I

THE EFFECTIVENESS OF TRADITIONAL INSTRUMENTS OF MONETARY POLICY DURING THE FOREIGN EXCHANGE AUCTION SYSTEM IN ZAMBIA

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LUSAKA

DECLARATION

THIS THESIS REPRESENTS MY OWN WORK AND HAS NEVER BEEN SUBMITTED FOR A DEGREE BEFORE AT THIS UNIVERSITY OR ELSEWHERE FOR THE SAME PURPOSE.

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DATE ----------15 OCTOBER 1991----------

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IS APPROVED AS FULFILLING PART OF THE REQUIREMENTS FOR THE AWARD OF THE MASTER OF ARTS DEGREE IN ECONOMICS BY THE UNIVERSITY OF ZAMBIA

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ABSTRACT

In a liberalised economy the monetary authority traditionally relies on four instruments with which to control money supply, namely, open market operations, legal minimum reserve requirement changes, discount rate policy and moral suasion. In this study the effectiveness of traditional instruments of monetary policy during the foreign exchange auction system in Zambia was examined. The policy instruments were each in turn scrutinized under the following headings:(a) theoretical underpinnings;(b) limitations and;(c) performance during the auction period from which policy directions and conclusions were drawn. Open market operations' effectiveness to restrain money supply was severely compromised largely due to government's desire to maintain the huge budget deficit in real terms in the face of the fast depreciating local currency on the weekly auction. The variable minimum reserve requirements was drastically effective and efficient in its own right, but its impact was small due to the piecemeal nature of reserve ratio adjustments. The discount rate policy proved illusive as the economy displayed a semblance of the Gibson's Paradox - the parallel movement of the price level with interest rates. Finally, the potency of moral suasion was greatly curtailed by incongruous intra-national and international politics of the day coupled with the lackadaisical attitude of the monetary authority.

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ABBREVIATIONS

B	- Monetary Base
BOZ	- Bank of Zambia
DPR	- Discount Rate Policy
EAZ	- Economic Association of Zambia
EPG	- Eminent Persons Group
FEMAC	- Foreign Exchange Management Committee
GDP	- Gross Domestic Product
GRZ	- Government of the Republic of Zambia
IMF	- International Monetary Fund
K	- Zambian Kwacha
LDCs	- Less Developed Countries
M1	- Narrowly defined money
M1B	- Narrowly defined money in the United States of America
M2	- Broadly defined money
MRR	- Minimum Reserve Requirements
MS	- Moral Suasion
NBER	- National Bureau for Economic Research
OMO	- Open Market Operations
SDR	- Special Drawing Rights
SITET	- Special Investigation Team on Economy and Trade
TB	- Treasury bill
UNIP	- United National Independence Party
US$	- United States dollar
USA	- United States of America
X	- Money Multiplier
ZIMCO	- Zambia Industrial and Mining Corporation

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The aim was to produce an outstanding academic work in the superlative degree. However, errors and omissions are entirely my own.

CHAPTER ONE

1 INTRODUCTION

1.1 BACKGROUND TO THE PROBLEM

Copper is the mainstay of Zambia's economy providing for over 95 percent of the country's foreign exchange earnings. The oil shocks of 1973 and 1979 coupled with plummeting copper prices on the world market heralded an on set of Zambia's economic crisis. With an exception of 1979 when this country recorded a trade and overall balance of payments surplus, the period between 1975 and 1985 registered deficits in both categories. There was an average deficit of United States (US) 314.9 million dollars during the 1975 to 1983 period with a separate US $437.7 million deficit for the year ended December 1984. Inflation rate had more than doubled from an estimated annual rate of 15 percent in 1976 to 35 percent in 1985. During the period 1981 through 1985, real Gross Domestic Product (GDP) was declining at a yearly average of 3.6 percent while per capita income fell by 18.1 percent in the same period. Besides, Zambia had an excruciating debt service ratio which had reached 121.8 percent of the total export earnings by the end of 1985.

On more occasions than one, the International Monetary Fund (IMF) and the World Bank had since 1975 rendered economic assistance to this country in various forms of restructuring cum stabilisation programme. However, it was in 1983 that the Zambian government signed an accord with the IMF for the purpose of restructuring the economy through economic liberalisation. This agreement with its conditionality clauses was put into effect in 1985. The liberalisation package was popularly known as the 'Foreign Exchange Auctioning System'.

It was on 4th October, 1985 that Zambia adopted in full the IMF package which by reason and design was meant to restructure the economy through economic liberalisation cum foreign exchange auction. The auction system was essentially a weekly allocative device which awarded foreign exchange to the highest bidders through the Central Bank. Almost a year after its inception, the President of the Republic of Zambia Dr. K.D. Kaunda upheld the foreign exchange auction system as "The only option left for Zambia."[1] On May 1, 1987 the President undertook the painful but unavoidable task to outline the nation's economic ills in which speech the foreign exchange auction system was scrapped, and with it Special Drawing Rights (SDR) 198 million were forfeited.[2].

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1. In Business Concord of September 1986.
2. See IMF Survey of July 1, 1987.

This economic agreement between the IMF and Zambia required the receiving country to adhere to certain austerity measures which were by and large contractionary in intent and character. These measures among other things included an attempt to stop the government's use of overdraft facilities of the Bank of Zambia.[3] The following, however, formed the basis of conditionality clauses:[4]

a. imposition of credit ceilings in order to reduce money supply

b. reduction in public expenditure, especially on social services and subsidies

c. reduction of overall government deficit

d. the decontrol of prices and interest rates

e. imposition of ceiling on wage rises

f. the progressive devaluation of the kwacha, and

g. the auctioning of foreign exchange

3. See World Bank: country memorandum of December 1986.
4. See President K.D. Kaunda: Zambia's May Day 1987 Economic Package. National-wide Radio & Television Broadcast.

To promote compliance, and in conformity with Article IV, Sections 3(a) and 3(b) of the IMF Articles of Agreement, foreign exchange from the IMF for the restructuring programme was doled out in instalments as successive short-term qualitative and quantitative targets were satisfactorily met. Invariably, one of the performance criterion was to control growth of monetary aggregates. However, economic trends under the auction of foreign exchange system were far from predictable.

Briefly stated, below is the chronology of the Bank of Zambia monetary management and attempt to control money supply as from September 1985 to May 1, 1987.

September 1985 - Interest rates decontrolled

September 23,1985 - Bank rate and penal rate revised to 17.5 percent and 18.5 percent respectively

October 10, 1985 - Bank rate raised to 21 percent.

November 11, 1985 - Bank rate and penal rate revised to 25 percent and 27 percent respectively.

January 6, 1986 - Bank rate and penal rate reduced to 23.5 percent and 26 percent respectively.

April 1986 - Minimum reserve requirements raised for 15 percent of demand deposits and 8 percent of savings and time deposits to 18 percent and 10 percent respectively.

August 1986 - Minimum reserve requirements raised to 20 percent of demand deposits and 12 percent of savings and time deposits.

- Bank rate raised to 25 percent and penal rate maintained at 26 percent.

- Spreads between the buying and selling rate of Treasury bills adjusted to range up to 1/8th for maturities within 22 days; up to 1/40th for maturities within 23 to 45 days; and up to 1/16th for maturities within 46 to 91 days.

November 1986 - Bank rate and penal rate raised to 30 percent and 31 percent respectively.

- Minimum reserve requirements adjusted to 25 percent of demand deposits and 17 percent of savings and time deposits.

February 2, 1987 - Control of interest rates re-introduced thus:

- maximum lending rate fixed at 25 percent.

- Treasury bill rate fixed at 18 percent

- Bank rate reduced to 20 percent

March 1987 - Commercial banks required to deposit supplementary deposits of 10 percent on demand deposits and 7 percent of savings and time deposits with the Bank of Zambia.

- commercial banks required to report liquidity ratio on a weekly basis.

May 1, 1987 - Interest rates adjusted as follows Lending rates fixed at 15 percent with a 5 percent margin and 20 percent as ceiling interest rate.

In spite of all these measures aimed at restraining money supply, Zambia at relative peace with her neighbours, unlike at the peaks of the wars of liberation for

independence of Angola, Mozambique and Zimbabwe, not only did she record a phenomenal increase in monetary growth of about 145.8 percent (see figure: 1.1) within 18 months of the foreign exchange auction regime, but also a currency depreciation of 955 percent and a spurt of hyper-inflation. Table:1.1 below gives an indication of money supply from 1980 to September 1987:

Table:1.1 MONEY SUPPLY OVER SELECTED YEARS

END OF PERIOD	NARROW MONEY(M1) (K'Million)	QUASI MONEY	BROAD MONEY(M2)	PERCENTAGE CHANGE IN (M2)
1980 DEC	509140	397686	906726	-
1981 DEC	561382	417348	978730	7.94
1982 DEC	682231	626987	1309218	33.77
1983 DEC	782625	661621	1444246	10.31
1984 DEC	866807	836627	1703434	17.95
1985 DEC	1228706	875096	2103802	23.50
1986 DEC	2301058	1760740	4061798	93.07
1987 SEP	2795243	2652543	5447786	34.12

Source: Bank of Zambia.

1.2 TRENDS IN THE MONEY SUPPLY DURING THE FOREIGN EXCHANGE AUCTIONING REGIME

During the period under review, both the narrowly defined money (M1), comprising currency outside the commercial banking system and demand deposits, and the broadly defined money supply (M2), that is, narrow money and quasi-money (near-money) increased dramatically. This uptrend can in part be explained by the decontrol in interest rates and the requirement of the auction of foreign exchange system to have monies readily available at the commercial banks at the time of bidding for foreign exchange by all participants.

Narrow money supply grew by 138.8 percent from K1034.783 million to K2471.286 million, while broad money supply rose from K1870.636 million to K4598.406 million signifying an increase of 145.8 percent during the period under review (see figure: 1.1 below). For actual money supply figures see Appendix One table:9. Near-money expanded from K835.853 million to K2127.120 million representing a rise of 154.5 percent, from September 1985 to May 1987.

This study is an investigation into the effectiveness of traditional instruments of monetary policy for control of money supply under the foreign exchange auction system in Zambia. The study addresses the following questions:

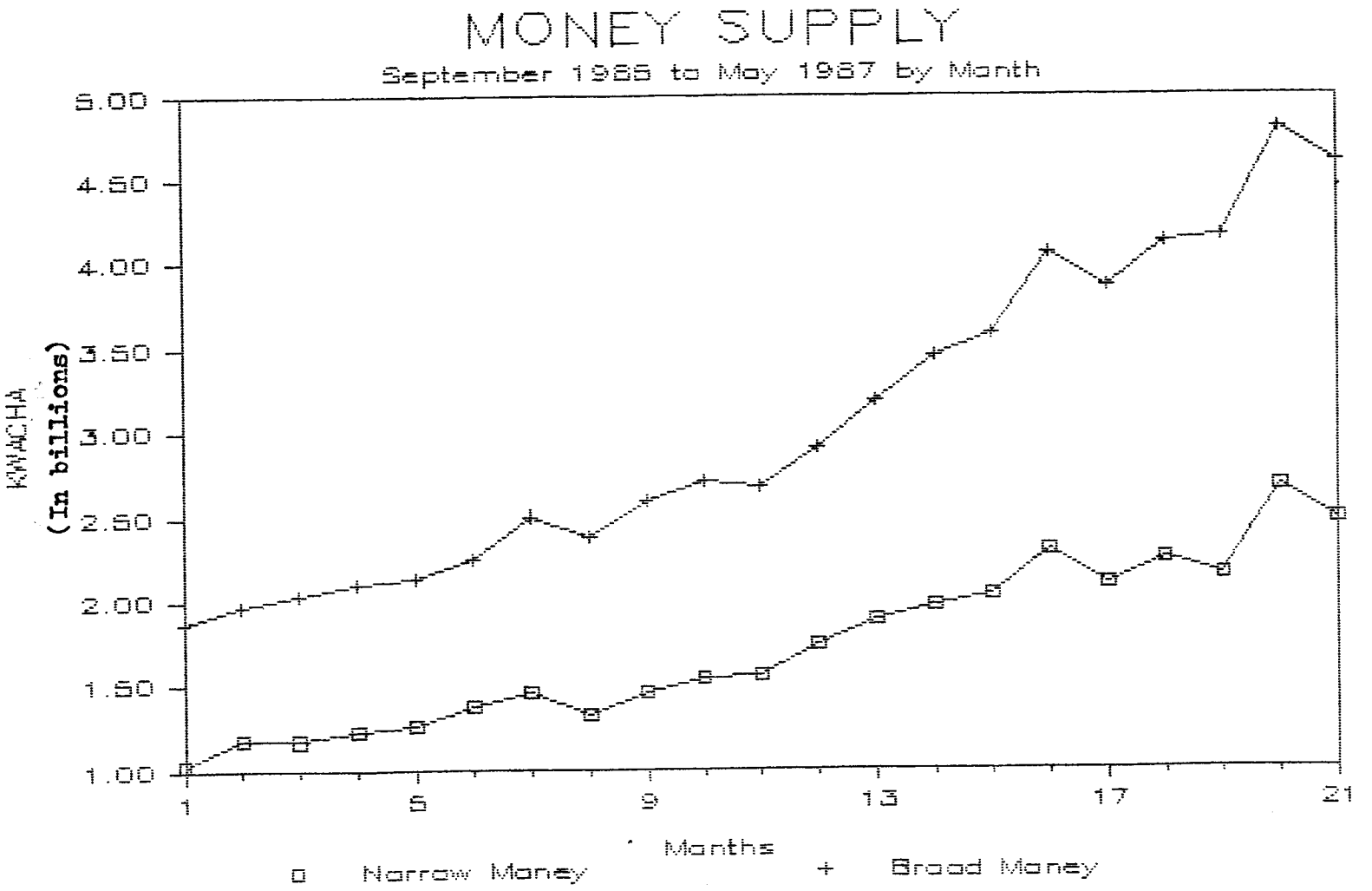


Figure: 1.1 Growth in money supply is dipicted showing narrow and broad money supply over a period of twenty one months. Narrow money is M_1 and M_2 is the broad money supply, the latter being at the focal point in this analysis.

a. How effective are the traditional instruments of monetary policy?

b. What are the factors that reduced the potency of policy instruments to restrain monetary expansion during the period of foreign exchange auctioning in Zambia?

c. Why was there a mercurical rise in monetary growth during the period when the floating exchange rate regime was in vogue?

The study is confined to the period of foreign exchange auctioning in Zambia for two main reasons. Firstly it was during this period that money supply grew so sharply unlike during any other time in post-independence era. Secondly, it is the point in time that a relatively new IMF monetary experiment of floating exchange rate system was applied to a less developed country.

1.3 THE ROLE OF MONETARY POLICY

In Adam Smith's (1776) perception of an "invisible hand" of market forces, it is held that a competitive private economy would achieve the allocative and productive efficiency due to consumption efficiency, leading to a Pareto optimum where it would be impossible to make one

person better off without making someone else worse off. Government intervention in an economy is considered inimical in a free enterprise system. However, the Great Depression of 1930s sharply altered these attitudes. The Keynesian stagnation thesis in 1940 propounded the theory that the marginal propensity to consume is less than the average propensity to consume, such that as income rises the ratio of consumption to income falls. This theory helped to destroy the existing faith in the free market economy. It is held that if consumption follows this trend, the ratio of consumption demand to income would fall as income rose. Algebraically, given the equilibrium condition for growth in income.

$$Y = C + I + G$$

where C = consumption
I = investments
G = government
Y = income

then

$$1 = \frac{C}{Y} + \frac{I}{Y} + \frac{G}{Y}$$

so that unless government spending increases at a faster rate than real income, the economy is bound to stagnate This provided a powerful rationale for government's role in regard to national economic stabilisation through a fiscal stimulus. Later, the frustrations experienced by economic policy makers of Keynesian persuasion in the late 1960s and 1970s, led to the emergence of brand new ideas in economic thinking. The primary development in economic theory during this period was begun by Friedman and Phelps. They maintained that although most economies became

uncontrollable due to shocks, the remedy to offset these shocks were wholly incorrect. Friedman (1959, 1968, 1972, and 1980) advocates a monetary solution to economic dislocations by increasing money supply only to the extent of the value of real resources produced.

According to Friedman (1968 and 1980), calamities of the magnitude of the Great Depression and others need not have happened. He believes, just as John Stuart Mill (1929) before him, that money is invariably a machine which is capable on its own to exert independent and distinct influence on the economy when it gets out of order. Fortunately, not only can monetary policy prevent money from being of economic disturbance, but also provide a stable background for the economy. Monetary policy can at the same time contribute to rectify vagaries in the economic system arising from sources other than money itself.

The relationship between monetary aggregates and macroeconomic goals briefly adumbrated above is better understood within the context of Fisher's equation, thus

$$MV = PY \qquad (1)$$

where M denotes the usual money supply V is the velocity of money in a given economy, P is the price level and Y is aggregate output or total income. Assuming that the

velocity of money is fairly stable over the long run, then changes in money supply will have direct ultimate impact on variations in price level and total output. according to Macesich (1984) this is a well attested phenomenon in economic analysis.

The functional relationship between money supply, price level and output can be adduced from the Fisherian transactions equation. Thus, in its differential form it can be written as:

$$\frac{dM}{M} + \frac{dV}{V} = \frac{dP}{P} + \frac{dY}{Y} \qquad (2)$$

where dM, dV, dP and dY mean the usual change in money supply, change in velocity of money, change in price level or price index and change in total output or total income respectively. Given that the velocity of money is constant in the long run and denoting the rates of change in money supply, price level and total output by m,p and y equation (2) can be re-written as under:

$$m = p + y \qquad (3)$$

alternatively $p = m - y$

this is to state that the rate of inflation is positively (directly) associated with the rate of change in money supply and negatively (inversely) related with the rate of growth in total output. Functionally therefore:

$$p = f(m,y) \qquad (4)$$

where $f(m)>0$ and $f(y)<0$. Here, observed changes in money supply are a composite of behavioural and administratively determined deficit financing, the latter being the source of economic malfunction in this country. Empirical evidence is as in table:1.2 below:

TABLE:1.2 Price Level, Money Supply and Aggregate Output Relationships

	Target 1988	Actual 1987	Actual 1986	Actual 1985
Growth rate of GNP	2.2%	0.5%	1.5%	1.8%
Money Supply growth rate	43%	60%	93%	23.5%
Inflation rate	30-35%	52-58%	52-60%	35%

Source: Bank of Zambia.

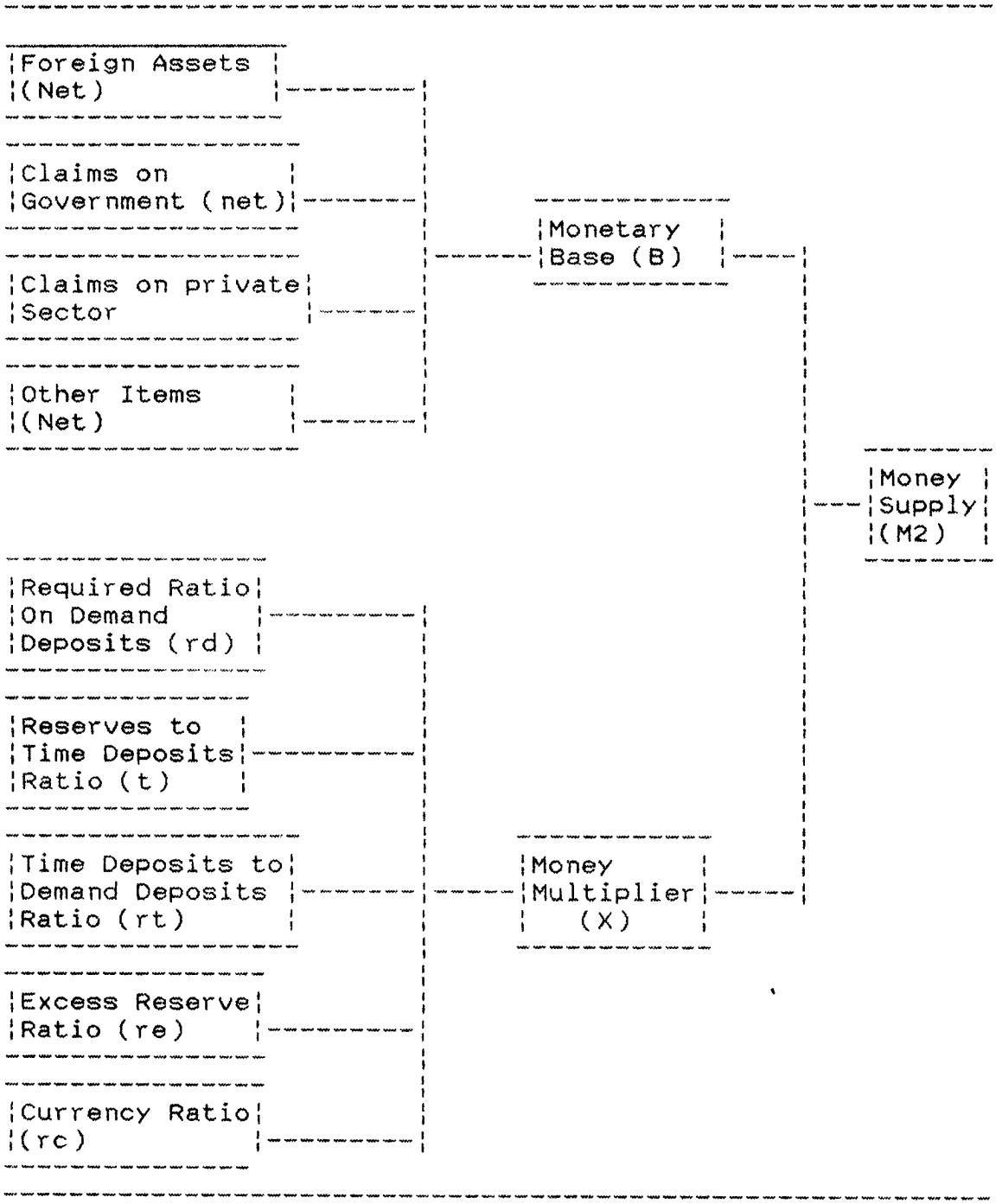
It is the task of monetary authority to directly manipulate monetary variables so as to achieve desired macroeconomic goals such as Gross National Product (GNP) growth rate, price level, unemployment rate, balance of payments position and so on. Algebraically, the money supply equation is given as:

$$M = X\ B$$

where M = money supply
X = money multiplier
B = monetary base

Diagramatically the following are the factors in the money supply equation.

Figure: 1.2 FACTORS IN THE MONEY SUPPLY EQUATION.



Here, rd=R/D; rc=C/D; re=E/D; rt=T/D; and t=R/T, where D stands for demand deposits, R for reserves, C for currency

in circulation, E for excess reserves, and T for time and saving deposits.

Cogently, monetary policy may be effected as described in the following hypothetical account. Thus,

a. the monetary authority assesses the economic activity through measurements such as GNP, price level, unemployment rate, balance of payments position or any other macroeconomic aggregate.

b. the monetary policy maker compares the statistics in (a) with desired goals.

c. the Central Bank then adjusts policy instruments in order to influence the economic activity in the country in the desired direction.

d. the policy instruments so set in motion first impinge on operating targets such as the monetary base through a target time path and in the process providing quick feedback to the monetary authority on the effect of adjustments continuously being made in policy instruments, until

e. the desired level of economic activity is attained over time.

Algebraically, the monetary policy maker could be seen to effect monetary policy at least partly through control in money supply as Meyer (1982) suggests, thus

$$MT = \frac{XT \cdot BT}{Xo \cdot Bo} \cdot Mo$$

where MT denotes targeted money supply XT is targeted money multiplier, BT is targeted monetary base, Mo is actual money supply, Xo is actual money multiplier and Bo is actual monetary base. Variously, if the actual money supply is approximately equal to the target value and if the actual monetary base is approximately equal to the target value then the money multiplier can be predicted fairly accurately.

Chapter 699 of the Laws of the Republic of Zambia, herein known as the Bank of Zambia Act, states in the preamble:

> "An Act to provide for the establishment constitution duties and powers of the Bank of Zambia as the Central Bank to impose and confer on the Bank duties and powers for the protection of the internal and external value of the currency and for the matters to do with the currency and banking, and to provide for incidental matters."

The Bank of Zambia Act has the necessary and sufficient provisions to achieve what is stated in the preamble. For example, Section 25 of the Act confers powers on the Central Bank to prescribe the minimum discount and rediscount rates; Section 29(1)(a) allows the monetary authority to prescribe the minimum amount of liquid assets which each commercial bank and accepting house is required to hold while Section 29(1)(b) empowers the Central Bank to prescribe the minimum reserve balance which each commercial bank and accepting house shall maintain with the Bank; and as if that is not enough, the Act provides the policy maker the latitude to go inspecting commercial banks to satisfy himself on various issues pertaining to policy objectives as articulated in Section 35.

1.4 TOOLS OF MONETARY POLICY

Policy instruments are the tools of monetary policy directly influenced by the Central Bank. Adjustments to the policy instruments does constitute direct action by the monetary authority to influence the financial system and the level of economic activity in the nation.

There are four quantitative instruments of monetary policy of which the discount rate policy deals with the cost of credit while open market operations, minimum reserve requirement changes and moral suasion predominantly do

tackle the question of availability of credit in the economy. Thus,

a. Open Market Operations (OMO) : the purchase and sale of government securities (debt) both to the commercial banking system and to the non-bank public in the Open Market

b. Minimum Reserve Requirement (MRR) changes: adjustment of the required reserves for demand deposits and time deposits.

c. Discount Rate Policy (DRP): changes in the discount rate and or altering standards used in making loans to the commercial banking system.

d. Moral Suasion (MS): for supervisory or persuasive and regulatory actions meant for the commercial banking system and the non-bank public compliance so as to realise certain macroeconomic objectives, sometimes known as open mouth policy.

1.5 LITERATURE REVIEW

The period studied reflects the point in the history of Zambia when the country was under obligation to conform to the Articles of Agreement between the IMF and herself as

briefly spelt out by President Kaunda in his May Day 1987 speech. However, Zambia's restructuring programmes and conditionality clauses was an IMF/World Bank stereotype post World War II phenomenon in which, according to Pastor (1987) the world body has served as the international lender at last resort since 1947. These programmes were given more impetus mainly in 1970s and early 1980s for two major reasons. First, to prevent an imminent financial collapse world-wide provoked by soaring balance of payment deficits arising from oil shocks of 1973 and 1979. Second, to overcome the underdeveloped countries' obduracy to IMF advice and use of its resources.

Going by the IMF/World Bank Officials' current thinking, Zambia like many less developed countries such as Uganda, Nigeria, Cote d'Ivoire, Sierra Leone and Ghana in Africa, had inevitably found herself in deep economic crisis. The reason being due to an over-valued national currency kept alive in a fixed exchange rate system compounded by price controls and fixed interest rates moulded in an over-expanded public sector. So, the IMF/World Bank prescription was that of: (a) liberalisation of Zambia's economy in order to remove price distortions; (b) a flexible exchange rate system and decontrolled interest rates for efficient re-allocation of scarce resources with; (c) massive redundancies in the public sector to bring it back to an economically viable feasible

size. These adjustments together with a set of conditionality clauses, constituted the IMF economic package.

Other things being equal, contemporary writers on the foreign exchange auction system as it obtained in Zambia have not been found wanting in their condemnation of the IMF/World Bank sponsored structural adjustment programme and its conditionality clauses. None has, however, so far fully traced the failure of the floating exchange rate regime in Zambia to misapplication and or ineffectiveness of traditional instruments of monetary policy for the control of money supply.

Smith's (1956) study on the effectiveness of monetary policy laid emphasis on issues pertinently related to restrictive monetary policy in times of inflation in the United States of America (USA) under the Gold Standard system. However, this study focuses on the effectiveness of traditional instruments of monetary policy during the foreign exchange auction system in Zambia. Basically, the aims of these two studies are similar in the sense that they seek to reveal whether money supply can be controlled or not. Implicit in this search is the assumption that money can be quantified albeit with difficulty. Chetty (1969) tackled the problem of degree of moneyness and near-monies in the USA. He came up with coefficients corresponding to

the various degree of moneyness for variables included in the broad money equation. Thus

$$M = 1.0(DD+C) + 1.0TD + 0.88MS + 0.62SL$$

where M denotes the empirical definition of money as a weighted sum, DD is demand deposits, C is currency and coin, TD is time and savings deposits at commercial banks, MS represents time and savings deposits at mutual savings banks and SL standing for time and savings deposits at loan associations. Essentially, this means that demand, savings and time deposits together with currency and coin at commercial banks are 100 percent money while savings and time deposits at mutual savings banks and loan associations account for 88 percent and 62 percent of moneyness respectively. Of course, the Zambian case might present a different picture as money portfolios are not identical.

So, given that the Central Bank exercises authority of coin and note issue - Can the Central Bank control money supply? Many writers such as D.G. Pierce and D.M. Shaw (1979), V. Chick (1973), G.C. Chow (1966), R.C. Bryant (1980), C. Harvey (1985) and M.H. de Kock (1974) are rather pessimistic about the Bank's capability to control money supply. In their view the Central Bank possesses only partial control over the two main determinants of money supply. The two determinants of money supply in question

being the money multiplier and the monetary base. Their pessimism seems rather heightened by the assumption that there exists non-policy variables that influence intermediate and ultimate target variables which make prediction difficult. Pierce and Shaw (1979:p.427) advance argument algebraically as follows:

$$T = aP + bE$$

where T represents the ultimate target goal, P is a vector of policy action, E the vector of non - policy influences on T, and a and b denote the impact of P and E on T.

According to Fand (1967) effective control of money supply depends on the tight relationship between the monetary base and the bank reserves, and between bank reserves and the money supply. For Meyer (1982), however, the gist of money supply control lies in the manipulation of the main determinants of money supply taken as a product of the money multiplier of the commercial banks and the non-bank public and the monetary base of the Central Bank. Acknowledging the significant role which commercial banks and the non-bank public may each assume in turn, the broad money supply equation takes the following behavioural form:

$$M2 = \frac{1 + rc(y,id,T,Cr) + t(y,it,is,P)}{rd + re(b,is,Ed,Vd) + rc(y,id,T,Cr) + rt(y,it,is,P)t} XB$$

where y = income
id= interest rate paid on demand deposits
it= interest rate paid on time deposits
is= interest rate paid on marketable securities
b = brokerage cost of buying and selling securities
T = tax rate
Cr= crime rate or underground dealings
Ed= expected (percentage) change in demand deposits
Vd= variability of demand deposits
P = indifference to changes in interest rate(P for perverse)
rd= required minimum cash reserve ratio against demand deposits
rt= ratio between time deposits and demand deposits
rc= currency ratio
re= excess reserve ratio
t = required minimum cash reserve ratio against time deposits.

M2 represents broad money supply and B is the now familiar monetary base which comprises reserves and currency. However, the signs above or below a variable in the behavioural equation indicates the relationship between the variable and the ratio before it.

Since the monetary base is under the direct influence of the Central Bank by way of adjusting interest rates; sales and purchases of Treasury bills and the minimum required reserve ratios, then controlling money supply revolves largely on the Banks ability to forecast the money multiplier. It is gratifying to note that the money multiplier too responds to the minimum reserve requirement

changes. A Burger (1973) has proposed the following forecasting equation for the USA economy;

Predicted Money Multiplier	=	0.29+0.89	lagged money Multiplier change + 0.04	lagged Treasury bill rate percentage

So, given the value of predicted money multiplier the desired intermediate and ultimate target aggregates of money supply can be attained by bringing into play the various tools of monetary policy in the dynamic state. Chairman Paul Volcker of the USA Federal Reserve is said to have controlled money supply in this manner with effect from 6th October 1979 according to Macesich (1984).

What was Zambia's operating strategy during the auction of foreign exchange system? Commensurate with the Bank of Zambia Annual Report for the year ended December 1985, a reasonable deduction could be made on Zambia's ill-conceived operating strategy. It could be likened to what Bryant (1980) calls 'a single-stage strategy in a discretionary instrument adaptation with intermittent feedback.' Crucial in this operating strategy is the idea of targeting. What is required is that the monetary authority takes no Rip Van Winkle nap after he has set the desired targets. He is then required to monitor monetary aggregates and make sure they closely follow the desired target time path to the ultimate target. Bryant (1980) has argued that greater analytical

precision can be given to the concept of targets or objectives if the monetary authority has preferences defined over the time paths of ultimate target variables within a specific policy loss function. Chivuno (1987) and Sanderson (1987) have given impressions of macroeconomic objectives the policy makers had in mind during the auction of foreign exchange system in Zambia, namely:

(a) economic growth

(b) stability in price level and

(c) stable exchange rate.

Bomhoff (1983) illustrated the essence of targeting in the USA as in the following table:

TABLE:1.3 Money Supply Growth in the US 1976-1983

(Percent Growth)

Year Ending Quarter	Target announced by the Fed	Target Midpoint	Actual	Error
1976 (M1)	4.5-7.5%	6.0%	5.8%	-0.2
1977 (M1)	4.5-6.5	5.5	7.9	2.4
1978 (M1)	4.0-6.5	5.2	7.2	1.9
1979 (M1)	3.0-6.0	4.5	5.5	1.0
1980 (M1B)	4.0-6.5	5.2	7.3	2.1
1981 (M1B)	6.0-8.5	7.2	5.0	-2.2
1982 (M1)	2.5-5.5	4.0	8.5	4.5
1983 (M1)	4.0-8.0	6.0	14	4

Source: Bomhoff(1983)

The state of the art in controlling money supply lies in the monetary authority's ability to use the tools of monetary policy to steer monetary aggregates close to the target midpoint through time until the desired ultimate target is hit.

Succinctly put, many writers such as Keynes (1930, 1936), Day (1957), Samuelson (1973), de Kock (1974), Hanson (1978), McCarty (1982), Meyer (1982), Cargill (1979), Lipsey

et al (1984) and Butler (1985) do agree that the single most important tool of monetary policy is open market operations. For some, this policy instrument alone constitutes monetary policy itself. Open market operations is a sophisticated weapon in the hands of Central Bank which is basically market oriented. It is for this reason that a wide market in securities should exist if optimum control of money supply is to be realised. Khatkhate (1972, 1978 and 1984) together with Khatkhate and Coats (1980) have insisted that a close knit of developed financial markets is a sufficient condition for the effective control of money supply when using open market operations as a policy instrument.

Zambia is served by the following commercial banks; Barclays Bank of Zambia Limited, Standard Chartered Bank Zambia Limited, Zambia National Commercial Bank Limited, Grindlays Bank International (Zambia) Limited, Citibank Zambia Limited, Bank of Credit and Commerce Zambia Limited, Lima Bank Limited, Meridien Bank Zambia Limited, Indo-Zambia Bank Limited, African Commercial Bank Limited, Zambia Import and Export Bank Limited, Finance Bank Limited and Capital Bank Limited. The non-bank financial Institutions are: Zambia State Insurance Corporation Limited, Zambia National Provident Fund, Zambia National Building Society, Credit Unions, and the Workmen's Compensation Fund Control Board. However, the extent to which Zambia's financial institutions are knit is invariably straddled by Musokotwane (1985).

Other things being equal, the government securities should be attractive. Smith (1956) has argued that the force which induces an individual to shift from other forms of investment portfolios to Treasury bills is the differential in yield which ought to be sufficient to compensate for the risk and cost of the switch. In this paper, Gibson (1970) comparing series of the ratio of currency to time deposits with the interest on time deposits concluded that there is no strong systematic tendency to substitute time deposits for currency as interest rates on the former rise. Further, the proportions to which the Treasury bills are bought from the Central Bank between the commercial banks and the non-bank public matters as this impinges on the effectiveness of open market operations. The commercial banks - held Treasury bills have the effect of emasculating the potency of this policy instrument. Yet, akin to Treasury bills are security portfolios of non-bank financial institutions which in effect are near-moneys and debt instruments. Ranlett (1977) contends that proliferation of competing debt instruments from non-bank financial intermediaries may arouse a serious obstacle to Central Bank policy and goals in the conduct of open market operations.

Variously, there are two modes of open market operations, namely, defensive and dynamic. Defensive open market operations according to Meyer (1982), refer to the Central Bank's open market transactions made for the purpose

of 'defending' Bank reserves and the monetary base against the influence of outside forces over which the Bank has no control. These forces impinge on uncontrolled accounts in the monetary base and are capable of reducing or enlarging it. A huge monetary base may stand for expansion in monetary growth while a tiny base may entail restrictive monetary policy. Dynamic open market operations, for Meyer (1982), refer to the deliberate efforts by the Central Bank to change the course of economic events in line with stated policy objectives.

The second tool of monetary policy is legal minimum reserve requirement changes. According to Samuelson (1973) the legal minimum reserve requirement changes is a 'drastic' weapon of monetary policy. Changing minimum reserve requirements ratios by the Central Bank obliges the commercial banks to keep specific ratios of monetary aggregates which has the effect of reducing or increasing the excess reserves. When the legal minimum reserve requirements are adjusted upwards, commercial banks' excess reserves upon which banks rely to create credit is reduced, thereby contracting the money multiplier, hence restraining money supply. The reverse is true when ratios are forced downwards. Adjustments to minimum reserve requirements have an immediate impact on the availability of credit and expansion throughout the commercial banking system, hence the control of money supply.

The discount rate policy or discount mechanism is another quantitative tool of monetary policy at the disposal of the Central Bank authority in which the Bank acts as lender of last resort. That is, the Central Bank makes loans to needy commercial banks on request.

When its discounts are growing, it means that the commercial banks are ever more borrowing from the Central Bank, thereby making the reserves to grow, hence the monetary base. The reserves of the Central Bank contract when the discounts drop. Since the expansion of the Central Banks' reserves is at the initiative of the commercial banks, the Central Bank is at a loss if its intention is to expand the monetary base when commercial banks are not willing to borrow from it. All it could do in the circumstances is to reduce the Bank rate and make it sufficiently lucrative. Many notable authors in this discipline such as Samuelson (1973), Lipsey et al (1984), Maccarty (1982), de Kock (1974) and Day (1957) do agree that the Central Bank can restrain the growth of Bank reserves by imposing a forbidding discount rate, or by simply vetoing demands to borrow from it. This action would necessarily have the effect of restraining money supply.

In this discourse, the last instrument of monetary policy to be analysed is moral suasion. The Bank of Zambia

like many Central Banks in newly independent countries, is under pressure to foster voluntary and regular cooperation on both the commercial banking system and the non-bank public so as to accelerate development. de Kock (1974:180-182) is in favour of the idea that Central Banks be endowed with adequate statutory powers over their relevant activities as opposed to relying on persuasion. Samuelson (1973), Lipsey et al (1984) and Cargill (1979) refer to the Central Bank appeals for compliance to announced policy objectives as moral suasion. For a less developed country like Zambia, this policy instrument becomes even more significant as it was critical, given the level of formal education in monetary economics of an average citizen. The situation was such that mere advice and or exhortation to command compliance could not get the intended objective, perhaps threats would have achieved the desired results.

In the ensuing chapters, a deliberate effort is made to expose both the theoretical and actual effectiveness of the instruments of monetary policy singularly. The policy instruments are sequentially examined invariably under the following headings: (a) theory (b) limitations (c) auction period experience (d) policy directions and (e) conclusion. Chapter two deals with open market operations while subsequent ones through chapter 6 and concerned with the minimum reserve requirements changes, discount rate policy, moral suasion and conclusion do follow in that order.

CHAPTER TWO

2 OPEN MARKET OPERATIONS

2.1 THE THEORY OF OPEN MARKET OPERATIONS

Essentially, open market operations involves the Central Bank sale and purchase of government debt to and from the commercial banking system and the non-bank public through the medium of Treasury bills.

Open market operations has a dual effect as a quantitative tool for control of money supply. In the first place, it may be used to influence the rate of interest on capital. This is so because as the Central Bank operates to a limited extent in the financial market it may well affect the willingness of other operators throughout the financial system to adjust their interest rates on capital to conform to the subsisting rate of interest in the Treasury bill market. Thus it has the effect of pegging the interest rates.

Secondly, open market operations may be used to alter the reserve position of commercial banks. For instance, as the non-bank public buy the government securities (e.g. Treasury bills) from the Central Bank **by means of cheques**

drawn against their deposits in various commercial banks, the Central Bank debits the accounts of affected commercial banks at the Central Bank thereby reducing their reserves by the same amounts as that of the cheques. The commercial banks are then obliged to replenish their depleted reserves up to the legal minimum reserve requirements. Given such a scenario, we are finally left with a situation in the financial system where interest rates have been adjusted with less hard currency in the hands of the non-bank public and a seemingly illiquid commercial banking system. This has the effect of contracting money supply. The opposite holds when the Central Bank purchases Treasury bills from the non-bank public.

The situation is rather different in perspective when the commercial banks buy the Treasury bills from the Central Bank. In this case, although bankers experience a depletion in their excess reserves in their vaults when they buy Treasury bills, this is non-the-less a calculated move which normally is designed to strike a balance between customers requirements and the money that could have been left idle without earning interest. In this scenario there is neither a shortage of money in the hands of the non-bank public nor an incidence of illiquid commercial banking system as was the case when the non-bank public entered the open market

operations.[5] The net result may not necessarily be a reduction in money supply when the Central Bank purchases Treasury bills from the commercial banking system. Exactly the same process occurs when the Treasury bills mature. 'Funding' is the concept used to describe a process of selling new debts (e.g. Treasury bills) to replace old maturing ones by the Central Bank. The bulk of interest accrued as a result of holding Treasury bills must be borne by the government at maturity day. This in turn has the effect of reducing government revenue and or increasing the government budget deficit. A responsible government which runs a balanced budget normally has such interest covered in increased tax rates or broadened tax base which effectively renders both the financial system and the non-bank public less liquid, hence the control of money supply.

Other things remaining the same, the two scenarios conceived above become inconclusive and indeterminate when the end use of the Treasury bills is not analysed. Firstly, given that the end use of the Treasury bill is to finance the government deficit, then this act would essentially contribute to the increase in money supply in the economy. Secondly, since the interest which accrue on each Treasury bill is borne by the government, then this factor has the effect of enlarging the government debt. In the case of the

5. This is so, as long as the Central Bank is always ready to buy Treasury bills from the commercial banking system in any amounts without affecting the discount rate.

Central Bank being given statutory powers to issue its own paper for monetary administration, money can be restrained using Treasury bills with the same strength as when the government runs a balanced budget.

Protopapadakis and Siegel (1987) describe the process by which an increase in government debt results in rise in the money supply as 'monetisation' of the debt. So, given that the Central Bank is indulging in open market operations to cover a government decision to spend an extra amount of money without any offsetting taxation, say by dishing out a cheque of K100 million to a road contractor who has just completed construction of a highway, this would result in an increase in the money supply. This is so because the K100 million simply causes the Bank reserves to swell, hence the growth in money supply which in turn induces high demand in the economy.

The monetisation relation has three channels through which debt creation may lead to money creation or increase in money supply as Protopapadakis and Siegel (1987) portrayed them:

i. Economic limits on debt-to-GNP ratio

ii. The time inconsistency problem of government policy, and

iii. Political pressures to stabilise interest rates.

The first one arises as a direct result of insufficient taxation to meet intended government expenditure. The second comes about due to the existence of an incentive for policy makers to engineer a reduction in real value of the debt by inflating at a rate greater than earlier anticipated. For instance, the possibility that government can exploit the short run Phillip's curve in order to lower unemployment. The third channel happens when the debt growth increases expectations of future monetary expansion. This has the effect of pushing up the nominal rate of interest and may prompt the Central Bank action to lessen the rise in interest by further monetisation of the debt.

However, it is no longer a controversy that there exists a tight positive relationship between unwarranted monetary expansion and the rate of inflation in an economy.

2.2. SCOPE OF OPEN MARKET OPERATIONS

The fact that Treasury bills are just one of the many items included in the monetary base equation, though the most significant, may not guarantee ultimate control of the

monetary base by the Central Bank if its market size by volume is relatively narrow. Be that as it may, control over just one item in the monetary base equation as important and flexible as Treasury bill sales and purchases can be just as good as assuming definite control over all accounts. Other items of course are able to push the monetary base in different directions but these can be offset through defensive open market operations.

For open market operations sales and purchases to be useful to the policymaker, the Treasury bill rate must be lucrative enough to attract as many sales conforming to the whims of the monetary authority. Since the Central Bank can only put the Treasury bills for sale and make them that attractive in terms of interest tagged on them, policy suffers and displays the same shortcomings of that person who would take the horse to the water, but cannot make him drink.

In the commercial banking system it is probable that banks may keep more than the legal minimum requirement reserve ratios. If commercial banks are highly liquid it would take more time and larger volumes of Treasury bills sale for the Central Bank to make open market operations a potent tool of monetary policy for restraining money supply. Hence Central Bank control may be impaired by excess liquidity of commercial banks. Although this would mean

that banks are tying up assets in an unprofitable manner, it is nevertheless real. The other extreme is that the Central Bank would have fixed the legal minimum reserve requirements already too high to be tolerated. Here open market sales of Treasury bills to the non-bank public would certainly be most effective in restraining money supply.

Treasury bill sales to the non-bank public has the effect of contracting money supply to the magnitude the excess reserves are able to expand the money supply in the commercial banking system, that is (1/MRR)x(ER) where MRR denotes the minimum reserve requirements and ER is the excess reserves.

2.3. OPEN MARKET OPERATIONS UNDER THE FOREIGN EXCHANGE AUCTION SYSTEM

The Treasury bill denomination was K10 000. Participants in the Treasury bills market comprised commercial banks and the non-bank public which essentially included the non-bank financial intermediaries. The non-bank public held Treasury bills constituted the smallest proportion as contrasted with those held by the Bank of Zambia and the commercial banking system (see figure: 2.1.).

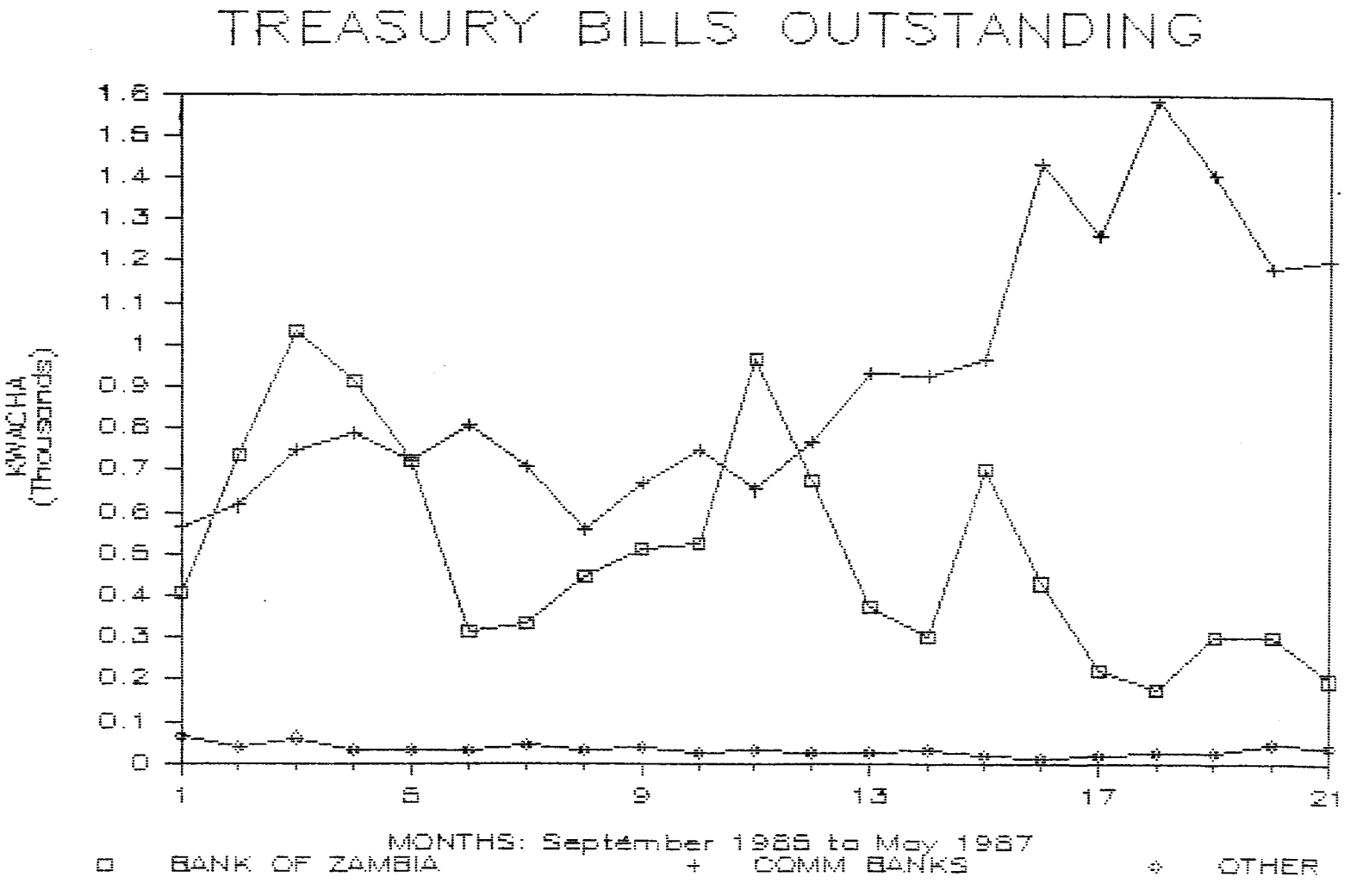


Figure: 2.1 The non-bank public held Treasury bills constituted the smallest proportion as contrasted with those held by the Bank of Zambia and the commercial banking system. This minimized the effectiveness of open market operations in its role to reduce money supply.

The total volume of trade in Treasury bills ranged from K1033 million to K1875 million against Bank of Zambia held Treasury bills which ranged between K175 million and K1030 million (see Appendix One table: 4 for actual figures). The average Treasury bill rate rose from 9.0 percent to 14.5 percent shortly after the introduction of the active open market operations in September 1985. By December 1985 the Treasury bill rate had reached 24.0 percent and it struck its highest rate of 28.0 in January 1987.

According to the Bank of Zambia 1985 annual report, it was the stated policy that the regulation of money supply in the economy be accomplished through open market operations in the main. The other traditional instruments of monetary policy were to assume only a supportive role.

However, empirical evidence suggests that not only did open market operations prove to have a dismal effect, but also retrogressive towards the desired goal of principally, restraining monetary growth. For one thing, there were transactions in the Treasury bills market without sustainable and systematic targets by the monetary authority to suggest just how much liquidity the Bank wished to pump in or out of the beleaguered economy in compliance to IMF conditions.[6] As a result of course, the Treasury bills volumes sold or purchased did not reflect monetary policy.

6. See Chitundu's Monetary Administration in Zambia September 1985 - March 1987. A review.

Even the treasury bill rate did not come into being as a result of a calculated effort on the part of the Bank to reflect desirable monetary conditions of the time (see table: 2.1 below). Table: 2.1 displays a cluster of Treasury bill aggregates which were sold and purchased in the Treasury bill market within the month of February 1987 on a daily basis. No analytical care is taken to highlight the two main holders of Treasury bills, that is, the non-bank public and the commercial banks. The two have varying degrees of influence on money supply. This lack of enthusiasm as portrayed by the monetary authority could in part be explained by the fact that the foreign exchange system did not win the favour of the Central Bank authority prior to its implementation.

For instance, in the first quarter of 1986 money supply increased by 19.0 percent as compared to the targeted rise of 2-3 percent. Given this result of tighter money supply stance was supposed to be adopted in the second quarter through defensive open market operations in order to bring the money supply figures on target. Alas, during the second quarter of 1986 money supply grew even further by 8.3 percent compared to the 'targeted' 4 percent increase. During the second quarter, the Central Bank increased its holdings of Treasury bills by 57.8 percent while commercial banks holdings grew by 5.9 percent while the non-bank public holdings of the same fell by 38.8 percent. This trend only

TABLE:2.1 BANK OF ZAMBIA MONTHLY GRZ TREASURY BILLS BASIC DATA
MONTH ENDED 28TH FEBRUARY 1987

DATE	SALES	PURCHASES	MATURITIES			HOLDINGS		
			COMM BKS + OTHERS	BOZ	TOTAL	COMM BKS + OTHERS	BOZ	TOTAL
31/1/87	B/F							1508
2/2/87	96.0	38.30	29.58	0.42	30.0	1310.0	167.0	1478
3/2/87	29.0	44.70	0.03	0.37	0.4	1310.0	167.0	1478
4/2/87	-	-	28.30	42.70	71.0	1284.7	121.3	1407
5/2/87	106.0	4.60	17.30	50.70	68.0	1367.8	47.2	1416
6/2/87	148.0	5.10	116.80	12.20	129.0	1394.0	41.0	1436
7/2/87	-	39.80	-	-	-	1354.2	80.8	1436
9/2/87	42.0	0.04	-	-	-	1395.8	39.2	1436
10/2/87	25.0	11.30	-	-	-	1410.0	25.0	1436
11/2/87	23.0	26.90	11.80	5.20	17.0	1425.1	11.9	1438
12/2/87	26.0	34.10	16.88	0.12	17.0	1400.0	40.0	1441
13/2/87	89.0	10.30	110.40	2.60	113.0	1368.4	12.6	1382
14/2/87	-	10.70	-	-	-	1358.7	23.3	1382
15/2.87	172.0	10.75	22.88	0.12	23.0	1567.3	9.3	1517
16/2/87	176.0	9.20	82.83	0.17	88.8	1592.2	11.6	1804
17/2/87	191.0	45.20	192.00	10.00	202.0	1545.4	47.6	1593
19/2/87	121.0	33.10	-	-	-	1632.9	49.1	1682
20/2/87	89.0	0.20	-	-	-	1720.7	2.3	1723
21/2/87	-	14.60	-	-	-	1706.1	16.9	1723
23/2/87	21.0	13.70	-	-	-	1713.2	16.8	1730
24/2/87	66.0	11.70	-	-	-	1767.3	14.7	1782
25/2/87	12.0	40.20	0.05	-	0.05	1729.5	44.5	1784
26/2/87	27.0	36.80	-	-	-	1729.6	54.4	1784
27/2/87	9.0	48.70	-	-	-	1690.0	94.0	1784
28/2/87	-	80.90	-	-	-	1609.1	174.9	1784

Source: Bank of Zambia

served to fuel monetary growth largely because commercial banks holdings of Treasury bills were growing while those of non-bank public were dwindling.

Open market operations which was adopted as the main quantitative tool of money supply reduction could not work towards this objective because the Treasury bill market was primarily used to finance the government budget deficits. From the inception of Treasury bill market in September 1985, whatever volumes of Treasury bills which were sold by the Central Bank to the Commercial Banking System went to finance the government budget deficit, inevitably contributing to monetary expansion. Besides, efforts by the Central Bank to syphon out excess liquidity in the economy through the sale of Treasury bills were on all occasions defeated by the government's ability to switch into an overdrawn position with the Bank. This was inadvertently so as this was a reflection of the rising financing requirements in working capital brought about by inflated prices which in turn were a result of the depreciation of the kwacha on auction floor.

Since the Central Bank was at all times obliged to purchase Treasury bills offered for discounting, the Treasury bills acquired by the Bank were determined by the commercial banks and the non-bank public. Given that the initiative was left to the holders of Treasury bills to

liquidate or not, open market operations as a policy instrument was greatly emasculated. This phenomenon tended to make open-market operations essentially a passive tool of monetary policy.

The spread rate between the Treasury bill rate and its closest rival, the 3-6 month fixed deposit rate was always positive throughout the auction period in favour of the former. The proportion of commercial banks-held Treasury bills to non-bank public held Treasury bills was so heavily tilted towards the commercial banking system (see figure: 2.1 above).

Given that the commercial banking system was highly liquid during the foreign exchange auction period, the sale and purchase of Treasury bills in open market did not constitute a powerful instrument to restrain money supply.

2.4 POLICY DIRECTIONS

It is evident that the Treasury bill market for the non-bank public was too narrow to serve a meaningful purpose of restraining monetary expansion. The market was heavily monopolised by the commercial banking system which in turn employed Treasury bills as reserves. This in many ways assisted in monetary expansion through the multiplier process given that interest is earned upon maturity of

Treasury bills. So, to tackle the excess liquidity problem as it obtained in Zambia during the floating exchange rate system, more would have been achieved if the huge deposits of parastatals and statutory bodies were instead invested in Treasury bills which promised a superior return on capital. This way, money supply growth would have been reduced through increased Treasury bills holdings of the non-bank public. A firmer grip on the growth in money supply would have thus been realised by dint of a wider Treasury bills market. The requirement to this success was to come forth through education and persuasion of owners of such deposits about the benefits accruing to holding of Treasury bills as compared to any other conventional interest bearing asset. Indeed, through the Zambia Industrial and Mining Corporation (ZIMCO), as the holding conglomerate, it would be possible for the Central Bank to persuade specifically those parastatal companies which operate profitably with manageable debt equity ratios to shift their funds from fixed deposits and invest into Treasury bills. The significance of this undertaking can be brought into sharper focus when one considers the fact that parastatals owned about 33.9 percent or K839.050 million while statutory bodies had approximately 4.9 percent or K119.828 million as deposits in the commercial banking system at the end of June 1986.

Given following regression results as:

(a) Commercial banks held Treasury bills against Treasury bill rate at end of period monthly from September 1985 to May 1987.

Y = 02359966 - 0.000013X Adjusted R squared = 0.0128856
(0.0000277) (0.0381518) number of observations = 21
degrees of freedom = 19
t = -0.0003

Referring to the t-table we find t=2.093 at 5 percent level of significance. We therefore accept the null hypothesis that there is no relationship between commercial banks held Treasury bills Treasury bill rate at the 5 percent level of significance.

(b) Non-bank public held Treasury bills against the spread rate between Treasury bill rate and 3-6 month deposit rate.

Y = 0.0316799 + 0.00004651X Adjusted R squared = 0.1590402
(0.0139262) (0.0002453) number of observations = 21
degrees of freedom = 19
t = 1.896

Again, referring to the t-table we find t=2.093 at 5 percent level of significance. We therefore accept the null hypothesis that there is no relationship between non-bank public held Treasury bills against the spread rate between Treasury bill rate and 3-6 month deposit rate at 5 percent level of significance. Also graphically, see figure: 2.3. below. The adjusted coefficient of determination is too low

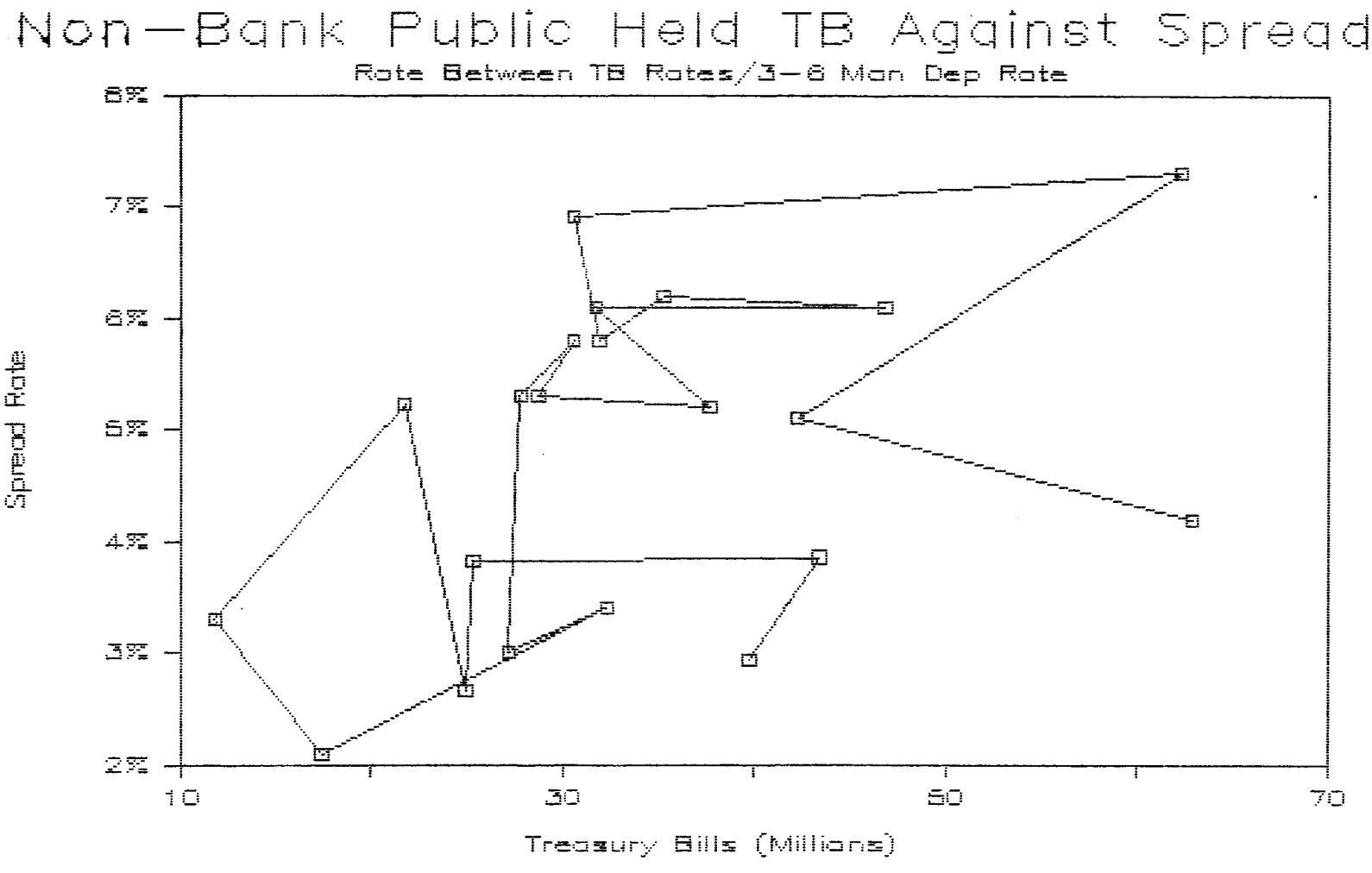


Figure: 2.2 The behaviour of non-bank public seem to suggest indifference and perverse response to attractive interest rate offered on Treasury bill. One would have expected greater purchases when the spread rate rose.

as to suggest any meaningful relationship between the variables under scrutiny. It can be deduced that neither the commercial banks nor the non-bank public were sensitive to changes and attractiveness of the Treasury bill rate during period of the floating of the kwacha against the United States dollar. For this reason and others, a law or regulation should be imposed to govern those at the head of parastatals and statutory bodies to be liable to a penalty when found guilty of promoting economic stagnation or collapse for not investing institutional funds into the highest interest bearing assets.[7]

The Treasury bills denomination of K10 000 is surely beyond the reach of a common man in this country. A lower price of a Treasury bill would have strengthened the policy makers hand in open market operations.

It is to state the obvious that open market operations failed to function as a tool with which to restrain monetary growth, not only due to lack of conscious effort to make targets of what volumes in Treasury bills were necessary to restrain or halt monetary expansion, but also the seemingly uncaring attitude which the monetary authority took during the sacrosanct period. The state of the art in controlling money supply through open market operations lies in the monetary authority's character in terms of dedication and

7. Better still, a rigorous outreach to educate department and parastatal heads may be preferred.

resolve to achieve the set targets. This is done by the continuous use of feedback information to adjust and adapt to the ever changing moods of monetary aggregates thereby selling and purchasing the right amounts of Treasury bills over time. Setting monthly money supply targets from annual money supply targets usually eases the problem. The volumes of Treasury bills sold to the non-bank public are then recorded on a daily basis bearing in mind the monthly target money supply as illustrated in table:2.2 whose format is as below:

TABLE:2.2 MONTHLY MONEY SUPPLY TARGETING THROUGH TREASURY BILL PURCHASE/SALES FORMAT

End of period	TB sales	TB purchases	TB maturities	Target money supply	Target mid-point	Actual money supply	Discrepancy
1988							
Jan							
01							
02							
03							
..							
..							
..							
31							

The 'discrepancy' shows the direction in which the monetary authority should proceed in next round of open market operations. If the 'discrepancy' is positive then more Treasury bills must be sold and in the case of a negative figure then purchases ought to be made in the Treasury bills market.

Open market operations potency as a policy instrument with which to restrain money supply was severely emasculated by the frequent untimely discounting of Treasury bills by holders. To the extent that the Central Bank normally acts as lender of last resort, it usually obliges requiring banks to furnish it with reasons for borrowing the requested for amounts. Discounting of Treasury bills by holders could be made to involve the same procedure especially with respect to the commercial banking system.

All corrective measures enumerated above would come to nought if the end use of funds raised from sale of Treasury bills is to finance government budget deficit. Since by the IMF conditions reduction of money supply was the kingpin, the Bank of Zambia Act could have been extended to include a provision which would have empowered the Central Bank to issue its own paper for monetary administration in place of Treasury bills.

Since the interest which accrues on the Treasury bills comes from the government to Treasury bill holders, it stands to reason that open market operations do serve to increase the budget deficit. To this end the instrument can only truly serve the purpose of restraining money supply if the rate at which the commercial banking system can create money in the economy is less than the interest offered on the Treasury bill and if the initial position of the government budget is a balanced one over a given period of time.

The government budget deficit is a cost to society in the sense that taxes have to be higher to pay for interest accruing on government debt. Besides, high taxes lead to compliance costs and economic inefficiency. This is mainly due to the fact that an increase in government deficit leads to higher interest rate, it distorts investment choices and reduces investment over what it would have been by crowding out private investment. To the extent that increases in Treasury bill holdings raises interest rates and lowers investment, future levels of capital stock and income are reduced. Government budget deficits must be kept to the barest minimum or be done away with altogether.

2.5 CONCLUSION

It would seem a bit grotestique to hold that there existed a well coordinated policy emanating from both the political and monetary authorities in regard to contracting money supply utilising open market operations as the main policy instrument. The lackadaisical attitude of monetary policy makers was more real than apparent when a team of Bank of Zambia personnel which went to study the Ugandan version of foreign exchange auction passed the sentence that the IMF deal was unworkable for various reasons shortly before the same system was introduced. It comes as no surprise that the effectiveness of open market operations to restrain monetary growth was severely compromised and in which stead the tool assumed the role of liquidity creator. What was required to be done before the introduction of a floating exchange rate system was to conduct feasibility studies on the macroeconomic policy options incorporating empirical simulations covering the four instruments of monetary policy here being examined.

In the next chapter, the legal minimum reserve requirement changes as an instrument of monetary policy is discussed. This instrument was first introduced in 1935 by the Federal Reserve Bank of the United States of America because the open market operations and the discount

mechanism were found inadequate to help the economy absorb the excess liquidity of the commercial banking system.

CHAPTER THREE

3. LEGAL MINIMUM RESERVE REQUIREMENT CHANGES

3.1 THEORETICAL UNDERPINNINGS OF MINIMUM RESERVE REQUIREMENT CHANGES.

The legal minimum reserve requirement changes is a quantitative monetary policy tool used by the Central Bank authority to vary the commercial banking systems ability to expand credit and deposit creation. The legal minimum reserve requirement changes impinge directly on the money multiplier which essentially links reserves to money supply in the equation.

$$M2 = \left[\frac{(1 + rc + t)}{(rd + re + rc + rt(t))}\right] X(R + C)$$

where the first square bracket refers to the money multiplier and the second bracket denote the monetary base. Changes in rd and rt can be used to offset counteracting forces emanating from other money multiplier variables. In the main, however, the effect is to hamper commercial banks' ability to make new loans and deposit creation.

Commercial bank liquidity is a measure of ease with which banks can meet their obligation for withdrawals by deposit account holders. From the beginning of commercial banking history much of what was believed lent support to the idea that it was for the common good banks maintained a certain level of reserves. This, it was held, ensured adequate liquidity for the account holders in times of need. Probably this provided the necessary rationale for the monetary authority to set up liquidity ratios for observance by the commercial banking system to avoid imminent bankruptcy. Coats jnr and Khatkhate (1980) have argued that requiring banks to keep a specific amount of reserves essentially means to deprive them some of their liquidity. To them, the so called reserves would no longer be available to redeem the adversely affected banks. Other things being equal, in this role we are able to see one of the major functions of legal minimum reserve requirements.

As expected, the second function of minimum reserve requirements changes is to regulate money supply. Unlike open market operations, changes in rd and rt do have an announcement effect which attracts immediate attention and has a tendency of causing overreaction within the banking system. An increase in the reserve requirement ratios reduces the excess reserves available to the commercial banking system on which they base the loans and investment. This will in essence have the effect of contracting credit

and curtailing the incipient deposit creation, hence restraining money supply growth. Of course, deposit creation can continue for as long as there exists excess reserves in the commercial banking system. Deposit creation will come to a halt when there are zero excess reserves and the contractionary process will be set in motion when there are negative excess reserves.

As a matter of illustration a hypothetical scenario can be put forward to demonstrate the effectiveness of this policy instrument. Assume that a partial balance sheet is reflected in the statement of assets and liabilities below. Commercial banks taken together, complying with legal reserve minimum requirements of rd = 0.15 and rt = 0.08.

TABLE:3.1. Consolidated commercial banks balance sheet as at 31 December, 1985.

ASSETS		LIABILITIES	
Reserves	935 838 927	Demand deposits	411 983 489
Loans & investments	910 095 032	Savings & time deposits	1 233 950 470
		Capital account	200 000 000

a change in legal minimum reserve requirements to rd = 0.18 and rt = 0.10 would leave the banks with excess reserves of

total reserves	K 935 838 927
less required reserves 0.18(411983489)+0.10(1233950470)	= - K 197 552 075
	K 738 286 852

Thus, since the excess reserves are positive, it stands to reason that deposit creation may continue. However, the commercial banking system would experience a scarcity of reserves down by K197,552,075 simultaneously. Thereafter deposits could increase by a multiple of K738,286,852, this being the amount of excess reserves. This policy instrument has the effect of not only causing massive and abrupt changes in the availability of credit within the banking system, but also capable of causing serious disruptions and wide fluctuations in prices of financial assets. It is for this reason and many others, that legal minimum reserve requirement changes are seldomly resorted to by policy makers.

Minimum reserve requirements are usually fixed by statutes, hence the due recourse to Acts of parliament when adjustment are being sought. Other things remaining the same, liquidity ratios are not particularly specified and regulated by statutes as they are at the discretion of the monetary authority.

3.2 LIMITATIONS OF VARIABLE LEGAL MINIMUM RESERVE REQUIREMENTS

Fractional reserve banking is a feature of modern commercial banking which enables banks to lend amounts in excess of the legal minimum reserve requirements which certainly reduces the banks loanable funds. To prefer a 100 percent required reserves as Friedman (1958) advocates would evidently transmogrify bankers into goldsmiths of early banking system and reduce commercial banks to cash warehouses. This action would in effect eliminate altogether monetary expansion through the money multiplier process.

In any case, commercial banks are profit maximising enterprises. If legal minimum reserve requirements happen to be unreasonably high, banks would then be forced to hold more idle balances on which no interest accrue. Otherwise, banks would like to deploy the bulk of their money in interest bearing assets for greater profitability.

The effect of adjusting the reserve ratios upward is evenly widespread in an economy. For this reason and others, the adverse impact this policy instrument may bring to bear could harm the very sectors of the economy the policy makers would rather prefer to be unaffected.

Reserve requirements changes should be infrequent to allow commercial banks plan with certainty just how much money should be for lending and just how much to hold as liquid assets from one period to another.

The degree of control which the Central Bank authority has on the money multiplier depends on how the ratios are defined and what constitutes the required reserves.

The averaging period also matters. The monetary authority could be able to increase the precision of its control of money supply to exacting tolerances if the accounting period is sufficiently short.

The potency of reserve requirements' influence on the money multiplier at whatever level depends on commercial banks' compliance. Effective penalties for non-compliance can be instrumental in achieving the desired objective.

High level of commercial banks excess liquidity normally renders piecemeal adjustments of minimum reserve requirements ineffective in contracting money supply, since excess reserves ought to be negative in order to induce a contractionary impact.

The more cash is held by the public the greater the value of rc. This can ultimately affect deposit multiplier

and the money multiplier in general. A large value of rc in the money multiplier will have a telling effect on rd and rt, such that as more people hold cash during inflationary periods for transactions and speculative purpose in the underground economy, the two ratios will tend to shrink the money multiplier. This may transmit restraining impulses on overall money supply growth.

3.3 PERFORMANCE OF LEGAL MINIMUM RESERVE REQUIREMENTS CHANGES DURING THE FLEXIBLE EXCHANGE RATE REGIME

The legal minimum reserve requirements were adjusted thrice during the auction of foreign exchange period. The first change was made in April 1986 during which time the reserve requirements were raised by 3 percentage points on demand deposits from 15 percent to 18 percent, while savings and time deposits were increased by 2 percentage points from 8 percent to 10 percent. The minimum reserve requirements were again increased by 2 percentage points on the two categories in August 1986. In November 1986 the reserve requirements were adjusted upward for the last time by 5 percentage points from 20 percent on demand deposits and from 12 percent on savings and time deposits.

However, the liquidity ratio was fixed at 40 percent for the commercial banking system throughout the period when the kwacha was allowed to float against the American dollar

(see figure:3.1 below). Evidence adduced from figure: 3.1indicates that the 40 percent liquidity ratio was not obeyed at certain points in time. Alas, as pointed out earlier, these settings of policy instruments did not reflect the true spirit of monetary conditionality clauses as agreed upon with the IMF/World Bank: there lacked genuine calculated monetary regulation and targeting.

Other things being equal, evidence seem to suggest that in spite of all else the minimum reserve requirements changes were essentially effective in reducing the value of the money multiplier. Troughs are registered each time the legal minimum reserve requirements were adjusted upward (see figure: 3.2 below). Given that total broad money supply (M2) is a product of the money multiplier (X) and the monetary base (B), and since M2 and B are given in Appendix One table:9, values for X can be calculated. The multiplier value are as portrayed in figure 3.2.

The virtual lag between the downward trend of the money multiplier movements were partly due to the difference between the date of ratification by the political process in parliament and the effective date on which the commercial banks complied with the operating directive from the monetary authority. taking into account the fact that banks are by Section 29 (3) of the Bank of Zambia Act allowed not less than ten days in which to comply. The legal minimum

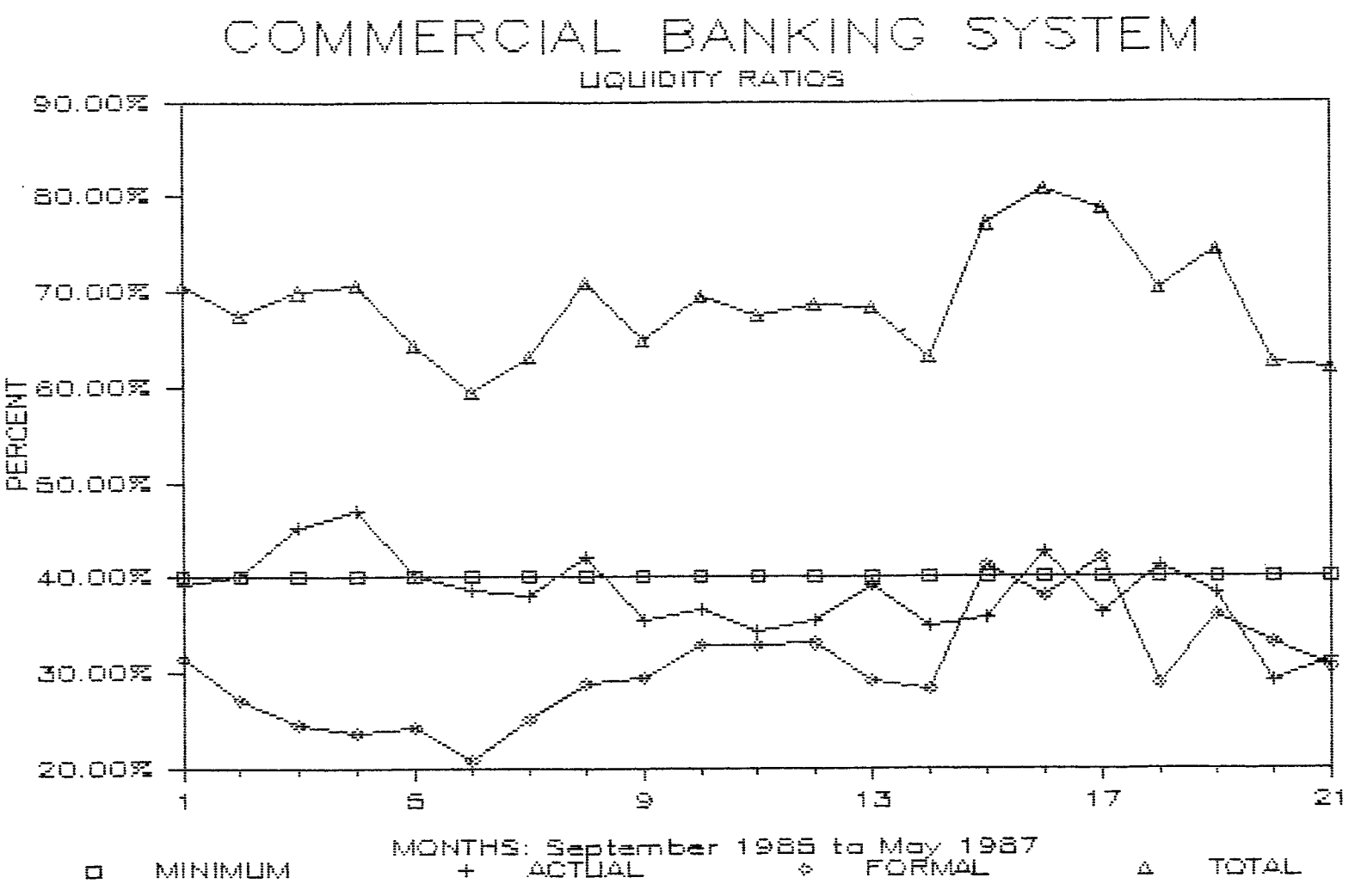


Figure: 3.1 The liquidity ratio was fixed at 40 percent throughout the referenced period for the commercial banking system. Here the total liquidity ratio outstrips the minimum required ratio by far signifying an over liquid commercial banking system.

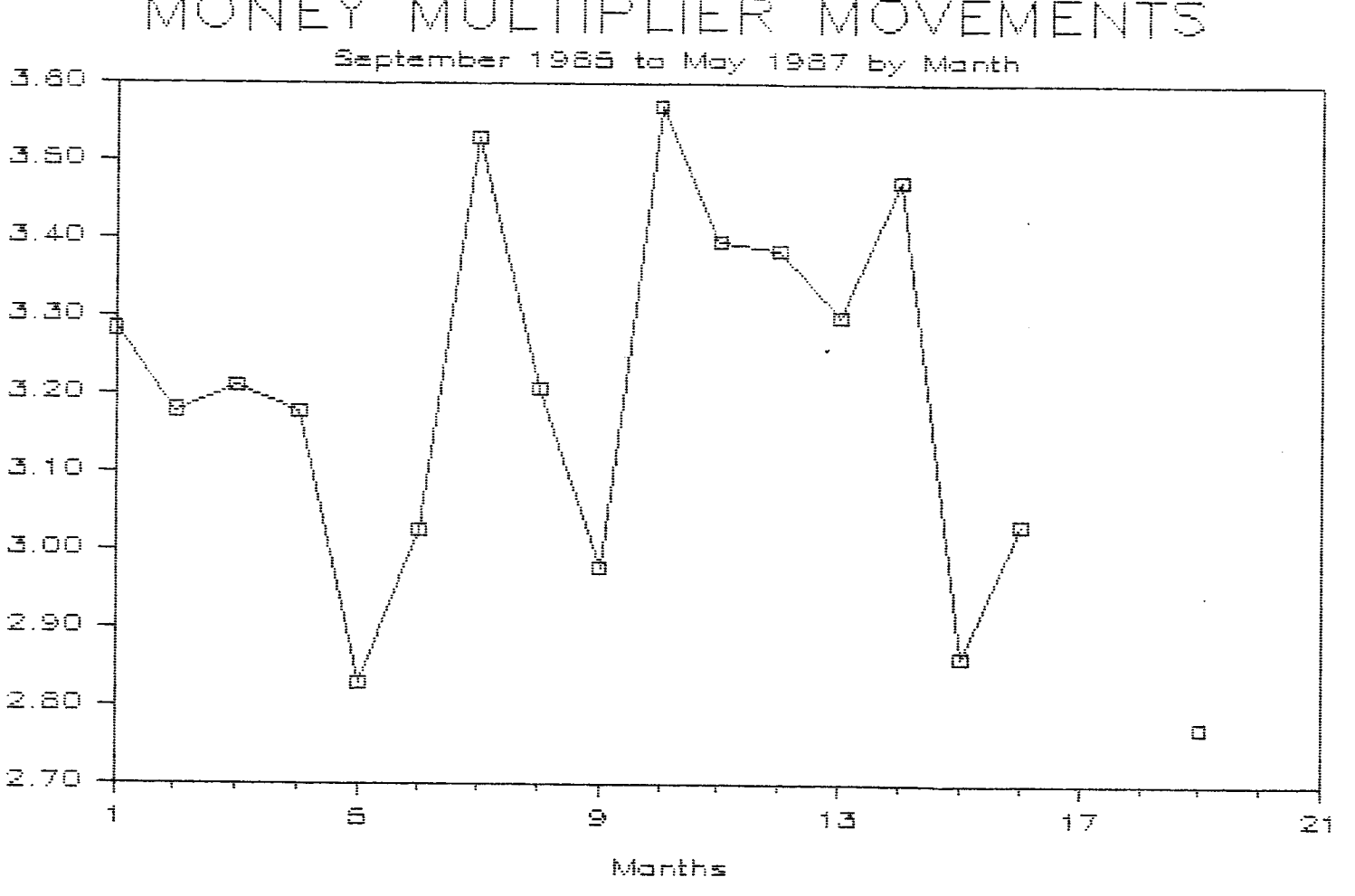


Figure: 3:2 The money multiplier shows troughs and peaks, the former being a natural response when minimum reserve requirements are adjusted upwards. When the money multiplier falls the money supply is reduced.

reserve requirements adjustments took approximately one month to be acknowledged as proposed by the Central Bank. Indeed, the multiplier can change either because of the change in the money supply or because of change in the reserve requirement ratios. It ought to be added that the money multiplier does respond to interest rate adjustments through rt, albeit with a time lag. Other Factors that influence the money multiplier independent of rd and rt are rc and re. It is also logical to explain the wide swings in the money multiplier movements in terms of the averaging period which was fixed at one month. As already noted, the shorter the accounting period the greater the precision of monetary control through the regulation of the money multiplier. ultimately, the absence of money multiplier targeting simply aggravated the whole situation.

Currency outside banks rose by 118.8 percent against an increase of 25.9 percent of currency at banks from September, 1985 to May 1987. The trend recorded in the currency in circulation as portrayed in figure: 3.3. below shows a general tendency for currency outside banks to rise while the currency at banks only reflect marginal deviations from the normal constant level. As earlier noted, the greater the value or rc the bigger the negative impulses impinged on the money multiplier, hence the money supply restraint.

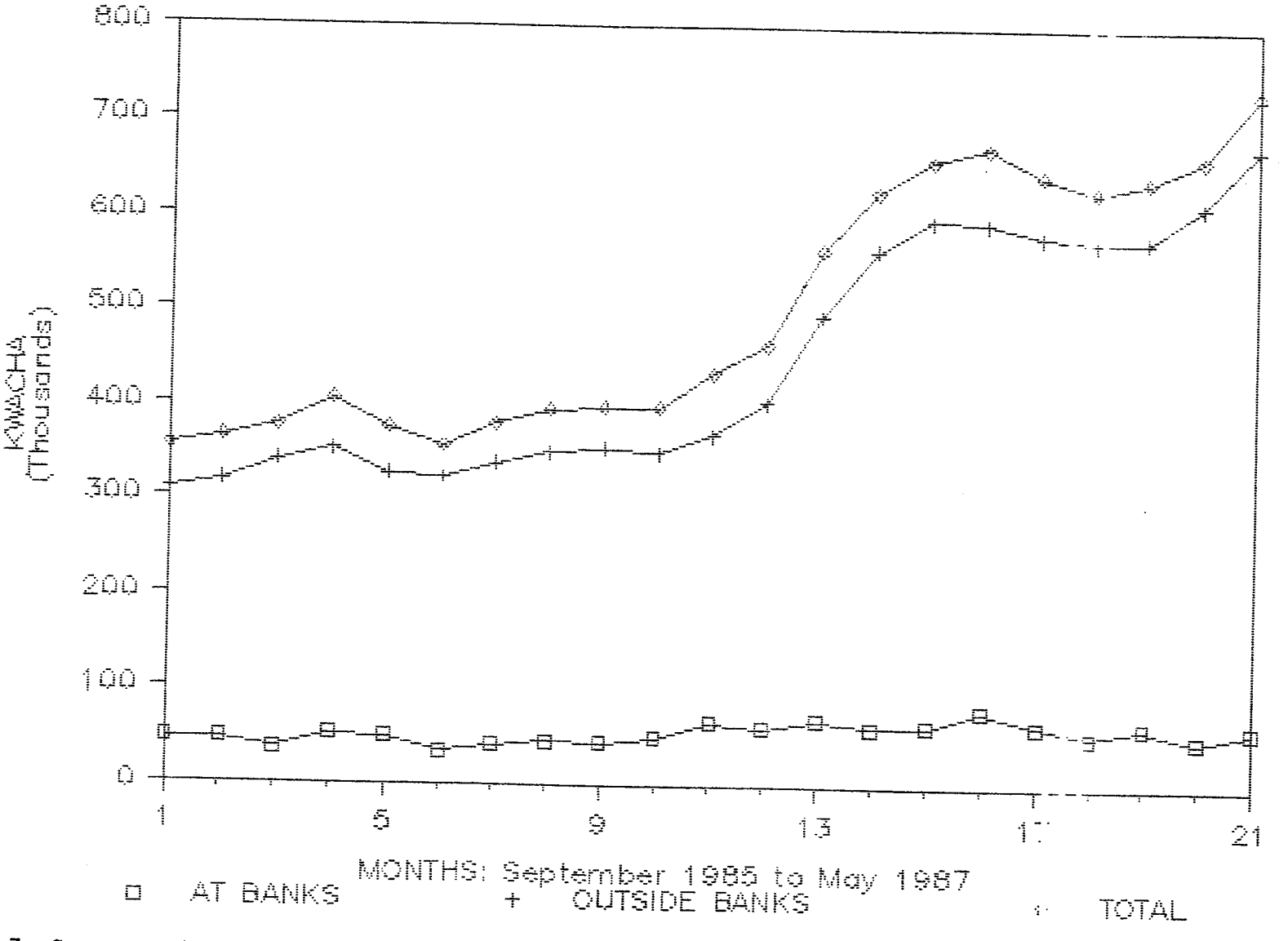


Figure: 3:3 Currency in circulation comprised currency at commencial banks and currency outside banks. From September 1985 to May 1987 currency outside banks shows a general tendency to rise while currency at banks showed the tendency to remain at constant level. In essence the total currency in circulation rose almost parallel to the currency outside banks.

During the period when the kwacha floated against the American dollar, demand deposits grew by 92.7 percent while savings and time deposits increased by 144.1 percent. This exerted an expansionary influence on the money multiplier through rt and rd hence the money supply growth.

3.4 POLICY DIRECTIONS

To the extent that the money multiplier was characterized by wild fluctuations during the period under study, the monetary authority would do well to reduce the accounting period. The great amount of paper obliging requiring banks to report the reserve ratios on daily basis to the Central Bank would have greatly strengthened the authority's grip over the money multiplier and this position can further be reinforced if effective penalties were brought to bear on the culprits within the commercial banking system.

The concept of targeting the money multiplier could be given greater meaning if the monetary authority is able to visualize the macroeconomic goal through the manipulation of monetary aggregates depending on the interaction of the money multiplier and the monetary base. To this end, the Central Bank might do well to construct a table of events to chart the money multiplier movements. Hypothetically thus:

TABLE: 3.2. Money multiplier targeting

End of period 1988	Variable instruments setting rd	re	rc	rt	t	Target money multiplier	Target mid-point	Actual	Error
Jan									
01	0.40	-	-	0.08	0.10	3.0-3.2	3.1	3.3	0.2
02	0.40	-	-	0.15	0.12	3.0-3.2	3.1	3.1	0.0
03	0.40	-	-	0.18	0.15	3.1-3.3	3.2	3.3	0.1
..	.	.	.	.	.	.	.	.	.
..	.	.	.	.	.	.	.	.	.
..	.	.	.	.	.	.	.	.	.
31	.	.	.	.	.	.	.	.	.

What is implied in this table is the prospect that if the monetary authority wishes to target the money multiplier between 3.0 - 3.2 and by adjusting rd and rt, and a deviation of 0.2 is recorded, then the money multiplier needs to have rd and rt adjusted downward so as to get as close as possible to the target midpoint 3.1.

Given the strategic importance the agriculture sector has in the country's economic survival, it would appear a lot wiser to take into account the seasonality of farmers'

loans obtainable from the commercial banking system. That is, the reserve ratios should be lowered during the peak periods for commercial banks to afford the farming community adequate loans.

3.5. CONCLUSION

Legal minimum reserve requirement ratios adjustment upwards does deprive commercial banks excess reserves upon which they base their loans and advances and investment. However, the length of the accounting period, effective penalty for circumventing the reserve requirement ratios and the assets used in the definition of required reserves do consolidate the effectiveness of this policy instrument.

The legal minimum reserve requirements changes is a reliable effective instrument of monetary policy. The effect of restraining money supply through the reduction in size of the money multiplier would have been more pronounced if piecemeal adjustment strategy was not advocated; the minimum reserve requirement ratios should have been raised to the point where they were to be seen to bite. In the circumstance, the exceedingly liquid commercial banking system thus made the reserve ratios adjustments policy rather otiose.

The acid test of each one of the policy instruments is in verifying their empirical effectiveness vis-a-vis the received literature, but this is not all there is to monetary policy. The monetary authority's degree of commitment towards realising stated objectives must be total. In the next chapter, the performance of discount mechanism in an overly liquid commercial banking system is studied.

CHAPTER FOUR

4 DISCOUNT RATE POLICY

4.1 THE THEORY OF DISCOUNT RATE POLICY

The discount rate is a monetary policy instrument used to foster money supply goals in the liberalised economy by the Central Bank. It operates through raising or lowering the cost of Central Bank credit to requiring commercial banks which are in turn required to give reasons for their action. An expansionary (easy) monetary policy is reflected in a low discount rate while a contractionary (tight) monetary policy calls for a high discount rate.

A monetary authority's policy to increase money supply would imply a reduction in the discount rate. Eventually, this would have an effect of lowering the interest rates charged on a broad spectrum of capital and other assets found in the banking system. As it is to be expected, there would be an increase in borrowing which in turn would cause an expansionary thrust on money supply. Contractionary tendencies would be induced if the discount rate were raised. The question as to whether or not commercial banks would jump to the idea of discounting when the rate is low or not, is subject to debate.

However, the discount rate may have a significant influence on the money multiplier through the excess reserve ratio re. A low discount rate may require banks to hold less of excess reserves and in this case the money multiplier is bound to grow bigger. The opposite may hold when the discount rate is sufficiently raised.

Due recognition of the essence of the discount rate mechanism as a monetary policy instrument with which to regulate money supply can be appreciated when the years of bank failures happened to be the order of the day in early banking history are called to living memory. Commercial bank failures were rampant, in part due to the absence of a lender of last resort. Indeed, this is one of the major functions bestowed on the Central Bank. So, modern-day banking system allows member commercial banks, who for some reason or another find themselves in difficulty, to contain large unexpected cash withdrawals by their clients through discounting. In this circumstance, banks are permitted to use the discount window for temporarily increasing reserves to meet the demands for withdrawals, given adequate collateral. The interest charge is known as the discount rate.

4.2. LIMITATIONS OF DISCOUNT RATE POLICY

While the discount rate policy functions well as a temporary source of reserves in the face of severe shortage of bank liquidity, action in the opposite function may not be as obvious. The first reason is that loans and advances cannot be dished out at discount rates less than zero so as to entice requiring commercial banks to borrow from the Central Bank. The second reason is that while the requiring banks may be denied loans in periods of credit contraction, they cannot be forced to borrow in periods of recession. For this reason, analysts in this profession regard the discount rate policy instrument as cyclically asymmetrical. That is, its effects are more strongly transmitted when the economy is on the upswing of a business cycle than on the downward trend. Besides, requiring banks may resort to the Treasury bills market for liquidity by selling government security. Further, during a recession commercial banks may even hold on to additional excess reserves given an uncertain business climate. However, the lender of last resort function may override the role of monetary policy.

Discount rate changes go along with the announcement effect which at times cause problems when the banking community misread the intentions of the monetary authority. An increase in the discount rate may be taken for a Central Bank signal to further credit contraction even when the

action is for defensive reasons, that is, a move to keep the prime rate in tune with other market interest charges on borrowed capital.

Effectiveness of the discount rate policy is limited in the case of over-liquid commercial banking system. The reason is simply that an overly liquid commercial banking system may find no real use for extra liquidity from the Central Bank for which it would be charged interest.

The existence of time lags resulting from length of time it takes for the effects to be thoroughly transmitted through various media, principally through the pricing mechanism, from the point of adjustment of the discount rate to the time its full impact is felt, is another added dimension into the illusive efficiency of this policy instrument.

4.3. THE DISCOUNT RATE POLICY UNDER FLOATING EXCHANGE RATE SYSTEM

The advent of IMF/World Bank sponsored auction of foreign exchange also ushered in an era of decontrolled prices and interest rates. Individual commercial banks charged the rate which they deemed as appropriate and competitive on money they had to lend to their customers. The Central Bank Rate, therefore, in most cases constituted

the minimum interest charge within the commercial banking system. The reasons for the existence of this phenomenon, would be in part be explained by the fact that the commercial banking system had to contend with capital starved industries whose status was being made all the more worse off at every weekly auction of foreign exchange where the value of the kwacha fell continuously against the American dollar, besides, the real interest rates were grossly negative.

The advent of decontrolled interest rates in September 1985 also ushered in the following average structure of interest rates by the end of the year 1985: from 14.9 percent to 20.7 percent as the minimum interest rate on savings and time deposits and from 20.7 percent to 29.7 as the maximum interest rates on credit lines. For actual figures on interest rates during the rest of the period under review see Appendix One table:5 and figure: 4.1 below for a time series representation as from September 1985 to May 1987.

As of 31st October, 1985 discounted amounts as a percentage of deposits at the Central Bank only showed a moderate ratio of 40.96 percent. By December 1985, however, the ratio had fallen to 31.13 percent, and continued to wane registering 25.12 percent, 6.23 percent and 6.77 percent for

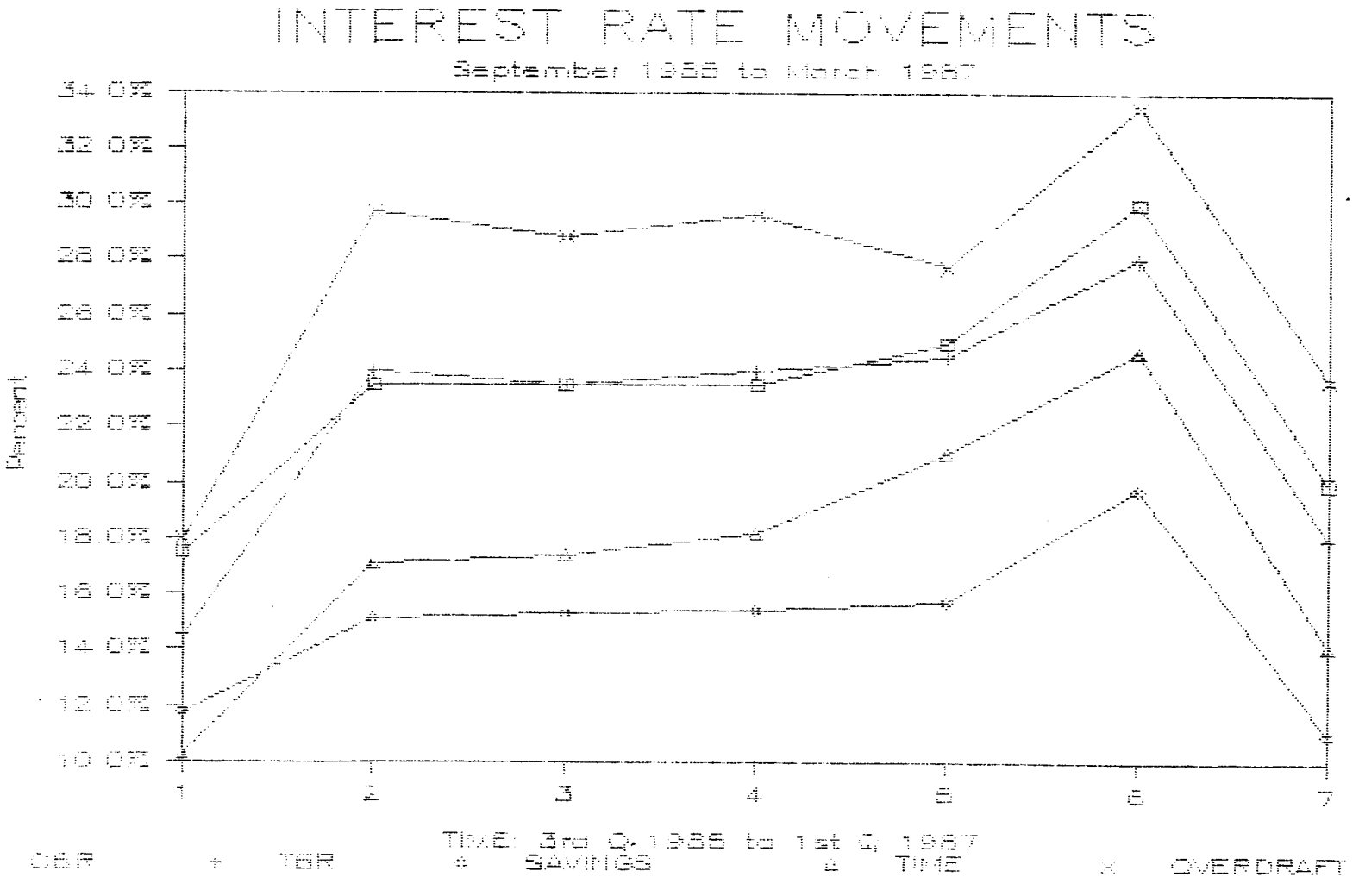


Figure: 4.1 Interest rates had a general tendency to rise in an apparent chase of the sustained rise in price level over time. All interest rates fell sharply when controls were reintroduced.

the period, months ending April 1986, September 1986 and April 1987, respectively. Quarterly, the fall in discounts in the commercial banking system could be explained by the over-liquid position of commercial banks (see figure: 4.1 above), and the prevailing high Bank Rates of the time which ranged from 17.5 percent in September 1985 to an all time high of 30 percent in November 1986. Even such high discount rates did nothing much to restrain money supply as empirical evidence seem to suggest otherwise.

During the period of foreign exchange auction system, most business concerns had to undergo a very excruciating restructuring process due to the rapid depreciation of the kwacha on the weekly auction floor and high interest rates on capital and other assets. Since this country lacks a well developed long-term capital market, and since most firms were heavily dependent on short term bank credit and overdrafts, some had to close down due to the fact that they could not sustain the incipient high debt-service ratios. Alas, high discount rates through commercial banks also served to increase production costs, and, rather than restrain these firms from commercial bank borrowing, at times the survival instinct prevailed. With a liberalised pricing system these companies had no other option except to pass on the cost to the consumer through escalated prices.

Since this period was characterized by hyper-inflation, lending interest rates were naturally high (see figure: 4.1 above). In 1986, the annual inflation rate stood at 61 percent with roughly the same figure being recorded for the year 1987. What should be borne in mind is that it is the real interest rate on which bankers and the non-bank public make decisions about whether to lend or borrow, to invest or save, to hold long term financial assets or cash balances. So, for commercial banks to recoup on lost purchasing power of their liquid assets in times of inflation, banks had to adjust their individual interest charges befitting the mood of the financial climate. By November 1985 the lending rates for some banks jumped to 34.5 percent as compared to lending rate of 17.5 percent prior to the liberalization of the economy in September 1985. By February 1987 lending rates had shot up to 38 percent in some commercial banks Indeed, these new levels of interest charges were deemed to be excessive by the Central Bank. So, with effect from 4th February, 1987 the Bank Rate was reduced from 30 percent to 20 percent and the maximum lending interest charge on bank loans was fixed at 25 percent through the reconstituted system of controls.

Of course, high discount rates were supposed to help stem commercial banks' inchoate desire for discounting with the Central Bank and in that way serve to halt expansion in bank credit hence money supply growth. The consumers who

were not only losing fast their purchasing power through the nascent inflation, but also smarting and gnashing their teeth under the 10 percent increase wage ceiling clinched in the IMF/World Bank deal, found this situation unbearable. When the staple food prices were increased as a result of partial withdrawal of subsidies on mealie meal, Food riots ensued on the Copperbelt and in the Midlands. Fifteen lives were lost in this fiasco.

4.4. POLICY DIRECTION

In this country where real interest rates are negative due the existence of hyper-inflation, the wanton pursuit of the ever rising price level with interest rate increments may not yield amicable macroeconomic results either in the short run or in the long range interests of a developing economy. The return on capital is interest: high interest charges on portfolio assets surely raises the cost of capital, hence the cost of production which in turn justifies high prices on products. Consumers end up with reduced purchasing power under inflationary conditions leading them to strike for higher incomes which in turn has the effect of increasing the cost of production or reducing profit of the firm which may lead to unemployment or further hikes in prices. It is for this reason and many others that the relaxed use of discount rate as a policy instrument is advised. In the circumstance, imposing a veto on all

discounts would have served in the best interests of restraining money supply.

4.5 CONCLUSION

Given the negative real interest rates arising from high inflation rates there was a strong tendency to raise the discount rate so as to catch up with the rise in price level. The phenomenon tended to reinforce inflationary trends. The economy displayed features of the Gibson's Paradox, such that it seemed logical that low discount rates would reduce the inflation rate which in turn would lay conducive conditions for monetary restraint. This predicament is dicey, hence the need not to insist on the use of this policy instrument for the purpose of reducing money supply; a veto would have served better.

The discount mechanism has been discovered to be an unreliable policy instrument with which to restrain money supply in an economy that is nursing simultaneously an over-liquid commercial banking system, hyper-inflation and decontrolled interest rates. In the next chapter, effectiveness of moral suasion in an incongruous environment of international and intra-national politics is examined.

CHAPTER FIVE

5 MORAL SUASION

5.1 THE THEORETICAL BASIS OF MORAL SUASION

Moral suasion is a monetary policy tool which is hard to classify, either into a quantitative or qualitative category. However, moral suasion is commonly known as 'open mouth' policy. It is designed to change the banking community and the non-bank public's behaviour by way of persuasion, through general speeches and news releases by the Central Bank authority.

What makes moral suasion tick, in the case of banks, is the implicit threat of more punitive action promised, should commercial banks choose not to comply or cooperate with the Central Bank's policy objectives. So, to the extent that the commercial banking community believes the monetary authority might in due course back up its requests with the use of qualitative or quantitative penalties, the banking community may end up cooperating in the Central Bank directed effort. For instance the monetary authority may request compliance to the directive that commercial banks should only lend or permit overdraft facilities to those customers who wish to bid for foreign exchange intended to

purchase capital equipment for agricultural purposes and no other. Commercial banks may oblige if threatened with loss of business when found wanting by the Special Investigation Team on Economy and Trade (SITET).

For the non-bank public, moral suasion may take the form of an outreach programme which seeks to explain and educate the general public on how to conduct themselves in the money market, given a specific scenario. At times, the Central Bank authority may feel committed to correct a mistaken impression which it thinks could jeopardise or vitiate monetary policy through testimony and news releases.

In a nutshell, moral suasion is a mild form of direct credit control where the Central Bank thrust on credit activities is exerted through verbal explanations.

5.2 LIMITATIONS OF MORAL SUASION

While it may be all that easy to persuade the commercial banking community and non-bank financial institutions, the case for the general public is to a great extent unpredictable. The whole weight seems to rest on the level of development of the economy thus far attained and the depth to which the general citizenry is perceptibly imbued with monetary economics in particular and economics in general. Thus, the more society displays ignorance on

the projected monetary authority's policy loss function, the less effective this policy instrument becomes.

5.3 MORAL SUASION UNDER THE AUCTION OF FOREIGN EXCHANGE REGIME

Prior to the introduction of a flexible exchange rate system, it was trite knowledge among policy makers that the exchange rate of the kwacha would depreciate, but not to go beyond the rate of seven kwacha to one US dollar. Indeed, this was not to be. By May 1987, the exchange rate had depreciated more than what was anticipated (see figure:5.1 below), and continued to sink against the American dollar to a level of 955 percent of its value before the inception of the auction system. For actual figures of exchange rate struck consult Appendix One table:8. It was evident therefore that the monetary authority had to tackle the problem of stabilisation of the exchange rate at one time or another in order to deal with incipient pressures on monetary growth brought about by inflationary trends which are in turn occasioned by excessive devaluation of local currency.

The employment of open market operations, legal minimum reserve requirement changes and the discount rate policy singularly and severally had since been found inadequate to

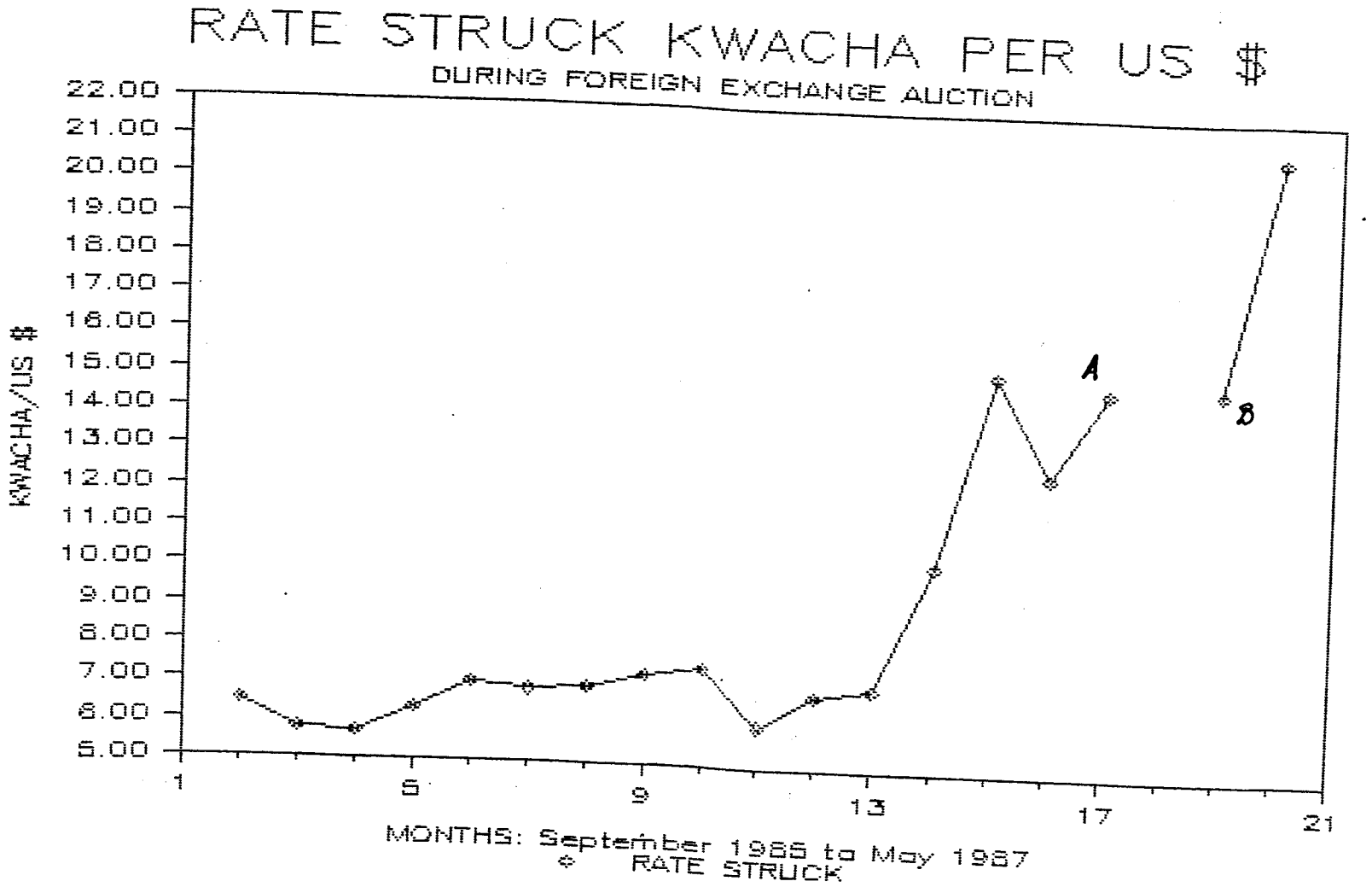


Figure: 5:1 The exchange rate struck in weekly auctions of the United States dollar (US$) showed some stability in the first 12 months. The Kwacha rate deteriorated as interference with auctions intensified. Bidders confidence was an essential ingredient in fostering stability. Points A and B indicate stop and resumption of auctions respectively before the IMF/World Bank programme was finally abandoned.

reduce money supply, let alone checking the flow of credit to the weekly auction floor. It was precisely to overcome the problem of delays in adjusting the minimum reserve requirements that in March 1987 when the weekly auctions were reintroduced after a hiatus of approximately two months that the Central Bank authority brought in a supplementary deposit scheme. By the terms of this scheme, commercial banks were invited to put 10 percent of their demand deposit liabilities, 7 percent of savings and time deposit liabilities outstanding with the Central Bank in order to tighten the lid on excess liquidity.

So, as compared to minimum reserve ratio adjustments, this supplementary deposit scheme had an immediate identifiable impact. By the first week of April 1987, total bank credit was reduced by K267.8 million through this scheme. As noted earlier, supplementary deposit scheme was a temporal measure which was intended to play a part in place of minimum reserve requirements changes which needed approval from the competent authority.

Even when the monetary authority imposed selective credit controls which required commercial banks to limit credit for foreign exchange bidding to 20 percent of the bidders' own balances, this failed to resuscitate the ailing Kwacha. This was mainly due to the fact that credit is essentially fungible in more than one respect. Evidently,

for as long as any businessman would engage in more than one classification of economic activity, it would be impossible to identify his acquisition of a bank loan with any other type of business he might choose to pursue.

However, persuading the non-bank public to conform with particular Central Bank policy goals so as to reduce money supply is a complex matter administratively. Other things remaining the same, specific measures designed and formulated to cut down a number of bidders from the weekly auction were to be employed with maximum accuracy. To this effect the Central Bank introduced a scheme involving a 40 percent interest free deposit of bid money as being essential to qualify one as a bidder. It was hoped that this move would eliminate very high bids, which were largely responsible for rapid depreciation of the kwacha against the American dollar, as high bids would require large sums of money in interest free deposits as collateral. Coupled with these regulations, the monetary authority insisted that bidders submit tax clearance certificates and evidence that the foreign exchange previously won had been spent on the purpose applied for.

To stem wreckless bidding the Central Bank had made a departure from the hitherto, marginal pricing to the Dutch Auction system in August 1986. Under the Dutch Auction system, each bidder whose bid was accepted, was to pay his

bid price for the foreign exchange sought. Participants in this type of auction were invariably to pay a price for foreign exchange much higher than the market clearing price, that is, the marginal price. Bids had also been published in newspapers with effect from 21st June, 1986 in the hope of exposing the bidders who were responsible for the rapid fall of the kwacha value against the US dollar, but to no avail.

To reinforce discipline in weekly auctions the Central Bank devised penalties for the successful bidder who failed to take the bid within a specified period. A penalty not exceeding 10 percent of the amount of the bid was imposed if the Foreign Exchange Management Committee (FEMAC) found a blatant abuse of foreign exchange. For a bidder who was to be found persistently flouting the arrangements, he was to be blacklisted for up to twelve months, during which time the individual was to be disqualified from participating in the weekly auctions.

Be that as it may, among the factors that could be held responsible for the excessive high bids was the question of trade sanctions against South Africa during the same period of auction of foreign exchange. 1986 was the year when the world looked forward to the most anticipated event - the collapse of white ruled South Africa - which never came to pass. Verily, here has been a nation in crisis, but capable

of exporting economic instability to her immediate neighbours in particular and the Southern region in general. Almost every week seemed to be a turning point and each incident a moment of truth. The issue of mandatory trade sanctions surfaced at a meeting of Commonwealth Heads of State and Government in the West Indies, and out of it came the Eminent Persons Group (EPG) which was assigned the task of striking a compromise with the Apartheid regime. The negotiated resolution of the Apartheid policy which ensued between the EPG and the regime in question collapsed. However, it was the resolve of the august body that the alternative to failure would be the imposition of comprehensive mandatory economic sanctions against South Africa. Of course, it was too much to expect change, with the same power structure in place, and with the same faces saying much the same things in that country. To accede that threats of mandatory economic sanctions by the Commonwealth statesmen would be sufficient to topple the South African Government without any indication from the super powers of the Western Civilisation conceding to the wisdom of economic sanctions was akin to saying that the constants of world politics were no longer more robust than the proposed variables. In fact, this was not the first time the Apartheid regime was going to defy an opinion from an organisation of such stature, her continued rule of South West Africa was in defiance of the United Nations Resolution 435.

The implications of this country opting for comprehensive mandatory economic sanctions had a nervous effect on the business community. This was obvious given this country's geographical configuration and reliable trade routes to the sea and beyond to her major trading partners. So, the news that trade links with South Africa would be cut did not augur well with the business community which depended on exports and imports to and from and through that country. In short, to the affected businessman, the message was clear to the effect that sooner rather than later he was going to be forced to do business with far and more distant trading partners using the most risky routes. All this spelt higher transportation and insurance charges among others. For such a businessman the best bet lay in maximizing on trade with South Africa, even if this would have meant bidding so high for foreign exchange in the remaining period before sanctions. Under such circumstances, persuading such bidders to do otherwise often remained elusive. Mutatis mutandis, these expectations were not the animal spirits, fancies, whims or hallucinations of businessmen, but the best judgements that could be given the available information.

Intra-nationally, the sudden replacement on 4th April, 1986 of the three key government proponents of the liberalisation programme by President Kaunda, added another dimension of uncertainty in the minds of the business

community and the auction system. These were the Minister of Finance, the Central Bank Governor and the President's Special Assistant for Economic Affairs. Invariably, the Head of State underestimated just how fragile the foreign exchange auction system really was. As a matter of course, the value of the Kwacha steadily slipped into decline causing the purposeful action of the new monetary authorities to arrest the Kwacha's fall to be perceived as a signal in this affair of the start of recurrent cycles of pressure and response which would inevitably lead to the final demise of the auction system.

Further, the President's public proposal to have the new Minister of Finance and the new Governor of the Central Bank to 'analyse' the auction of foreign exchange system with a view to arriving at a 'correct' value for the kwacha,[8] on May 17, 1986, could have done nothing to restore certainty in the auctions which were to follow but inexorably to drive bidders into a state of panic.

The interference which was displayed by the new Bank Governor in the auction of 19 July, 1986 was rather grotestique. 314 bids were rejected out of a total of 396 in order to prop up the value of the kwacha. Indeed, the kwacha appreciated from K8 to K5 to one US dollar. So was the abrupt increase in the total amount of foreign exchange

8. See Sunday Times of Zambia May 18, 1986.

on offer per week, from an average of US$9 million to US$22 million, did obligingly 'stabilise' the exchange rate in the subsequent auction to K6.08 to one US dollar (see figure: 5.2 below). As to be expected, the international donor community's reaction to these developments was by no means enchanting. By November 1986, Zambia had only drawn US$35 million out of the US$229 million standby loan agreed with the IMF in February 1986. This outcome only contributed negatively to the already thin and unsure auctions.

The recriminations and riots accompanied by looting that followed the removal of subsidies on mealie meal - the staple food-in December 1986, seriously did irreparable damage to the IMF/World Bank sponsored programmes. In the same month the Secretary General of the only Party UNIP had argued that the IMF/World Bank programme had brought 'untold misery' to the people of Zambia.[9] On January 28th, 1987, it was announced the foreign exchange auction system had been suspended. This action, however, merely compounded the system which was already in disarray. The World Bank President Mr. Barber Conable described the situation about the restructuring programme as 'in a state of confusion' when he visited Lusaka on 15 February, 1987.[10] In March 1987 when the auction of foreign exchange was reintroduced, the value of the kwacha rapidly deteriorated from K15 to

9. See also Parliamentary Debates of the National Assembly of Zambia.
10. See Times of Zambia February 16, 1987.

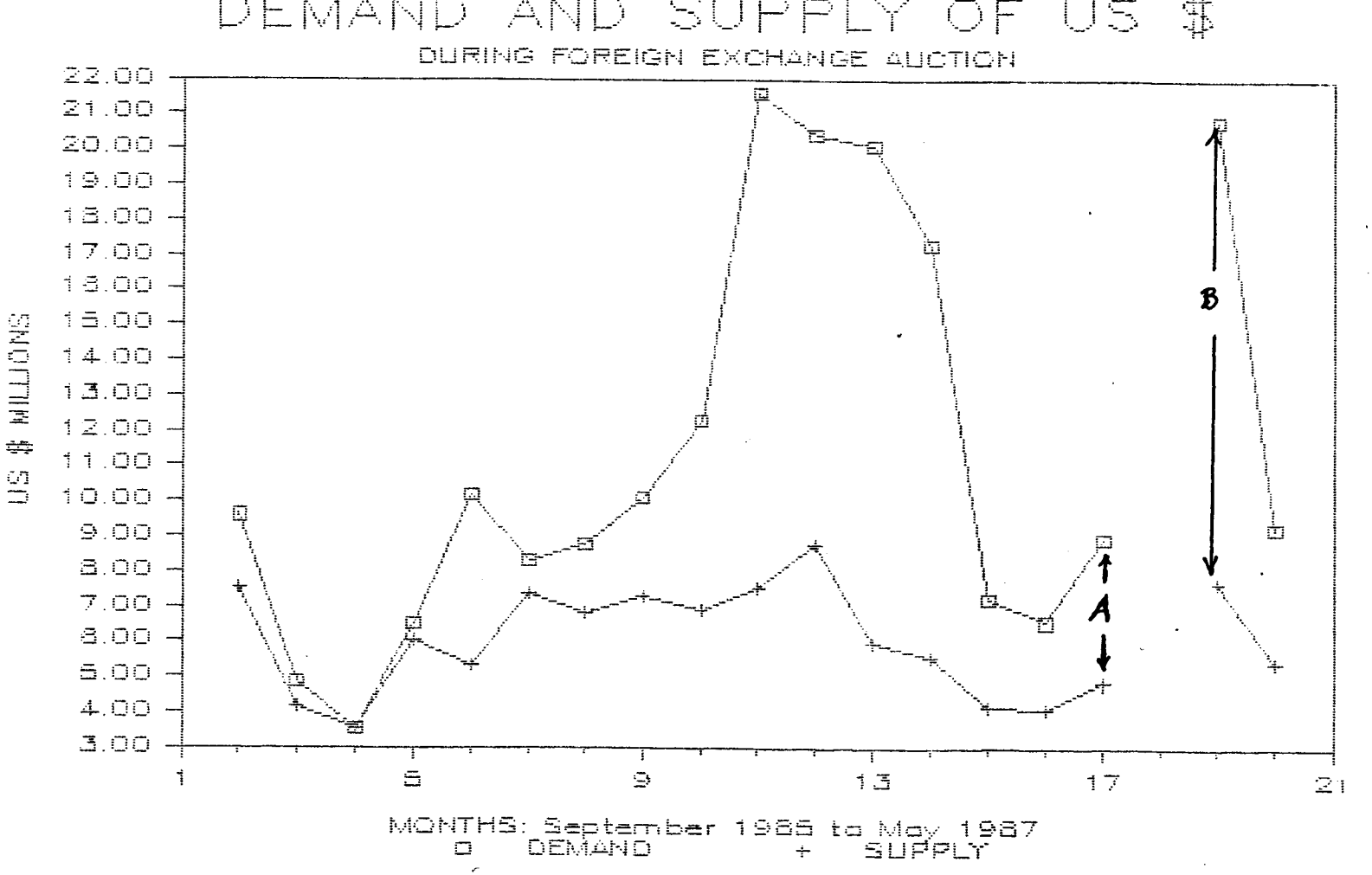


Figure: 5.2 depicts demand and supply of united states dollars in the foreign exchange auctions. The demand seemed to heighten as uncertainty become prevalent in the auctions. Uncertainty destroyed bidder confidence which was responsible for stable exchange rates. Points A and B show the stop and resumption of auctions respectively before the programme was finally abandoned.

K21.01 to the US dollar in only five auctions before the final demise of the auction system.

The point being made from the foregoing review of events, is that the unabated depreciation of the kwacha, can be attributed in part to loss of bidder confidence in the auction system as there were more strident and at times virulent attacks on the system with no consistent attempts to build support for it by the authorities. This predicament served to strengthen the inflationary spiral and hence monetary growth pressures in the period under consideration. The intra-and international analysis is deemed necessary in as far as this affords a chance to illumine the salient features that helped form and mould bidder's expectations in the auction of foreign exchange market. This phenomenon made the situation difficult for the monetary authority to persuade the non-bank public to conform to the stated objective of money supply restraint.

5.4 POLICY DIRECTIONS

Under this policy instrument, the policy maker can do almost anything under the sun to further his ultimate objective. For this reason and many others, it follows that the monetary authority degree of commitment must be total towards realising stated goals.

It has already been pointed out that moral suasion can be used to supplement other quantitative tools of monetary policy. This instrument can be utilised to convert uncaring parastatal chiefs in a core of believers in putting idle resources under their charge into competing uses so as to realise maximum gains. The idea of investing the bulk of their idle deposits from the commercial banking system into Treasury bills is a case in point. The monetary authority is within its powers to persuade ZIMCO executives to take appropriate action in the desired direction.

The use of advanced information technology as an outreach to educate the public on the conceived monetary policy could be quite beneficial. This task is bound to become an economic imperative in situations where the main actors seem to be disillusioned about the going-on. Here, the policy measure is to go all out and testify, even if this might involve explaining the obvious.

5.5. CONCLUSION

The uses of moral suasion in its various forms is inexhaustible as it borders on the employment of big arm tactics on the part of the Central Bank to make the thrust of its monetary policy felt through the liberalised economy.

The monetary authority's action may seem arbitrary, but is always done in good faith and for the common good. Moral suasion is therefore a versatile instrument of monetary policy whose potency was compromised by incongruous international and intra-national politics together with procrastination of the monetary authority.

In the next chapter, an attempt is made to summarize various factors which compromised the global effectiveness of the traditional instruments of monetary policy during the foreign exchange auction system in Zambia. After the summary, concluding remarks are made highlighting the rationale for effective control of money supply and finally, recommendations are suggested.

CHAPTER SIX

6. SUMMARY, CONCLUDING REMARKS AND RECOMMENDATIONS

6.1. SUMMARY

Monetary policy is a vector, in the sense that it has both magnitude and direction, hence the need for targeting in time and space. Apart from the preliminary stages in the introduction of a flexible exchange rate regime, no further consistent deliberate effort was made to set targets as a major component in the execution of monetary policy. Actions in the name of policy were initiated from time to time thereafter without any due recourse to quantifying the intended objectives. Save for the IMF/World Bank conditionality clauses which sought to reduce the money supply, only half measures and or misplaced policy actions came to reign during the days of the floating exchange rate system.

The contractual obligations between the IMF/World Bank and this country makes one to believe that the monetary authority was, given the conditionality clauses, supposed to have done everything in its power not only to restrain monetary growth, but possibly reduce the money stock.

A policy of open market operations preoccupied with the idea of off-loading the bulk of Treasury bills onto the commercial banking system instead of doing so toward the non-bank public, does seem to contradict the expressed policy of reduction in money supply. For this reason and many others, the Treasury bill market served much to the expansion of money supply rather than the desired contractionary tendencies in money supply. Compounding this situation were the narrow Treasury bills market, direct big government budget deficit financing through Treasury bills sales and absence of targets in the sale and purchases of Treasury bills.

Lack of comprehensive monitoring of the money multiplier movements, so as to allow it adjust to calculated increments in reserve ratios, led to unintended results which bore no decisive impact on the desired money supply in the economy. Although this policy instrument - the legal minimum reserve requirement changes - was totally effective at all material times of recorded adjustments, the ultimate impact was muted and quickly overwhelmed by the forces whose thrust was for monetary expansion because of the piecemeal nature of reserve ratio adjustments. Inevitably, money supply continued to increase, with or without the knowledge of the monetary authority, and against the terms of IMF/World Bank conditionality clauses.

The discount rate and the interest rates policy failed to contribute positively to reducing money supply. The potency of the discount rate policy was to a certain measure rendered obsolete due to the fact that the financial system was over-burdened with excess liquidity and that interest rates were negative in real terms. During the period under study, the rising nominal interest rates which aimed at catching up with the inflation rate so as to strike positive real interest rates could not do so because of sustained increase in the money supply resulting from various factors. More importantly, this policy instrument could not be effective in reducing money supply because the economy displayed a semblance of the Gidson's paradox - the parallel movement of the price level with interest rates. Vetoing all forms of discounts would have helped to halt monetary expansion.

Moral suasion as a versatile instrument of monetary policy was effectively employed in the dying moments of the foreign exchange auction system, from March 1987 to the end. This policy tool allows the policy maker to do away with the hard and fast rules abound in the application of the other instruments of monetary policy as policy objectives are being pursued. The onus therefore lies on the character of the monetary authority in as far as his commitment to realising the stated objectives is concerned. Indeed much of the economic health of the nation rests on the monetary

authority. During the period under review the monetary authority's role was thwarted and dwarfed by politics of the day both internationally and intra-nationally with regard to manipulation of moral suasion. It was neither easy to justify nor reconcile certain political decisions such as the sanctions issue with sound economic thinking or good business sense.

6.2 CONCLUDING REMARKS

The fore-going analysis notwithstanding, it was in part due to the unglamourous impact of the IMF/World Bank sponsored structural adjustment programmes that provided the rationale to have this study into the effectiveness of traditional instruments of monetary policy, specifically to deal with the monetary authority's apparent ineptitude to control money supply during the foreign exchange auctioning system in Zambia. Viable policy directions have since been exposed and sustainable conclusions drawn. The study has, however, raised serious credibility questions on the appropriate qualification of the monetary authority, the measurability of the money stock where a black market for currency thrives intra-nationally and across borders, the efficacy of depending on higher discount rates to restrain money supply in an economy that displays a semblance of the Gibson's Paradox, and indeed, the wisdom of controlling money supply without quantified monetary targets.

6.3 RECOMMENDATIONS

Given the findings, policy directions and conclusions drawn from this study, what has become crystal clear or lucid is that instruments of monetary policy can be effective when manipulated together in unison as group. To this end, there is need to have the skillful competence of a professional to handle matters such as these at the Central Bank. However, the following recommendations may be passed to ensure and consolidate the effectiveness of traditional instruments of monetary policy:

a. The Bank Governor's powers should be broadened in regard to manipulation of the minimum reserve requirements. The status quo in which it takes not less than a month to adjust the minimum reserve requirements via parliament is inconducive to viable monetary policy given the fluidity of modern times.

b. Huge deposits in the commercial banking system is also a source of over liquidity especially when the owners of such deposits owe the Central Bank counterpart funds to pay foreign business concerns in hard currency under foreign exchange constrained conditions. Requiring such deposits holders to have their counterpart local currency, hitherto within

the commercial banking system, deposited at the Central Bank against their external debt obligation instead would greatly help the situation.

c To control excess currency in circulation with the non-bank public where a black market for currency exists, demonetisation of the local currency and replacing it with a new form coupled with restrictive measures aimed at demobilising those notes and coins outside the borders while at the same time taxing internal holders of large sums of money when exchanging what they possess for the new currency at commercial banks could help. Furthermore, the manufacturers of the local currency should be changed from time to time as and when need arises to curb prolifiration of currency.

d. Introduction of medium to long term debt instruments and or creation of the stock exchange market in an economy is a boon; the formation of such instruments/market would clinically cut the government's desire to resort to minting and printing more money whenever a deficit situation existed in the budget.

These measures are best applied prior to the implementation of the nascent structural adjustment programmes as being

advocated by the IMF and the World Bank of which the foreign exchange auctioning system is one. However, the frequency at which some these measures can be administered may clearly depend upon the dictates of the prevailing circumstances.

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APPENDIX ONE:TABLE:1

COMMERCIAL BANKING SYSTEM'S DEPOSITS BY SECTOR

END OF PERIOD	GOV'T	STATUTORY BODIES (K'000)	PARASTAT BODIES	PUBLIC	NON-RESIDENT	TOTAL DEPOSITS
1985 SEP	30194	126784	326533	1107033	49590	1640134
OCT	39666	126733	373278	1149689	54856	1744222
NOV	48374	153023	381635	1153089	70380	1806501
DEC	56235	88900	465817	1203952	61782	1876686
1986 JAN	56619	145925	439570	1206731	64422	1913267
FEB	54886	128417	590388	1211780	61678	2047149
MAR	54434	117889	667419	1379076	83823	2302641
APR	51137	82447	586303	1355049	65498	2140434
MAY	51772	128962	693496	1395986	70715	2340931
JUN	46212	119828	839050	1402090	65394	2472574
JUL	69316	144691	676240	1478607	99792	2468646
AUG	60616	177372	855145	1471307	69955	2634395
SEP	91471	201032	935973	1519750	124799	2903065
OCT	79025	268847	1055622	1561564	87270	3052328
NOV	102158	224570	1049307	1714047	125768	3215850
DEC	134548	304949	1252252	1908477	110571	3710797
1987 JAN	110274	342683	985385	1951312	140992	3530646
FEB	105522	305613	1180862	2055138	96519	3743654
MAR	112631	279988	1288511	2007180	90467	3778777
APR	111986	366931	1753530	2067648	95462	4395557
MAY	128675	382682	1457412	2082869	115113	4166751

Source: Bank of Zambia

APPENDIX ONE:TABLE:2

COMMERCIAL BANKING SYSTEM'S LOANS AND ADVANCES BY SECTOR

END OF PERIOD	GOV'T	STATUTORY BODIES (K'000)	PARASTAT BODIES	PUBLIC	NON-RESIDENT	TOTAL LOANS
1985 SEP	153	121555	618208	484903	8	1224827
OCT	74	155687	537816	516483	14	1210074
NOV	102	121509	469631	589885	33	1181160
DEC	1147	142627	434743	567922	148	1146587
1986 JAN	676	135937	478583	577337	28	1192561
FEB	828	123764	463347	672334	34	1260307
MAR	5439	125250	492119	696443	10	1319261
APR	3248	86007	485120	781424	3131	1358930
MAY	3378	97387	498760	755357	8	1354890
JUN	3460	100048	494427	770018	8	1367961
JUL	1863	97563	518960	822960	618	1441963
AUG	2109	96829	469801	883511	10800	1463050
SEP	1971	103438	566606	897060	4377	1573452
OCT	2437	177429	566059	1016163	10796	1772884
NOV	2629	155928	529852	1003640	10156	1702205
DEC	2333	134108	556599	1019036	76	1712152
1987 JAN	2939	96754	564983	965915	33	1630624
FEB	3223	97761	603254	944439	121	1648798
MAR	15211	84977	542815	1111775	22	1754800
APR	8125	89829	720845	1174387	89	1993275
MAY	8208	85577	714318	1253518	159	2061780

Source: Bank of Zambia

APPENDIX ONE:TABLE:3

CURRENCY IN CIRCULATION

END OF PERIOD		AT BANKS	OUTSIDE BANKS	TOTAL ISSUED
			(K'000)	
1985	SEP	47303	307641	354944
	OCT	46572	317704	364276
	NOV	36458	339684	376142
	DEC	52668	352463	405131
1986	JAN	49846	326038	375884
	FEB	34267	322669	356936
	MAR	41447	337303	378750
	APR	44942	349769	394711
	MAY	43444	353472	396913
	JUN	48921	348854	397775
	JUL	66222	368132	434354
	AUG	60853	403907	464760
	SEP	69029	495363	564392
	OCT	61238	564926	626164
	NOV	63238	595815	659053
	DEC	79508	593424	672932
1987	JAN	64933	579391	644324
	FEB	53137	573962	627099
	MAR	63137	575483	638620
	APR	49035	612115	661150
	MAY	59551	672745	732296

Source: Bank of Zambia

APPENDIX ONE:TABLE:4

GOVERNMENT OF ZAMBIA - TREASURY BILLS OUTSTANDING

END OF PERIOD		BANK OF ZAMBIA	COMMERCIA BANKS	OTHERS	TOTAL	OUTSTANDING BALANCE
			(K'000)			
1985	SEP	407.4	562.8	62.8	1033.0	1210.2
	OCT	736.8	615.1	42.2	1394.1	1662.9
	NOV	1028.9	750.0	62.2	1841.1	2097.5
	DEC	914.1	788.4	30.5	1733.0	1733.0
1986	JAN	723.6	719.7	31.9	1475.2	1475.2
	FEB	317.5	808.1	35.3	1160.9	1161.1
	MAR	333.7	708.9	46.7	1089.3	1089.4
	APR	444.8	557.2	31.7	1033.7	1033.7
	MAY	511.6	668.3	37.7	1217.6	1217.6
	JUN	526.4	751.0	28.6	1306.0	1306.0
	JUL	966.5	654.0	30.5	1651.0	1651.0
	AUG	674.3	767.5	27.7	1469.5	1469.5
	SEP	375.8	935.8	27.1	1338.7	1338.7
	OCT	303.3	924.2	32.3	1259.8	1259.8
	NOV	703.4	968.3	17.4	1689.1	1689.1
	DEC	430.8	1432.8	11.8	1875.4	1884.4
1987	JAN	224.8	1260.9	21.7	1507.4	1507.4
	FEB	175.0	1584.1	24.9	1784.0	1784.0
	MAR	303.9	1405.9	25.2	1735.0	1735.0
	APR	301.6	1185.1	43.3	1530.0	1530.0
	MAY	200.8	1206.5	39.7	1447.0	1447.0

Source: Bank of Zambia

APPENDIX CNE:TABLE:5

INTERST RATES

END OF PERIOD	CENTRAL BANK RATE	A/TREASURY BILL RATE (PERCENT)	SAVINGS ACCCUNT	3-6 MONTHS	OVERDRAFT (MINIMUM)
1985 SEP	17.50	14.50	11.80	10.30	18.00
OCT	21.00	20.00	12.80	14.90	20.10
NOV	25.00	24.00	13.80	16.70	22.10
DEC	23.50	24.00	15.10	17.10	29.70
1986 JAN	23.50	23.50	15.20	17.70	29.00
FEB	23.50	23.50	15.60	17.30	28.40
MAR	23.50	23.50	15.30	17.40	28.80
APR	23.50	23.50	15.40	17.40	29.40
MAY	23.50	23.50	15.30	18.30	29.60
JUN	23.50	24.00	15.40	18.20	29.60
JUL	23.50	24.00	15.40	18.20	29.60
AUG	25.00	24.00	15.60	18.70	30.40
SEP	25.00	24.50	15.70	21.00	27.70
OCT	25.00	24.50	15.90	21.10	28.60
NOV	30.00	28.00	18.40	22.40	32.40
DEC	30.00	28.00	19.80	24.70	33.50
1987 JAN	30.00	28.00	20.37	22.78	33.00
FEB	20.00	18.00	11.50	15.33	23.58
MAR	20.00	18.00	11.00	14.17	23.67
APR	20.00	18.00	8.66	14.14	23.69
MAY	15.00	14.50	9.80	11.47	18.72

Source: Bank of Zambia

APPENDIX ONE:TABLE:6

COMMERCIAL BANKING SYSTEM LIQUIDITY RATIOS

END OF PERIOD		MINIMUM REQUIRED	ACTUAL LIQUIDITY (PERCENT)	FORMAL LIQUIDITY	TOTAL
1985	SEP	40.00	39.30	31.40	70.70
	OCT	40.00	40.20	27.30	67.50
	NOV	40.00	45.30	24.60	69.90
	DEC	40.00	47.00	23.60	70.60
1986	JAN	40.00	40.10	24.20	64.30
	FEB	40.00	38.60	20.80	59.40
	MAR	40.00	38.00	25.20	63.20
	APR	40.00	42.10	28.80	70.90
	MAY	40.00	35.40	29.50	64.90
	JUN	40.00	36.60	32.90	69.50
	JUL	40.00	34.40	33.00	67.40
	AUG	40.00	35.50	33.10	68.60
	SEP	40.00	39.20	29.10	68.30
	OCT	40.00	35.00	28.20	63.20
	NOV	40.00	35.70	41.40	77.10
	DEC	40.00	42.60	38.10	80.70
1987	JAN	40.00	36.40	42.20	78.60
	FEB	40.00	41.30	28.90	70.20
	MAR	40.00	38.30	36.00	74.30
	APR	40.00	29.20	33.30	62.50
	MAY	40.00	31.40	30.50	61.90

Source: Bank of Zambia

APPENDIX ONE:TABLE:7

CONSUMER PRICE INDECES LOW & HIGH INCOME GROUPS AND WHOLESALE PRICE INDEX

END OF PERIOD		CONSUMER LOW INCOME GROUP	CONSUMER HIGH INCOME GROUP	WHOLESALE PRICE
1985	SEP	525.5	452.5	796.8
	OCT	569.7	503.1	
	NOV	610.3	534.4	
	DEC	655.4	572.2	1230.0
1986	JAN	682.9	604.7	
	FEB	708.9	620.4	
	MAR	730.7	639.8	1486.3
	APR	738.9	752.5	
	MAY	758.7	665.2	
	JUN	779.9	683.9	1643.6
	JUL	794.9	695.0	
	AUG	806.5	743.2	
	SEP	796.3	754.1	1870.9
	OCT	820.2	774.0	
	NOV	840.6	789.7	
	DEC	882.9	862.9	2578.8
1987	JAN	938.3	921.6	
	FEB	953.3	933.6	
	MAR	954.3	934.5	3553.6
	APR	1048.0	1027.6	
	MAY	1051.8	1029.4	

Source: Bank of Zambia

APPENDIX ONE:TABLE:8

DEMAND AND SUPPLY OF UNITED STATES DOLLARS DURING THE AUCTION OF FOREING EXCHANGE REGIME IN ZAMBIA

END OF PERIOD MONTHLY	BID RANGE (IN K)	KWACHA OFFERED (K MN)	US $ DEMAND ($ MN)	US $ SUPPLY ($ MN)	K/US $1 RATE STRUCK
31/10/85	4.60-9.00	70.10	9.60	7.50	6.44
30/11/85	5.00-7.05	30.00	4.85	4.16	5.75
28/12/85	5.60-6.65	21.05	3.52	3.51	5.70
25/01/86	4.00-7.50	40.58	6.48	6.06	6.36
22/02/86	5.54-7.50	71.53	10.20	5.36	7.01
29/03/86	6.00-7.60	57.70	8.30	7.40	6.85
26/04/86	4.50-7.50	64.30	8.80	6.80	6.98
31/05/86	6.50-8.00	74.90	10.10	7.30	7.31
28/06/86	5.50-7.70	92.20	12.30	6.90	7.51
26/07/86	4.01-9.53	166.60	21.60	7.50	6.08
30/08/86	5.00-7.75	136.70	20.40	8.80	6.87
27/09/86	5.10-8.00	136 90	20.10	6.00	7.09
25/10/86	5.50-11.51	161.21	17.28	5.58	10.32
29/11/86	6.00-16.52	102.26	7.23	4.17	15.25
27/12/86	6.00-14.20	80.27	6.55	4.08	12.71
24/01/87	6.00-15.31	129.51	8.94	4.84	14.92
28/02/87					
28/03/87	9.10-20.00	297.86	20.83	7.72	15.00
24/04/87	14.00-23.90	190.85	9.26	5.42	21.01

Source: Bank of Zambia

APPENDIX ONE:TABLE:9

MONEY SUPPLY

END OF PERIOD		NEAR (QUASI) MONEY (K 000)	NARROW MONEY SUPPLY (K 000)	TOTAL BROAD MONEY (K 000)	MONETARY BASE (K'MILLION)	MONEY MULTIPLIER
1985	SEP	835853	1034783	1870636	569.90	3.282
	OCT	787814	1182236	1970050	619.75	3.179
	NOV	856781	1173197	2029978	632.05	3.212
	DEC	875096	1228706	2103802	661.90	3.178
1986	JAN	872973	1259488	2132461	753.30	2.831
	FEB	881873	1374052	2255925	745.43	3.026
	MAR	1049679	1454679	2504358	710.00	3.527
	APR	1044756	1331482	2376238	741.00	3.207
	MAY	1128729	1461729	2590458	870.30	2.977
	JUN	1171264	1541229	2712493	760.10	3.569
	JUL	1115409	1554956	2570365	786.20	3.397
	AUG	1167863	1742563	2910426	859.70	3.385
	SEP	1299348	1885206	3184554	965.60	3.298
	OCT	1490198	1963456	3453654	994.60	3.472
	NOV	1557750	2028685	3586435	1253.00	2.862
	DEC	1760740	2301058	4061798	1339.20	3.033
1987	JAN	1766603	2094867	3861470		
	FEB	1869171	2249102	4118273		
	MAR	2006295	2147566	4153861	1497.50	2.774
	APR	2121231	2681674	4802905		
	MAY	2127120	2471286	4598406		

Source: Bank of Zambia

APPENDIX ONE:TABLE:10

MONETARY SURVEY

END OF PERIOD	FOREIGN ASSETS NET		CLAIMS ON GOV'T		CLAIMS ON PVT		OTHER ITEMS NET
	MONETARY AUTH	COMMERCI BANKS	MONETARY AUTH	COMMERCI BANKS	MONETAR AUTH	COMMERCI BANKS	
			(K'MILLION)				
1985 SEP	(1767.2)	(192.8)	1952.7	559.7	105.5	1226.9	69.1
OCT	(1794.9)	(166.8)	1977.8	605.5	165.5	1213.7	25.7
NOV	(2282.4)	(171.2)	1957.4	725.3	165.5	1187.7	(425.8
DEC	(2267.5)	(241.2)	1961.9	764.6	165.5	1155.0	(563.1
1986 JAN	(2572.2)	(187.4)	2283.2	649.4	165.0	1198.9	(900.1
FEB	(2729.2)	(132.3)	2147.4	664.9	165.0	1266.4	(878.2
MAR	(2394.6)	(150.9)	2002.8	671.6	165.0	1321.4	(910.7
APR	(3141.9)	(77.5)	2110.5	518.5	165.0	1361.5	(1444.7
MAY	(2604.6)	(96.6)	2265.6	627.8	165.0	1357.4	(864.4
JUN	(2431.6)	(4.5)	2048.2	703.5	165.0	1275.5	(861.0
JUL	(2338.9)	20.3	1980.9	586.9	165.0	1449.2	(811.5
AUG	(7846.3)	76.9	1924.5	695.5	165.0	1464.3	(6435.1
SEP	(8107.7)	22.7	1992.0	865.0	165.0	1579.9	(6672.3
OCT	(8234.6)	207.2	2263.4	850.1	165.0	1783.1	(6424.0
NOV	(8081.5)	338.9	2402.9	852.2	165.0	1709.1	(6204.4
DEC	(9557.6)	210.2	2227.2	1262.0	165.0	1724.8	(8034.7
1987 JAN	(9205.2)	527.9	2326.0	1113.7	165.0	1653.4	(7285.2
FEB	(9283.3)	15.4	2070.8	1438.7	165.0	1659.7	(7919.5
MAR	(8947.9)	126.9	200.6	164.3	165.0	1758.4	(7785.1
APR	(9474.8)	544.3	2052.8	1043.9	165.0	2010.3	(8466.0
MAY	(9324.7)	344.3	1950.0	1054.6	165.0	2067.1	(8313.6

Source: Bank of Zambia