission mechanisms suggested by the financial repression hypothesis of MS. These are real interest rates and saving; credit availability and investment; and the relationship between real interest rates and the productivity of investment. The MS position is that financial liberalization has a positive effect on the rate of economic growth in both the short and medium runs. As pointed out in Chapter 2 the responsiveness of savings to changes in interest rates consist of the income and substitution effects. The net effect is ambiguous.

Prior to liberalization, Zimbabwe had a fairly developed financial sector the operations of which were circumscribed by the trade and exchange regime existing at the time. The financial institutions had a number of inter-linkages that were inimical to meaningful competition among them.

As indicated in Chapter 1 the Zimbabwean authorities’ objectives for monetary policy within the liberalization context were to contain inflation to single digits and maintain a stable and market determined exchange rate. The secondary market for government securities was to be strengthened with a view to enhancing the use of indirect instruments of monetary control. Trading in government and other commercial paper was to be opened up to wider participation. The adoption of indirect instruments of monetary control was predicated on a successful reduction of the budget deficit and domestic public debt. Interest rates were to be liberalized and kept positive in real terms, with a view to improving financial intermediation and savings and investment. The complete liberalization of interest rates was to be gradual and to coincide with the switch to indirect instruments of monetary control and 1995 was set as the target date for completion.
Open market operations were to become the main instrument for money market intervention to influence monetary aggregates and interest rates. It was expected that the government would abandon the policy of setting rates on government stock in favour of market-determined interest rates. Competition was to be fostered among financial institutions and through it, spreads between lending and savings interest rates were to be narrowed. Barriers to entry were to be gradually removed and market segmentation was to be eliminated by unifying reserve requirements and applying uniform regulations for similar banking activities. Wider branch networks were to be encouraged in order to deepen financial intermediation. New legislation was to be enacted to guide the emergence of new money market instruments and financial services and to set and strengthen the regulatory and supervisory framework.

To the authorities' credit a number of measures on their financial liberalization agenda were adopted despite subsequent reversals that have been described. In particular, most interest rates were freed in 1991 and remained positive for some time. Taking advantage of an existing infrastructure, open market type operations became the main instrument of monetary policy and initiatives were taken to develop the secondary market. The reforms of the trade and exchange regimes included the introduction of foreign currency deposit accounts for residents, the removal of exchange controls, acceptance of Article VIII of the IMF and opening up the financial system to new entrants. Most of the liberalization measures involving the regime change in interest rates were concentrated in the early stages of the reforms (1991-92). The rest of the measures were to be implemented within the period 1991-95. Practical realities dictated otherwise, the process was drawn out before being jettisoned as the political and economic situation deteriorated.

Notwithstanding the early success in the adoption of measures, the Zimbabwe authorities under-performed with respect to their stated objectives. The maintenance of real positive interest rates was short lived; budget deficits and domestic public debt increased; market segmentation in the financial sector was not eliminated; efforts to improve the regulatory framework and adopt new banking legislation were ever so phlegmatic; inflation soared; the RBZ was left without instruments for liquidity management; the financing requirements of the budget required a large volume of treasury bills and overdrafts from the RBZ; and worst of all most of the measures initially adopted were reversed. Some distortions continue to exist and these are mostly due to the differential treatment of financial institutions with respect to reserve requirements, areas of activity, taxation and
ceilings on some interest rates and the use of high and unremunerated legal reserve requirements which are an implicit tax on financial intermediation.

Financial liberalization in Zimbabwe became associated with: sharp and volatile increases in nominal interest rates inflation; collapse of the exchange rate; non-convergence of domestic and international interest rate; wide domestic interest rate spreads; distress borrowing; collapse of some financial institutions; weaknesses in the regulatory and supervisory framework; increased reliance on overdrafts and financing from the banking system by the government and the consequent surge in domestic debt; and loss of control on monetary aggregates.

The history of monetary policy in Zimbabwe is replete with frequent recourse to ad hoc measures and policy reversals. The acquisition of foreign securities and the suspension of current account payments in 1983; the introduction of foreign currency accounts, their suspension and reinstatement; measures adopted to contain the currency crisis of November 1997; and further measures adopted in August 2000 illustrate the inherent tendency to resort to ad hoc measures without taking stock of the potential distortions they entail. These actions reintroduced distortions in the financial and other sectors. For example the measures that were introduced in August 2000 included: an immediate reduction of the bank rate from 73.7 percent to 61.4 percent; a concessional export finance facility; the release of 50 percent of the legal reserve requirements for on-lending to exporters at a concessional rate of interest (30 percent); the reintroduction of foreign currency accounts for gold producers; and a belated 24 percent devaluation of the local currency which had been held at US$1=Z$38 under a 19-month gentlemen’s agreement that was administered by the Bankers Association. A new gentlemen’s agreement was put in place to enforce the new exchange rate peg and it suffered the same fate of non-compliance because the devaluation did not eliminate the premium in the black market.

The empirical work in this thesis falls into three broad themes. First is the test of the tenets of the financial repression paradigm of MS through a limited regression analysis

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190 See “The Daily News of August 4, 2000 and the The Independent of August 11, 2000 for details. The concession to allow banks to lend 50 percent of their reserve requirements albeit at subsidized rates to exporters, amounts to some remuneration of these reserves.
of the impact of interest rate changes on saving and investment, and the use of various financial sector ratios. The latter facilitates the making of some inferences on issues such as spreads, competition, and financial deepening. Second is analysis of the demand for money function and the use of recursive graphics to establish its stability or otherwise. Third and finally is the analysis of the factors underlying the inflationary developments and the high interest rates experienced in Zimbabwe.

Subject to appropriate caveats about degrees of freedom, the empirical work yields results on the basis of which inferences about the impact of financial liberalization can be made. The improvements in savings and investment cannot be unambiguously attributed to the change in interest rates. While the real interest variable appears with the right signs, the results on interest rate elasticity of savings using both the national accounts concept of savings and financial saving lend only weak support to the tenets of the financial repression thesis. Although the interest elasticity of savings was low and statistically insignificant, the initial changes in the interest rate regime appears to have led to some shift in the composition of financial assets in favour of time deposits at least until inflation became a major problem. In addition to the changes in interest rates the initial shifts in portfolio composition could also be attributed the restoration of confidence in the economy and the banking sector at independence in 1980. However, no notable quantum increase in savings could be associated with these portfolio shifts. These findings are consistent with empirical results in other countries.

Even though interest rates were low prior to financial liberalization, the use of quantitative controls and strict exchange controls led to an excess supply of loanable funds as reflected by high levels of liquidity in the banking system prior to 1991. The financial system held excess liquidity a major contributor to which were the forced foreign savings which could not be repatriated under the extant exchange controls. Due to the exchange control regime and capital controls, a sizeable amount of forced foreign savings emerged in the form of blocked dividends, profits and capital of foreign companies. These contributed to the high levels of liquidity in the banking system. With financial liberalization, the financial problem in Zimbabwe initially changed from one of foreign exchange constraints to credit constraints and in time, both constraints were binding.

While limited, the specification for economic growth in Chapter 6 highlights the impact of changes in real interest rates on growth. The coefficient on real interest rate is
positive and consistent with theoretical expectations but it is not statistically significant and thus does not lend strong support for the MS hypothesis. Changes in financial deepening and credit availability are found to be statistically significant determinants of growth and investment respectively. This appears to be consistent with the tenets of the MS hypotheses about the impact of increased financial resources on investment and growth. However, the existence of high levels of liquidity in the banking system prior to the reforms negates this interpretation. A more plausible interpretation is that the results reflect improvements in the availability of foreign exchange.

In the pre reform era, a major portion of the demand for credit was synonymous with foreign exchange availability in that whoever had access to foreign currency allocations could readily obtain bank credit. The increased availability of credit reflects the banking system's ability to meet hitherto pent-up demand for credit and in the Zimbabwe context this means increased availability of foreign exchange, the allocation procedures of which were a de facto credit rationing device. The credit availability variable captures the situation of foreign exchange constraints before financial liberalization as well as credit squeeze after liberalization. It can be inferred that investment was not constrained by the availability of savings. In other words, credit availability did not depend on the level of savings firstly because the banking system was awash with liquidity and could fund any sound investment project and secondly because bank lending operations are not necessarily constrained by their deposit bases.

The coefficient on the real interest rate variable in the equation for investment is positive and statistically insignificant. This is inconsistent with the expectation that higher real deposit rates reflect higher cost of capital the effect of which would be negative on investment. Taken together with the coefficient on credit availability, this may simply reflect that it is credit availability rather than cost which is more important. Although most of the coefficients on the variables are correctly signed, only credit availability has a statistically significant impact on investment and supports the view that improved financial intermediation in the form of increased credit availability promotes investment. The apparent importance of credit availability suggests that structural changes in the financial system to improve intermediation may be more important in the early stages of removing financial repression. However, the cost of credit becomes a major issue as interest rates rise as is typical in many situations of liberalization.
The regime change arrested the declining trend in financial intermediation albeit for a short period. There was an ephemeral shift in the relative share of domestic credit going to the private sector compared to the public sector. This suggests some respite in the potential crowding out of the private sector. As already noted, the improvements observed in savings and investment cannot unambiguously be attributed to financial liberalization. Increased availability of foreign exchange and the return of confidence are strong explanations to increased investment in a hitherto foreign exchange constrained economy.

With respect to the demand for money, the estimated coefficients on, inflation, error correction terms, the dependent variable and some dummies had the theoretically expected signs and were statistically significant in specifications for narrow and broad money. The interest rate variable was significant in the specification for narrow money but not significant in the broader aggregate where changes in inflation had a dominant influence. Although the coefficients of the income variable and nominal interest rate had the expected signs, they were statistically insignificant suggesting the dominance of inflation and other factors. The long run income elasticity was found to be quite high especially for broad money but not out of accord with findings in other developing countries.

Other opportunity cost variables such as exchange rate changes, treasury bill rates, and foreign interest rates also proved statistically insignificant but with the expected signs. Currency substitution was not picked up in the specifications despite the opening up and allowing of foreign currency account holdings by firms and individuals in 1994. This is also borne out by the time series data on foreign currency deposits reported in Chapter 4. A higher income elasticity of the demand for broad money suggests the importance of portfolio considerations for holding components of the broader monetary aggregate as opposed to the domination of transaction considerations in the narrow aggregate.

Both specifications of real narrow and broad money balances exhibited some stability as reflected by the Chow tests for parameter constancy in the selected sub-periods. However, the experience of the Reserve Bank in trying to monitor reserve money leads one to conclude that a strategy of monitoring several aggregates at the level of the balance sheet as well as at a broader level of aggregation is better. The impact of capital inflows depends on the extent to which monetary authorities are able to manipulate the domestic components of the monetary base in order to offset them and so control the growth in the monetary base. The problems experienced by the RBZ in controlling monetary aggregates were not so much to do with the impact of the policy regime change as with the pursuit of
conflicting objectives and delayed corrective measures. One lesson that comes out of this is that it is important that policy makers avoid inconsistent policy positions e.g. a lax fiscal policy and a nominal exchange rate anchor. Timing of corrective policy measures is also of the essence.

Regarding the transmission mechanisms for the effects of changes in money on interest rates, an analysis of the Fisher identity and the Wicksell effect leads to the conclusion that monetary changes have significant but temporary impact on real interest rates, the higher the inflationary expectations, the higher the increase in nominal interest rates and that interest rates adapt quickly to changes in the rate of inflation.

Inertia, as represented by the lagged rate of interest, inflation and real money balances were the driving forces behind the high nominal rates of interest experienced in Zimbabwe. The regime change generated shocks for the financial system. The effects of expected devaluation are one possible explanation of the abnormally high real rates of interest observed in some countries after liberalization. Both the Fisher identity and the interest parity perspectives offer some guidance on the determination of interest rates since interest rates depend on domestic financial market conditions as well as on the expected rate of devaluation and world interest rates. The results in Chapter 7 demonstrate a preponderance of domestic factors over foreign determinants of nominal interest rates in Zimbabwe. It is shown that foreign interest rates as proxied by US treasury bill rates, had little impact on domestic interest rates, which actually moved in the opposite direction immediately after liberalization. This development can be taken as an indicator of the extent of misalignment prior to the regime change. The tightness of the exchange control regime, capital controls and the fact that it was illegal for residents to hold or acquire foreign currency denominated assets militated against the country's domestic financial market being integrated into world capital markets.

Contrary to expectations, financial liberalization did not lead to integration of the domestic capital market with international capital markets even after the current account was made convertible and some capital account restrictions eased. Arbitrage conditions might have been expected to ensure international interest parity and the integration of domestic financial market to international markets. Instead the spread between LIBOR and domestic commercial lending rates remained high, as did the domestic spreads. The non
convergence of domestic interest rates shows the dominance of domestic monetary factors in the evolution of interest rates in Zimbabwe as shown in Chapter 7. A partial explanation of this development could be the fact some restrictions were maintained on the capital account and that the expectation of a devaluation was greater than zero.

Lending interest rates are also shown to have been sticky as reflected by wide spreads between lending and deposit rates. In addition to the sources of the gap discussed (high reserve requirements, loan loss provisions and operating costs) in preceding chapters, competition does not appear to have been strong in Zimbabwe’s segmented financial markets. The pre-liberalization levels in spreads might have been easy to explain away in terms of the oligopolistic structure of the banking sector and the absence of new entrants. In the circumstances, it can be surmised that that new entrants had little impact on the level of competition in some of the segmented capital markets. It also appears that the financial market could be described as uncontestable.

The main determinants of inflation were the supply of money, past inflation, import prices, the real deposit rate, output, and changes in fiscal deficit. While statistically significant, changes in the fiscal balance do not seem to fully pick up the fiscal impact, which can be inferred from the financing arrangements discussed in Chapter 4. However, taken together with broad money it appears that the significance of the fiscal impact was higher than suggested albeit much lower than the impact of the autoregressive propagation of inflation. It appears that that the removal of price controls lifted the lid on inflation as reflected by the surge in the early 1990s. hence forth inertia took over and overwhelmed other influences on inflation. The pricing structure was such that business could adjust fully their prices by the extent of exchange rate changes and this constituted some de facto indexation.

In terms of strategies to deal with the problem of inflation, useful lessons can be drawn from the experience of some countries that were successful. Mid-stream abandonment of stabilization programmes undermines the credibility of policy makers. There is a case for an endogenous disinflationary impulse either from the supply side through increases in output or reductions in the public sector deficit. The strategy is to break the inflationary spiral without inducing further distortions.
While the additional anchors such as wage and price controls may be successful in breaking inflation inertia in the short term, their benefits can be outweighed by the resulting distortions to relative prices. Most of the successful cases have tended to rely on exchange rate based systems. It has to be noted that exchange rate pegs that are maintained through controls rather than the adoption of appropriate monetary and fiscal policies induce distortions. However, these strategies are risky when policy credibility is lacking and under those conditions money based programmes may be less risky.

In Chapter 4 it was argued that financial reforms were far-reaching but were undermined by the lack of progress in other policy areas. Real interest rates initially became positive but were negative again by 1998. As judged by indicators of financial deepening, financial intermediation improved somewhat but the size of both domestic and international interest rates spreads increased sharply before narrowing marginally. The continuation of wide spreads in domestic interest rates can be explained by the enduring oligopolistic structure of the banking system, macroeconomic shocks caused by a series of droughts which in turn contributed to a deterioration in the quality of loan portfolios necessitating increased loan loss provisions and high unremunerated legal reserve requirements. While they were allowed to adjust to market conditions, some interest rates were not completely free and some forms of asset prescription still applied to some nonbank financial institutions. Furthermore, some deposit taking institutions remained exempt from legal reserve requirements and this validated complains that the financial sector was not a level playing field.

The surge in interest rates adversely affected the operations of companies and this in turn affected the banking system. There appears to have been a considerable amount of distress borrowing as companies struggled to service high interest costs of their borrowing. To date, many companies are reported to have closed down because of financial problems and uncertainty.

Progress has been slow in improving and strengthening the supervisory and regulatory framework of the financial system. The financial sector was unsettled by the experience of the United Merchant Bank and the Zimbabwe Building Society. Recent newspaper reports and the issuance of corrective orders by RBZ indicate that a few more financial institutions have problems of systemic significance. Bailing out the failed institutions could mean that such institutions, benefit from an unfair bet against the government. This is because such banks would have benefited from any extraordinary
profits from their operations but without the constraint of having to pay the social costs of large losses from their risky operations. The problems that arose from failed banking institutions could have been averted if the changes in the banking had been effected in a timely fashion. The Banking and RBZ Acts were only approved in 2000. The latter bill strengthened the regulatory and supervisory role of the RBZ.

The 1999 annual report of the Banking Supervision Department of the RBZ reported that all the financial institutions except one commercial bank and one merchant bank complied with capital adequacy requirements. Five corrective orders were given to banks to ensure their safety for the public. This underscores the shortcomings of the regulatory and supervisory framework under which the financial system has operated in the past. The new Banking Act statutes provide for the establishment of a deposit protection fund, which is to be administered by the Deposit Protection Board. The establishment of such a scheme especially in a troubled financial sector may compound problems.

A more active monetary policy stance and the use of indirect instruments have characterized the post liberalization period. Despite this general thrust, the policy has been subject to reversals and the use of open market operations for liquidity management has been constrained by the rising domestic debt and the lack of separation between paper for liquidity management and that for government financing. Furthermore, the market for treasury bills has not been allowed to clear. The financing requirements of the government have increasingly become large and increasing volumes of treasury bill issues and overdrafts have been the main methods of financing (Figure 4.6).

The RBZ found itself in the in the odd position of attempting to tighten monetary policy through high interest rates and frequent changes in reserve requirements among others but without significantly halting the inflation spiral. The objectives of containing inflation to single digits and restoring macroeconomic stability were not been achieved. Liquidity management was undermined firstly by the non-sterilization of proceeds from treasury bill sales meant for liquidity management, secondly by the generally high levels of liquidity among financial institutions and thirdly by the lack of securities with which to conduct open market operations as government financing absorbed all the available paper. The target of keeping the real discount rate around two percent was exceeded and it had negative consequences for economic activity. The RBZ reduced access to its window and now appropriately acted as the lender of last resort and not of first resort as was the case before. Prior to such a change, the RBZ was vulnerable to being arbitrated and used as a
source of funding for the weak banks' acquisitions of treasury bills (the finest paper on the market) at a time when virtually all banks played the money market and were not engaged in any lending activities. Policy reversals and delayed policy reactions as typified by the RBZ's experimentation with targeting various operational instruments such as net domestic assets of the central bank, real interest rates and reserve money have undermined credibility.

Another source of the problems has to do with the setting up of multiple operational targets for monetary policy. As indicated in Chapter 5, the RBZ sought to target real interest rates and the real exchange rate. As it should have been, there was a shift between operational targets such as international reserve accumulation, net domestic assets of the RBZ, reserve money, real interest rates and growth in broad money. However, the intended targets were not hit and some of the switching was not timely. There are inevitable trade-offs among multiple goals and operational targets of monetary policy, which have to be, solved one way or another. In the debates on the interest rate versus the monetary channel of monetary policy, most central banks have in the 1990s gravitated towards the former as a favourite operating target. This followed the experiences of the 1980s when the direct targeting of monetary aggregates increased both the level and volatility of interest rate. This seems to suggest that the main sources of fluctuations have been perceived to be in the money market. The standard IS/LM framework was used in Chapter 4 to show that interest rate targeting is better if shocks occur in the LM curve and that there is a case for monetary targeting if fluctuations originate from the goods market.

The main monetary policy objective was to keep inflation low by maintaining the internal and external value of the currency. The intermediate policy targets were money supply, credit aggregates, interest and exchange rates. Reserve money and short-term interest rates were the main operating targets. Although there was an initial shift to indirect instruments, moral suasion remained an important part of the policy arsenal. The main policy instruments fall into two categories: a) those deployed at the initiative of the RBZ and b) those invoked at the initiative of individual banks and at pre-announced rates. Those deployed at the initiative of the RBZ include open market operations (OMO), change in reserve requirements and repurchase agreements (repos). Those effected at the initiative of individual banks and at pre-announced rates are standing facilities, discount window operations and the overnight accommodation facility.
Liquidity management or lack thereof has been a particular challenge for the RBZ. The financing needs of the budget have marginalized the scope for the use of open market operations as the main instrument for conducting monetary policy. On the other hand, the large volume of treasury bill issues to finance the budget have contributed to the further widening of deficits because of the interest costs of these treasury bills. Despite some reversals, monetary policy was tightened as reflected by the high legal reserve requirements, high discount rates. However, the effectiveness in reducing inflation has been unimpressive gave credence to the view that a tight monetary policy can lead to a recession.

The crux of the problem was the lack of political commitment to the necessary reforms. A central component of corrective measures would revolve around a stabilization program backed fiscal prudence that is devoid of printing of money and accumulating debt. The Zimbabwean authorities are clearly aware of this because they made the successful adoption of indirect instruments of monetary policy contingent on the reduction of fiscal deficits and domestic debt. Although a detailed analysis of Zimbabwe's fiscal problems is beyond the scope of this thesis, the increasing financing requirements of the budget are illustrated by the increasing resort to advances from the RBZ and the increasing volume of treasury bill issues (Figure 4). As argued in Chapter 2, large public sector borrowing requirements impinge on the effectiveness of the transition to indirect instruments of monetary policy. In Zimbabwe, the increasing financing needs of the budget crowded out the amount of securities available for liquidity management. Questions can also be raised on the appropriateness of using treasury bills for liquidity management. A more prudent approach could focus on using short-term instruments such as repos for liquidity management while fostering the development of secondary markets through various maturities of treasury bills.

The conditions necessary for the success of an inflation-targeting framework are generally absent and difficult to attain in developing countries. The ability to carry out an independent monetary policy that is free from fiscal abuse and strictures of other nominal anchors such as the exchange rate is one example of such conditions. Given the prevalence of the fiscal abuse of central banks, aspiring towards the inflation-targeting framework may be helpful even in the context of developing countries. It could reasonably be argued that the RBZ has been subject to fiscal abuse.
The incidence of financial sector problems has been widespread among countries at different stages of development. Despite the fact that unsuccessful financial liberalization experiences have led to some doubts and hesitation about the process, the case for financial liberalization is strong as the experiences of many countries and the general movement towards financial liberalization in both developed and developing countries attest. However, this is not to suggest that financial liberalization under any circumstances is better than no liberalization at all. The problems that have arisen in some countries appear to be associated with the macroeconomic context, the timing and sequencing of the measures rather than with the concept itself. In Zimbabwe, problems arose from deteriorating macroeconomic conditions, frequent policy reversals and the prevalence of control mentality of the pre liberalization era.

Despite all the measures initial taken to liberalize the financial sector Zimbabwe's experience with monetary management has not been a positive one. Given that Zimbabwe is considered to have had a relatively more developed financial system relative to similar countries in SSA, could one generalize Zimbabwe’s experience to suggest that such countries cannot use indirect instruments of monetary policy? It is true that monetary policy was overburdened and it did not succeeded in reducing inflation. However, the peculiarities that brought about these problems can not be generalized. Frequent policy reversals and the general lack of political commitment to reforms were inimical to the success of financial liberalization. In particular the release of 50 percent of the pooled value of all merchant and commercial bank reserves not only further undermined liquidity management, but also re-introduced distortions through interest rate subsidies in the financial market. This resulted in the re-establishment of the very conditions that financial liberalization had sought to correct. It is clear that financial liberalization has to be viewed as a continuous process that requires continuous adaptation of the regulatory framework to safeguard stability and confidence.

**Issues for further research**

Many financial sector issues continue to confound Zimbabwean policy makers and thus warrant further research. Among the list could be the following: domestic debt management and the challenges of unsterilized treasury bill issues and RBZ overdrafts; impact of high interest rates on the balance sheets of highly leveraged firms and on economic activity as well as the associated incidence of distress borrowing; factors
underlying the wide interest rate spreads, the stickiness of domestic lending interest rates and features of the segmented markets. If one were to rank these few issues in terms of priority, the problem of domestic debt would probably be the most urgent. The rate at which domestic debt has been accumulating as well as the costs of servicing it and the implications for monetary policy are sources of concern for policy makers. For example it increased from Z$6.7 billion in 1990 to Z$111.1 billion by mid 2000. Central to this rate of accumulation were overdrafts and treasury bill issues. Debt management is central to the successful adoption of indirect instruments of monetary policy and restoration of fiscal rectitude.
DATA APPENDIX

DATA SOURCES AND LIST OF VARIABLES USED IN REGRESSIONS

The data are derived from the IFS, Reserve Bank of Zimbabwe Publications and WEO data bases.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Source</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sy</td>
<td>domestic saving as a ratio of GDP</td>
<td>IFS</td>
<td>A</td>
</tr>
<tr>
<td>ryg</td>
<td>Growth in real GDP</td>
<td>IFS</td>
<td>A</td>
</tr>
<tr>
<td>ig</td>
<td>Gross fixed capital formation by Government as a</td>
<td>IFS</td>
<td>A</td>
</tr>
<tr>
<td>Fsy</td>
<td>Foreign savings as a ratio of GDP</td>
<td>IFS</td>
<td>A</td>
</tr>
<tr>
<td>Rdr</td>
<td>Real deposit rate-nominal rate adjusted for inflation</td>
<td>IFS</td>
<td>A,Q</td>
</tr>
<tr>
<td>Psy</td>
<td>Private saving as a ratio of GDP</td>
<td>IFS</td>
<td>A</td>
</tr>
<tr>
<td>B</td>
<td>Inflation</td>
<td>IFS</td>
<td>A,Q</td>
</tr>
<tr>
<td>Fs</td>
<td>Financial savings</td>
<td>IFS</td>
<td>A,Q</td>
</tr>
<tr>
<td>lp</td>
<td>Private investment as a ratio of GDP</td>
<td>IFS</td>
<td>A</td>
</tr>
<tr>
<td>Fd</td>
<td>Financial deepening</td>
<td>IFS</td>
<td>A</td>
</tr>
<tr>
<td>Crpy</td>
<td>Bank credit to the private sector as a ratio of GDP</td>
<td>IFS</td>
<td>A</td>
</tr>
<tr>
<td>rm1</td>
<td>Log of real narrow money balances</td>
<td>IFS</td>
<td>Q</td>
</tr>
<tr>
<td>rm2</td>
<td>Log of real broad money balances</td>
<td>IFS</td>
<td>A,Q</td>
</tr>
<tr>
<td>P</td>
<td>Log of price index</td>
<td>IFS</td>
<td>Q</td>
</tr>
<tr>
<td>Y</td>
<td>Log of real GDP</td>
<td>Derived</td>
<td>Q</td>
</tr>
<tr>
<td>r3m</td>
<td>Interest rate on months deposits</td>
<td>IFS</td>
<td>Q</td>
</tr>
<tr>
<td>Tb</td>
<td>Treasury bill rate</td>
<td>IFS</td>
<td>Q</td>
</tr>
<tr>
<td>Br</td>
<td>Bank rate</td>
<td>IFS, RBZ</td>
<td>Q</td>
</tr>
<tr>
<td>LXND</td>
<td>Log of index of the exchange rate</td>
<td>IFS</td>
<td>Q</td>
</tr>
<tr>
<td>id=tb</td>
<td>Domestic treasury bill rate</td>
<td>IFS</td>
<td>Q</td>
</tr>
<tr>
<td>Afri</td>
<td>Interest rate on 3 months US treasury bills</td>
<td>IFS</td>
<td>Q</td>
</tr>
<tr>
<td>Mbase</td>
<td>Monetary base</td>
<td>IFS</td>
<td>A, Q</td>
</tr>
<tr>
<td>DLCPI</td>
<td>Change in the log of the CPI index</td>
<td>IFS</td>
<td>A, Q</td>
</tr>
<tr>
<td>Dly</td>
<td>Change in the log of real income</td>
<td>IFS</td>
<td>A, Q</td>
</tr>
<tr>
<td>DLrm2</td>
<td>Change in the log of real broad money balances</td>
<td>IFS</td>
<td>A, Q</td>
</tr>
<tr>
<td>Dlpme</td>
<td>Change in the log of the index for import prices</td>
<td>WEO</td>
<td>A</td>
</tr>
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</table>

A = annual, Q = quarterly
<table>
<thead>
<tr>
<th>Country</th>
<th>Korea</th>
<th>Malaysia</th>
<th>The Philippines</th>
<th>Indonesia</th>
<th>Sri Lanka</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interest Rate Level and Structure</strong></td>
<td>Rates remained positive because of a decline in inflation. Flexible management of interest rates. Bank interest rates adjusted downward when the corporate sector faced adversity on banks because of the threat to financial viability. Preferential rates removed. Nonbank sector rates liberalized. Integration of formal and informal markets.</td>
<td>Modest impact because already influenced by the market before liberalization. Introduced base lending in 1981. Rates became more sensitive to international rates. Term structure changed due to stable prices.</td>
<td>Marginal increase in nominal rates on deposits and loans. Rates became positive as the inflation rate declined. Upward movement in rates induced by monetary contraction following the liquidity squeeze and competition from the high yields on Central Bank Bills. Domestic rates were largely well integrated.</td>
<td>Main impact on interest rates of state banks because other banks' rates were market determined. Real rates became positive and remained high. Domestic rates were well integrated.</td>
<td>Rates became strongly positive because government intervention continued but market accorded more influence on the level of interest rates.</td>
</tr>
<tr>
<td><strong>Growth of the Financial Sector</strong></td>
<td>Ratio of N3 to GNP rose sharply and faster than M3/GNP. This meant that financial assets such as bonds and commercial paper expanded rapidly.</td>
<td>M3/GNP more than doubled.</td>
<td>Financial deepening was modest. In 1984, growth in financial sector turned negative because of an adverse macroeconomic environment, a liquidity crisis and widespread bank failures.</td>
<td>Gross assets of the organised financial system tripled since 1982.</td>
<td>No perceptible growth in financial system. Reformers helped to arrest a decline of the financial system.</td>
</tr>
<tr>
<td><strong>Competitiveness, Profitability &amp; Efficiency</strong></td>
<td>Competitiveness increased. Use of new financial instruments by private banks and NBFI, expansion of the direct credit market and lower entry of foreign banks were the main catalysts.</td>
<td>Competitiveness increased. Competition between banks and NBFI intensified. Entry of foreign banks and expansion of bank branches. Control of the prime rate contributed to an increase in the relative share of small banks.</td>
<td>Competitiveness increased. Bank concentration reduced as universal banking was introduced. Two largest Government-owned banks were restructured.</td>
<td>Competitiveness increased. Interbank market strengthened as new instruments emerged. Foreign currency banking units (FCBI's) were established. Foreign banks were allowed to operate.</td>
<td></td>
</tr>
<tr>
<td><strong>Availability of Long-term Credit (varied across countries)</strong></td>
<td>Growth in credit from nonbanks is: Insurance, investment funds, trust companies and securities market. Securities remained marginal as a source of long-term funds. Securities crowded out by the issue of government bonds sold in captive markets. Share of development finance institutions in total credit-small.</td>
<td>Securities remained marginal as a source of long-term funds. Securities crowded out by the issue of government bonds sold in captive markets. Share of development finance institutions in total credit-small.</td>
<td>Volatility of interest rates became a constraint to medium and long-term lending. Banks experienced a mismatch of maturities between short-term liabilities and the loans required for term credit.</td>
<td>Banks and development banks made up the single largest source of capital funds. The lack of bankable projects depressed the demand for long-term funds. Growth of the capital market was constrained by the lack of an appropriate legal framework.</td>
<td></td>
</tr>
<tr>
<td><strong>Intermediate Cost</strong></td>
<td>Experience diverse-nothing definitive about how liberalization can influence. Reduction of reserve requirements offset the increase in the cost of loans on nonperforming loans to result in a fall in the cost of intermediate.</td>
<td>The intermediation margin widened because of the perpetuation of the oligopolistic banking structure. Widened margin could be explained by the rise in overhead costs due to rapid branch expansion and the continuation of selective credit programs.</td>
<td>Cost of intermediation increased due to high reserve requirements, substantial tax on gross receipts and a large proportion of nonperforming loans. Efficiency of intermediation increased as reflected by the narrowing of the interest rate margin.</td>
<td>Interest margin declined slightly. Given the high level of reserve requirements, any small downward change in the interest margin could be construed as a gain in efficiency.</td>
<td></td>
</tr>
<tr>
<td><strong>Integration of Domestic Financial Markets with Foreign markets (Different for each country and not always consistent with theoretical)</strong></td>
<td>Subsequent to financial reforms and deregulation, the gap between domestic and foreign interest rates declined. The situation reversed from what had been in the 1970s. Foreign interest rates became higher than domestic ones. Capital controls cushioned the sensitivity of domestic interest rates to foreign interest rates.</td>
<td>Sensitivity to interest rate differentials high but not as high as expected. Mixture of expectations. The cost of borrowing domestically exceeded that of borrowing from abroad. Prior to financial liberalisation, domestic rates were lower than international rates but the gap was narrow. Domestic rates matched foreign rates except in 1985 and 1995 when foreign rates rose faster.</td>
<td>Prior to financial liberalisation, domestic rates were lower than international rates but the gap was narrow. After liberalization, the cost of borrowing from abroad exceeded the cost of domestic borrowing because of a series of devaluations.</td>
<td>The quality of bank portfolios posed problems but it remained manageable because of a prudent and strict regulatory framework as well as the Government's proactive stance.</td>
<td></td>
</tr>
<tr>
<td><strong>Quality of Loan Portfolio</strong></td>
<td>Problem of nonperforming loans was resolved without a major effect on the adversity of banks. This was due to substantial financial support from the Government, tax allowances for writing off bad debts, concessional credit by the Central Bank to commercial banks, restructuring measures to rescue the corporate sector and also the onset of strong economic recovery.</td>
<td>Nonperforming loans problem not major. Noninterest interest rate never became too high. Corporate sector was less exposed to the shock of high interest rates. Since 1985, real interest rates increased, the economy slowed and the burden of arrears increased.</td>
<td>The banking system collapsed and the Central Bank had to undertake a massive bail-out operation. Serious problem of growing nonperforming loans in bank portfolios. The high level of interest rates relative to the productivity of capital adversely affected the corporate sector and subsequently, the financial sector.</td>
<td>The quality of bank portfolios posed problems but it remained manageable because of a prudent and strict regulatory framework as well as the Government's proactive stance.</td>
<td></td>
</tr>
<tr>
<td><strong>Corporate Sector’s Financial Structure</strong></td>
<td>The debt/equity ratio declined due to the recession and government commitment as a risk partner after the privatization of banks. The debt/equity ratio was relatively low and declined after the reform.</td>
<td>High gearing ratio prior to reform. The ratio increased due to distress borrowing and was sensitive to interest rate changes. High gearing ratio prior to reform. The ratio increased due to distress borrowing and was sensitive to interest rate changes.</td>
<td>High gearing ratio prior to reform. The ratio increased due to distress borrowing and was sensitive to interest rate changes.</td>
<td>Manageable because of strict regulatory framework.</td>
<td></td>
</tr>
</tbody>
</table>

## APPENDIX 2. II. Summary of Pre-Reform Situation of Selected Countries

<table>
<thead>
<tr>
<th></th>
<th>Ecuador</th>
<th>Bulgaria</th>
<th>Kenya</th>
<th>Egypt</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Macroeconomic Situation</strong></td>
<td>High inflation (49%)</td>
<td>High inflation (333.5%*)</td>
<td>Moderate inflation (16%*)</td>
<td>Moderate inflation (21%*)</td>
</tr>
<tr>
<td><strong>Fiscal situation</strong></td>
<td>Significant difficulties (-4% of GDP)</td>
<td>Serious difficulties 13% of GDP</td>
<td>Significant difficulties (-5% of GDP)</td>
<td>Significant difficulties (-15% of GDP)</td>
</tr>
<tr>
<td><strong>Monetary situation</strong></td>
<td>Inefficient</td>
<td>Non market system</td>
<td>Under progressive reform</td>
<td>Complex and inefficient</td>
</tr>
<tr>
<td><strong>Exchange rate system</strong></td>
<td>Crawling peg</td>
<td>Multiple controlled rates</td>
<td>Dual exchange rate system</td>
<td>Multiple controlled rates</td>
</tr>
<tr>
<td><strong>External debt</strong></td>
<td>Heavily indebted</td>
<td>Heavily indebted</td>
<td>Heavily indebted</td>
<td>Heavily indebted</td>
</tr>
<tr>
<td><strong>Structural situation</strong></td>
<td>Controlled market economy</td>
<td>Transition economy</td>
<td>Controlled market economy</td>
<td>Controlled market economy</td>
</tr>
<tr>
<td><strong>Price system</strong></td>
<td>Controlled public prices</td>
<td>Comprehensive controls</td>
<td>Controlled public prices 1/</td>
<td>Controlled public prices 1/</td>
</tr>
<tr>
<td><strong>Regulatory system</strong></td>
<td>Moderately controlled</td>
<td>Central planning system</td>
<td>Under progressive reform</td>
<td>Heavily regulated</td>
</tr>
<tr>
<td><strong>Tax system</strong></td>
<td>Complex and inefficient</td>
<td>Undeveloped</td>
<td>Complex and inefficient</td>
<td>Complex and inefficient</td>
</tr>
<tr>
<td><strong>Trade system</strong></td>
<td>Fairly liberal</td>
<td>State trading</td>
<td>Increasingly open</td>
<td>Restrictive system</td>
</tr>
<tr>
<td><strong>Exchange controls</strong></td>
<td>Largely liberal system</td>
<td>Controlled system</td>
<td>Some remaining controls</td>
<td>Some remaining controls</td>
</tr>
<tr>
<td><strong>Capital account</strong></td>
<td>Ineffective liberal system</td>
<td>Controlled system</td>
<td>Controlled system</td>
<td>Controlled system</td>
</tr>
<tr>
<td><strong>Financial sector</strong></td>
<td>Some remaining controls</td>
<td>Comprehensive controls</td>
<td>Controlled system</td>
<td>Controlled system</td>
</tr>
<tr>
<td><strong>Interest rate controls</strong></td>
<td>Some remaining controls</td>
<td>Comprehensive controls</td>
<td>Composite</td>
<td>Comprehensive</td>
</tr>
<tr>
<td><strong>Public ownership</strong></td>
<td>Significant</td>
<td>Total</td>
<td>Widespread</td>
<td>Widespread</td>
</tr>
<tr>
<td><strong>Central bank independency</strong></td>
<td>Limited</td>
<td>None</td>
<td>Limited</td>
<td>Limited</td>
</tr>
<tr>
<td><strong>Central bank losses</strong></td>
<td>Limited</td>
<td>Not estimated</td>
<td>Not estimated</td>
<td>Not estimated</td>
</tr>
<tr>
<td><strong>Indirect instruments</strong></td>
<td>Not developed</td>
<td>Not developed</td>
<td>Being developed</td>
<td>Being developed</td>
</tr>
<tr>
<td><strong>Money market</strong></td>
<td>Not developed</td>
<td>Non-existent</td>
<td>Being developed</td>
<td>Not developed</td>
</tr>
<tr>
<td><strong>Prudential regulations</strong></td>
<td>Inefficient</td>
<td>Undeveloped</td>
<td>Under reform</td>
<td>Under reform</td>
</tr>
<tr>
<td><strong>Bank supervision</strong></td>
<td>Poor</td>
<td>Undeveloped</td>
<td>Under reform</td>
<td>Poor</td>
</tr>
</tbody>
</table>

Source: Galbis (1995) excluding Zimbabwe which has been added by author.
APPENDIX 2. II. Summary of Pre-Reform Situation of Selected Countries (continued)

<table>
<thead>
<tr>
<th>Macroeconomic Situation</th>
<th>Egypt</th>
<th>Uganda</th>
<th>Zimbabwe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiscal situation</td>
<td>Moderate inflation (21%)</td>
<td>Significant difficulties (-15% of GDP)</td>
<td>Moderate inflation (21%)</td>
</tr>
<tr>
<td>Monetary situation</td>
<td>Complex and inefficient</td>
<td>Disorderly situation</td>
<td>Oligopolistic/ orderly</td>
</tr>
<tr>
<td>Exchange rate system</td>
<td>Multiple controlled rates</td>
<td>Heavily indebted</td>
<td>Heavily indebted</td>
</tr>
<tr>
<td>External debt</td>
<td>Heavily indebted</td>
<td>Heavily indebted</td>
<td>Heavily indebted</td>
</tr>
<tr>
<td>Structural situation</td>
<td>Controlled market economy</td>
<td>State dirigiste economy</td>
<td>State intervention</td>
</tr>
<tr>
<td>Price system</td>
<td>Controlled public prices 1/</td>
<td>Controlled public prices 1/</td>
<td>Heavily regulated</td>
</tr>
<tr>
<td>Regulatory system</td>
<td>Heavily regulated</td>
<td>Under progressive reform</td>
<td>Under progressive reform</td>
</tr>
<tr>
<td>Tax system</td>
<td>Complex and inefficient</td>
<td>Complex and inefficient</td>
<td>Complex and inefficient</td>
</tr>
<tr>
<td>Trade system</td>
<td>Restrictive system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exchange controls</td>
<td>Some remaining controls</td>
<td>Some remaining controls</td>
<td>Some remaining controls</td>
</tr>
<tr>
<td>current account</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>capital account</td>
<td>Controlled system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial sector</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Interest rate controls  | Comprehensive | Comprehensive | Comprehensive |
| Public ownership        | Widespread      | Near total      | Limited       |
| Central bank independence| Limited        | Limited        | Limited       |
| Central bank losses     | Not estimated   | Very large      | Not known     |
| Indirect instruments    | Not developed   | Not developed   | Fairly developed |
| Money market            | Not developed   | Not developed   | Fairly developed |
| Prudential regulations  | Undeveloped     | Inefficient     | Fairly strong |
| Bank supervision        | Poor            | Poor           | Poor          |

Source: Galbis (1995) excluding Zimbabwe which has been added by author.
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