FINANCIAL INNOVATION AND ITS IMPLICATIONS FOR MONETARY POLICY IN SOUTH AFRICA

by

STANLEY ROBERT EPSTEIN

submitted in fulfilment of the requirements for

the degree of

MASTER OF COMMERCE

in the subject

ECONOMICS

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: **PROF. L J FOURIE**
JOINT SUPERVISOR: **PROF. G P BROWN**

NOVEMBER 1996

ACKNOWLEDGEMENTS

I wish to express my sincere appreciation and gratitude to Professors L J Fourie and G P Brown for their constant guidance, advice and encouragement. Without their efforts and inspiration this dissertation would not have been possible.

I am also deeply indebted to my wife, Sharon-Anne, for her unfailing inspiration, encouragement and support.

> An accomplished woman, who can find? -
> Far beyond pearls is her value,
> Her husband's heart relies on her and he shall lack no fortune.
>
> (Proverbs 31:10-11)

My appreciation is also extended to my daughters, Melanie and Andrea, who assisted so diligently and ably with the mundane and tedious tasks of preparing and setting up the various tables and graphs and the proofreading.

SUMMARY

Financial innovation is a process that is not fully understood because of its nebulous nature and the difficulties in determining its causes and effects. The pace of financial innovation has increased rapidly in recent years. With this increased level of new financial instruments and processes has also come the realisation that financial innovation may well influence the successful application of monetary policy. Under certain circumstances monetary policy may hampered or may be rendered ineffective by financial innovation. This dissertation examines the nature and causes of financial innovation and its implication for the successful application of monetary policy both internationally and in South Africa.

KEY TERMS

Financial innovation; innovation; circumventive innovation; competitive innovation; financial system; monetary policy; money; technology and financial innovation; South African monetary policy; South African financial system; effects of financial innovation.

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CHAPTER ONE
INTRODUCTION

1.1 PURPOSE OF THE DISSERTATION

To innovate, is "to bring in novelties or to make changes" (Concise Oxford Dictionary 1954). Innovation is perhaps better known in its relation to the introduction of new processes in industry. The Industrial Revolution is one of the striking examples of what the innovative process can achieve. However innovation does not relate to industry alone. Innovation is found in all spheres of human activity. It occurs in the business world in activities such as production and marketing, in the sciences such as medicine and our study of the Universe and even in the realm of philosophy and religion.

The operation of the financial system is also subject to financial innovation. These innovations include the development of new financial products, financial practices and financial instruments. While the financial system has always been exposed to change, the pace at which changes are taking place has increased rapidly over the past thirty years. While the various forms of financial innovation have been well documented, classified and explained at the micro level, its effects at the macro level have remained largely unexplored.

During the past sixty years the financial sector has featured prominently in economics. Controlling the supply of money, either through monetary policy or fiscal discipline, has been seen by many as the elixir for most economic ills. Economic stability in particular has been found vulnerable to the volatile nature of the money supply process. In this regard the money "creating" ability of the cheque issuing (clearing) banks fulfil a unique role. The banks' ability to create money has found many different forms of expression - each of them a financial innovation in its own right.

The role of financial innovation in this process is explored by first of all establishing the nature and causes of the innovative process in the financial sector. The second step is to examine the link between financial innovation and monetary policy. If financial innovation changes the financial system, what are the effects of such changes on the execution of monetary policy? Is there any action that the monetary authorities should or can take to

nullify the influence of financial innovation? In order to understand the South African experience cognisance should also be taken of changes that have occurred in the financial systems of other countries.

The prime objective of this study is to elucidate on the implications that financial innovation has for monetary policy in South Africa. To do this there are four basic questions which this dissertation will attempt to answer. Firstly, what is financial innovation? Secondly, what are the causes of financial innovation? Thirdly, what implications does financial innovation hold for monetary policy? Finally, is there anything the monetary authorities can do about financial innovation?

1.2 THE EVOLUTION OF MONEY - A PROCESS OF FINANCIAL INNOVATION

Although this study is in the main concerned with financial innovations that have taken place in the period since the Second World War and which involve the modern financial system, it is important to realise that the evolution of money was in itself a process of financial innovation. It may be said that the history of money is the history of financial innovation. Transforming a simple barter economy into a monetary economy probably represents the most profound financial innovation ever to have taken place. This transformation, which for the first time brought the concept of money into use, was an innovation which came about to eliminate some of the problems that society faced within a barter economy, specifically the need for a coincidence of wants and a durable store of value.

There are four basic attributes of money. Money serves as a medium of exchange, a store of value and a unit of account as well as a standard of deferred payment. The problem with a definition of money is an empirical one which is caused by financial innovation and the constantly shifting body of financial assets which perform monetary functions (Smithin 1994:11). Money, as we know it today, has gone through a process of evolution. Some four thousand years ago it became an accepted practice to use gold and silver as a medium of exchange. These metals, when used to fill the role of money, are referred to as commodity money. Commodity money consists of an actual commodity. Although any commodity may be used in practice such commodities had to be easy to store, easy to divide, easy to work

with, be of uniform quality or purity as well as being durable. This tended to rule out items or products which were bulky or could be affected by the vagaries of nature. However, in many of the more traditional societies cattle, other livestock and even produce still form the basis of commodity money and hence the medium of exchange. As with any other commodity, commodity money is subject to scarcity and to the cost of production. Gold and silver are examples of the so called "ideal" forms of commodity money. In practice the commodity chosen was almost exclusively gold or silver (Jevons 1905:190).

An early monetary innovation was perhaps the introduction of coinage which Herodotus attributed to the Lydian kings (Galbraith 1975:18). Minted coins had an immediate advantage over the previous use of raw metal in the form of bars or ingots. This was because the minted coins were made of a fixed pre-determined weight. The fact that the coin was struck, bearing a design, was a guarantee of both its weight and the purity of the metal and hence its value. Interestingly, Keynes (1931:12) questions whether the design on the coin was a certification of value or an act of ostentation on the part of the issuing authority.

Keynes (1931:3) also draws our attention to a number of primary concepts that relate to money. Key to these are his distinction between what he has termed "money-of-account" and "money". Money of account is created simultaneously with debt. Debts in turn are really "contracts for deferred payment". Similarly he sees price lists simply as offers for contracts of sale or purchase of goods or what he terms "price contracts". It makes no difference how these contracts for deferred payments are recorded. These can only be stated in terms of "money-of-account". The discharge of the debt or price contract can only occur against the delivery of money itself. The nature of money is derived from its relationship to "money-of-account". The current attributes of money, which are understood as being a medium of exchange, a store of value and a unit of account, are really a combination of "money" and "money-of-account".

A vital characteristic of money is that the community in which it circulates decides what its definition will be. Today that community has been replaced by the state. This gives rise to the concept of legal tender by which means the state specifies what constitutes "money" that has to be delivered in order to secure the lawful discharge of an obligation. This obligation

will have been recorded in the form of "money of account". This determination of the characteristics of money is a right claimed by all modern states. Furthermore it is a right that has been claimed for the last four thousand years (Keynes 1931:4).

Keynes (1931:6) also distinguished between "money-proper" and "bank-money". Money-proper is actual money; the store of value and the medium of exchange that is used to discharge a debt. "Bank-money" is an "...acknowledgement of a private debt expressed in the money-of-account, which is used by passing from one hand to another, alternatively with money-proper, to settle a transaction." We therefore have two forms of money circulating side by side. The one is "bank-money", which has no legal standing, circulating together with "money-proper" which is the recognised manner for discharging a debt. The next step in the evolutionary process was a decision by the state to accept "bank-money" as a valid discharge for liabilities to the state itself. At this point "bank-money" lost its property of being simply an acknowledgement of a private debt. It moved into the realm of Keynes's "money-proper". This "money-proper" or "state-money" is analyzed further into three forms. These are commodity money; fiat money and managed money. Keynes refers to the last two categories as "representative money". Jevons (1905:191) also refers too to representative money which he explains as token money which originally simply represented commodity money.

As a medium of exchange, commodity money creates a basic problem. This is that the quantity of money was limited strictly to the amount of the commodity available. In addition there was also the cost of securing the commodity and of producing the coinage. A shortage of the commodity led immediately to problems in trade. This was a reason for the use of tokens at various times and places.

Fiat money is token money. The intrinsic value of fiat money has nothing to do with its monetary face value. Fiat money today consists of money issued by the state, which is not convertible into anything else but itself. It has no value in terms of any other commodity. Fiat money consists of bank notes and coinage, the latter made of cheap base metals or alloys. Fiat money, because it is issued by the state, differs from tokens. Tokens may be issued by a merchant or by a group of merchants and may be similar to fiat coinage.

However its use is restricted to use with the merchant or merchants concerned. Tokens themselves have a long history and their use has been dictated by shortages of suitable commodity or fiat money, such as the use of tobacco in Virginia in the early 1600s (Galbraith 1975:57), or simply because of convenience. Tokens remain in current use such as on the New York subway; in parking meters or public telephones in many countries. Tokens too, have been affected by technology. Modern day tokens include pre-paid plastic cards for use in public telephones and vending machines. The so-called "smart card" or integrated circuit card may become the token money of the next generation.

As banks start to issue token coinage in the form of the pre-paid smart card the issuing bank could begin to enjoy seigniorage. Seigniorage is the margin between the interest on the paper currency or notes issued, which is generally zero, and the interest on the assets held to cover the note issue which represents a profit to the issuer. The note issue need not necessarily be legal tender. Where the note issue is monopolised by a central bank it is regarded as a form of government confiscation (Goodhart 1988:2).

Managed money is a cross between commodity money, which can be measured in terms of a specific commodity and paper money, which being fiat money has little or no intrinsic value. Managed money, while similar to fiat money in that it has no intrinsic value, was also linked to a value in terms of an objective standard, such as gold which was held by the state in either full or partial cover of the amount of money. The conditions of its issue were managed by the state. Managed money was fully convertible into the commodity it was linked to. Keynes's managed money was in effect what is more commonly called the gold exchange standard. Under this system fiat money, in the form of bank-notes, was fully convertible into gold. The gold exchange standard was first used in Russia in 1894 and subsequently in a number of other countries (Goedhuys 1982:180).

Managed money and commodity money were not equivalent to each other. The gold standard was commodity money linked directly to the quantity of gold in circulation in the form of coinage. The gold exchange standard linked fiat money to a backing of gold. Under a gold exchange standard there was no automatic limitation to the relationship between the quantity of notes in circulation and the quantity of gold that had to be held. The danger was

that the managed element, namely the paper fiat money, could easily be mismanaged or managed contrary to sound currency management principles. In practice the system proved unworkable and was abandoned during the 1930s.

With the demise of the gold exchange standard, fiduciary money, that is paper money not backed by gold came into its own. It had long been realised, that to transfer an acknowledgement of debt served the same purpose as transferring actual money or "money proper" in settlement of that debt. This mechanism now served as a supplement and as an alternative to commodity money. This acknowledgement of debt was, in Keynes's terminology, "bank money". Once bank money was taken over by the state it ceased to be simply an acknowledgement of debt. Rather, it joined the ranks of representative money - or in other words both fiat and managed money.

Bank money, in Keynes's definition, is an acknowledgement of private debt, and has a long history in the form of the bill of exchange and the traveller's letter of credit. Banking was originally concerned with the taking of deposits. According to Bagehot (1919:77) modern banking originated in Italy in the middle ages, originally with the sole object of making loans to the government. This function later evolved into two further activities. The first related to the function of remitting money. The second was the giving of "good coin", as a means of overcoming problems with differing purities in metal content and weight, differences due to the practice of clipping coins. Instead of "giving good coin" this value was credited to the account of the owner of the coin in the books of the Italian bank. This innovation created a standard value, called bank money, which came to represent money at a fixed standard value.

In England up to about the end of the eighteenth century, commodity money had been the rule. From the start of the nineteenth century the evolution of bank money into representative money began to cause problems. It was one thing to lay down a standard to administer this managed money. It was quiet another matter to ensure that this money conformed to this standard. An attempt to do this was made through the Bank of England Act of 1844 where the stock of managed money was linked directly to the quantity of gold held by the Bank of England. Prior to this other English banks were permitted to issue notes

of their own against full backing in either gold or Bank of England notes. The 1844 Act restricted the note issue of other banks to the amount that they had in circulation (at the time the Act came into force) so giving the Bank of England a virtual monopoly in the issue of banknotes.

The Bank of England Act of 1844 divided the Bank into two departments. The one was the Issue Department, who were responsible for the banknote issue, and the Banking Department, which in effect was a commercial bank (Goodhart 1988:8). The Act also placed a limit on the value of banknotes that could be issued by other English banks, specifically those who had been structured as joint stock companies and which were located in London.

Through its commercial banking activities the Bank of England came into direct competition with the other English banks. The Bank of England used its privileged position "...to refuse to rediscount bills for joint stock banks of issue and granted special facilities to those banks that handled its notes instead of their own." (Vaubel 1984:4). This gave the Bank of England a competitive advantage over the other banks and provided a powerful incentive to these banks to innovate. The major innovation of that time was in the use of the cheque. While the concept of the cheque and its use was not new, it was the Bank of England's restriction on the ability of certain banks to conduct their normal business that led to the virtual explosion of the use of the cheque as a form of money.

Banks create claims against themselves which are ultimately met by the delivery of money. Such claims are called deposits. Deposits can be created in two separate ways. The first is where a bank accepts, in the name of the depositor, either money or an order which authorises the transfer of a deposit from another depositor. This order is more commonly called a cheque. The second way in which a deposit is created, is when the bank purchases an asset which it adds to its investment portfolio. The asset is the loan to the borrower while the deposit arises from the payment made from the proceeds of the loan.

A cheque is a written order by the owner of a deposit to the bank who holds the deposit, to pay a specific amount to a specified person or to the bearer. The advantages of the cheque lies in the fact that it is generally negotiable and that it may be made out for an exact

amount. These advantages have allowed a reduction in the actual amount of money, be it commodity or fiat money, necessary to support a given level of economic activity. Banks have become aware that because their deposit liabilities circulate in the form of negotiable cheques the demand for actual cash is relatively small. The chance that all a bank's depositors will withdraw all their deposits in cash and at the same time is also relatively small. Where such a mass withdrawal does take place it is known as a "run" on the bank and can well have disastrous consequences both for the bank concerned and the economy. The fact that banks have this pool of deposit funds available to them forms the basis behind the ability for a cheque issuing (or clearing) bank to create money through deposit expansion. It follows that the cheque provides a ready vehicle for circumventing any restrictions placed on a banks ability to expand their deposit base through increased lending. The same vehicle may also be used to overcome physical shortages in either cash or commodity money. These developments in the words of Rogers (1986:39) "...represented an increase in efficiency over the sole use of precious metals..."

In his introduction to the 1919 edition of Bagehot's "The Lombard Street Story", Hartley Withers (page viii) observes that the 1844 Act had in effect made the cheque into "...the predominant form of paper currency, reducing the banknote to a secondary place as currency, and at the same time raising it to a more important one as part of the basis of credit." The extent to which this had occurred can be gauged from Withers's remark on page xi when he states that "...the money of England is the cheque, which can be multiplied to an extent which is only limited by the prudence of bankers..." The cheque had by this time become the main circulating medium for commercial payments while the banknote had almost stopped circulating. Hence Jevons' question as to whether the cheque should be included in the definition of money (1905:248).

Keynes identified the problem when he commented on the 1844 Act by examining firstly its "second" proposal, that of a limitation to the stock of representative money as a means of maintaining the standard and secondly the "confusion" that the Act created. This "confusion" was the fact that a relationship exists between money and bank credit. Bank credit creates money and that money becomes a part of the money stock. Representative money and commodity money become one and the same thing. New ways of doing things - innovations

- aimed at by-passing a shortage of commodity money in the first instance had created a "pseudo-money" or "near-money". When any attempt is made to control its quantity it was simply switched or substituted into another form.

Smithin (1994:18-19) draws our attention to the evolutionary relationship between three "types" of money; commodity money; fiat money and credit money. He notes that a different type of theory is necessary to understand each type. However, it should be remembered that these three types of money do not exist in isolation but rather in a continuum - which makes the application of any one theory extremely difficult. In this lies the root of the problem in trying to understand how financial innovation affects monetary policy.

1.3 STRUCTURE OF THE DISSERTATION

This chapter has been used to set the scene, and to briefly examine the evolution of what is today loosely called "money". As will be explained in subsequent chapters this evolution is financial innovation. The body of this dissertation is set out in chapters two to five. Chapter two is devoted to examining the innovatory process in relation to the firm with an emphasis on the financial firm because of the latter's unique characteristics. The nature, causes and types of financial innovation are discussed. The chapter concludes with a review of certain terms and concepts which are used in the ensuing chapters.

In chapter three the role of monetary policy, its historical development, the transmission mechanism and the application of monetary policy are discussed. This is followed by an examination of the implications that financial innovation has for the conduct of monetary policy and the possible interaction between the two.

The major topic of chapter four is financial innovations in both the United States of America and the United Kingdom in relation to both monetary policy and the financial systems of each country. There is also a brief discussion of the financial innovations that have occurred in both France and Germany. The emerging evidence of the interaction of financial innovation to monetary policy is also examined.

The concluding chapter is chapter five which is devoted to South Africa, since the end of the Second World War, its financial system, monetary policy and the financial innovations that have taken place. The objective of this study is to understand the implications that financial innovation has for monetary policy in South Africa, and the chapter ends by drawing conclusions as to these, as well a exploring possible future directions that financial innovations may take.

CHAPTER TWO

FINANCIAL INNOVATION : ITS NATURE, CAUSES AND TYPES

2.1 OVERVIEW

To understand the innovatory process it is necessary to examine the environment in which innovation finds expression. This entails having to step back and to review the nature of the firm. Because financial firms have been treated differently from firms generally, possibly on the basis of the incorrect understanding of their function, one needs to first gain an understanding of the general theory of the firm. It should be established whether the general theory of the firm has any significance for the financial firm. Because the financial firm operates in an environment which is fairly unique, the characteristics of the financial sector as well as the regulatory framework under which financial firms operates should be investigated. The innovatory process relates to all avenues of human endeavour. The basis for understanding financial innovation is to first examine the general innovatory process, its nature and its causes. With this as the background the focus changes to financial innovation with an examination of the causes as well as the types of financial innovation. The role of technology in financial innovation is also examined. Finally, it is necessary to clarify certain terms and concepts which will be used in this dissertation.

2.2 THE THEORY OF THE FIRM

2.2.1 General Theory

In the real world the structure of the firm is diverse and stretches from the sole owner of a small business to giant conglomerates which span the world. The neoclassical theory of the firm simply seeks to provide a base model which explains the relationships between firms and how the price mechanism is used in the allocation of scarce resources. Crew (1975:13) states that, "In neoclassical theory the firm is seen as a theoretical construct, not corresponding to any actual firm, and is seen as a primitive device for transforming inputs into output". This base model is simply a concept, which all too often is confused with the real firm according to Machlup (1967:9) who states that, "To confuse the firm as a

theoretical construct with the firm as an empirical concept, that is, to confuse a heuristic fiction with a real organisation...is to commit the 'fallacy of misplaced correctness'. This fallacy consists of using theoretic symbols as though they had a direct observable, concrete meaning."

Firms, under the direction of an entrepreneur, combine various inputs to produce goods and services. The link between the firm and innovation lies in the production of these goods and services. Production is the activity to which the innovative process is linked. The producers of goods and services are not motivated by any philanthropic aspiration but rather by the desire to make a profit. Crew (1975:13) writes that "The firm is under the control of the entrepreneur, who, subject to various technical rules specified in his production function combines inputs to produce output so that the excess of revenue over cost is maximised. This is the so-called profit maximisation assumption which plays such an important part in the theory of the firm." Profits have an inverse relationship to costs. If a producer is able to reduce the costs of production his profits will normally increase. A reduction in production costs may be brought about by new production methods or techniques. Such new methods or techniques are, by definition, innovation. In this striving to reduce production costs to bring about an increase in profits, the entrepreneur engages in an innovatory process. Profits are maximised where this difference between revenue and costs is the greatest.

Under perfect competition, in a situation of perfect equilibrium, the firm will make normal profits. Where equilibrium does not exist excess profits (or losses) are made and the incentive exists for new firms to enter the market or for others to leave. Perfect competition exists where firms operate subject to the following assumptions (Koutsoyiannis 1987:154-155):

(a) There are a large number of buyers and sellers ensuring that no single firm has a monopoly and that no single buyer has a monopsony

(b) The product produced by all the firms in the industry is homogeneous

(c) There are no barriers, either to entry or exit

(d) All firms have a single goal of profit maximisation

(e) The industry is free from any form of government intervention such as regulation, tariffs or subsidies

(f) All factors of production are free to move from one firm to another within the industry. Workers may also move between different jobs and raw materials are freely available

(g) Information is free and costless and both buyers and sellers have complete knowledge of the market both present and future

Until the 1920s the neoclassical theory of the firm, based on perfect competition, was unchallenged. During the 1920s there came the realisation that perfect competition only represented the extreme case. Attention was turned to both oligopolistic and monopolistic theory. This led to the questioning of the concept of profit maximisation (Crew 1975:8) which led in turn to the development of theories of the firm that focused upon other factors, such as the underlying incentive rather than profit maximisation. In part these theories focused on the actual structure of the firm. There was a shift from the basic concept of the single owner-manager to that of a separate owner, usually in the form of many shareholders and separate managers. These new theories include the managerial and behavioural theories of the firm. The underlying feature behind managerial theories is that managers, as opposed to owners, seek to maximise their own utility in the firm subject to a minimum profit constraint. The latter relates to the minimum profit that must be made in order to keep the shareholders satisfied. While the owner of a business will operate his business with the objective of maximising his profits, a manager employed by an owner will have a number of supplementary goals. These goals may even compete with that of the owner (Machlup 1967:5). Koutsoyiannis (1987:324) states that managerial theories revolve around the reconciliation of the conflicting goals of the parties that make up the firm. These components consist of the shareholders, managers, workers, suppliers and customers.

There are various managerial theories such as Baumol's sales maximisation hypothesis

(Koutsoyiannis 1987:325) where the objective of the firm shifts from profit maximisation to sales revenue maximisation and Williamson's model of managerial discretion (Cyert and Hedrick 1972:402-403) where managers maximise their own utility through their ability to control discretionary expenditure.

Behavioural theories focus on how the large firm, whose ownership is separate from management, and who operate under uncertainty and imperfect market conditions, makes decisions against the backdrop of the varying goals of certain interest groups such as its shareholders, managers, workers, customers and suppliers. Cyert and March in their behavioural model (Koutsoyiannis 1987:388-389) see the firm as persuing *"satisficing"* behaviour rather than maximisation. Satisficing behaviour is that which satisfies a broad range of possibly conflicting goals of the firm in terms of the various interest groups.

The underling rationale, however behind these new views is still dependent upon the firm making a profit, even though the maximisation aspect has been surrendered to provide other incentives whether to managers, shareholders or the like. Profit maximisation still embodies all these new views and serves as a proxy for whatever incentive is used.

2.2.2 Financial firms

The traditional approach to the firm has been to study it on the basis of profit maximisation. Financial firms however have been treated as an exception. The financial firm has not been seen as a profit maximiser because most writers simply assume that it has only one function. This function is to act as an intermediary in the financial system (Revell S.a.:3). The usual approach in the study of the financial firm is to examine how it works from a macroeconomic point of view. The microeconomic aspect, which is the focus of the study of the general firm, has been neglected.

To understand the financial firm and the role that it plays in financial innovation it is first necessary to consider the environment in which it operates and how this differs from that in which the ordinary firm operates. This environment is the financial system. A very important part of this environment are the rules or the regulatory framework within which

financial institutions must function. Although there has been a tendency to overlook the microeconomic aspects of the financial firm a theoretical basis does exist. These three issues, namely the financial system, the regulatory framework and the theory of the financial firm, are examined in the sections that follow.

(a) The financial system

The structure of the financial system is dictated by the financial institutions, the financial markets and the instruments that constitute it. The financial system links lenders to borrowers either directly or, more commonly, through various intermediaries. These intermediaries may be banks, insurers or other types of financial institutions. The linkage between lenders, borrowers and financial intermediaries is through financial instruments. Overseeing the financial system are a series of regulators. Often different regulators are responsible for different financial intermediaries. The financial system facilitates the intermediation process between the holders of monetary surpluses or savings and those with a monetary deficit or the need to borrow. The financial system provides a single market, or a limited range of other financial markets where scarce resources can be allocated into those areas that are most likely to furnish the highest return. Savings do not only relate to new savings but to the re-arrangement of existing savings into more profitable avenues. In a similar manner borrowings can also be re-arranged into areas that are the most suitable for the borrower. Financial institutions also use the opportunities created by the differing requirements of savers and borrowers. The financial system therefore allows a large measure of flexibility as to how borrowers and lenders can accommodate their individual needs.

According to Faure (S.a.:6) there are four "components" which make up the financial system. He lists lenders and savers, investors and borrowers, financial intermediaries and financial instruments. Bain (1981:4), on the other hand, examines the financial system from the perspective of what he terms as its "participants". From Bain's perspective of participants he excludes financial instruments but includes brokers and advisers as well as regulators. Faure (1992:7) defines the financial system as the "...complex set of arrangements embracing the lending and borrowing of funds by non-financial economic units and the intermediation of the function by financial institutions to facilitate the transfer of

funds, to provide additional money when required, and to create markets in debt in order that the price of funds, and therefore the allocation of funds, is determined efficiently." The structure of the financial system is not static. While it generally is stable in the short term, over the long term it is subject to changes. The pace of this change has accelerated since the 1970s.

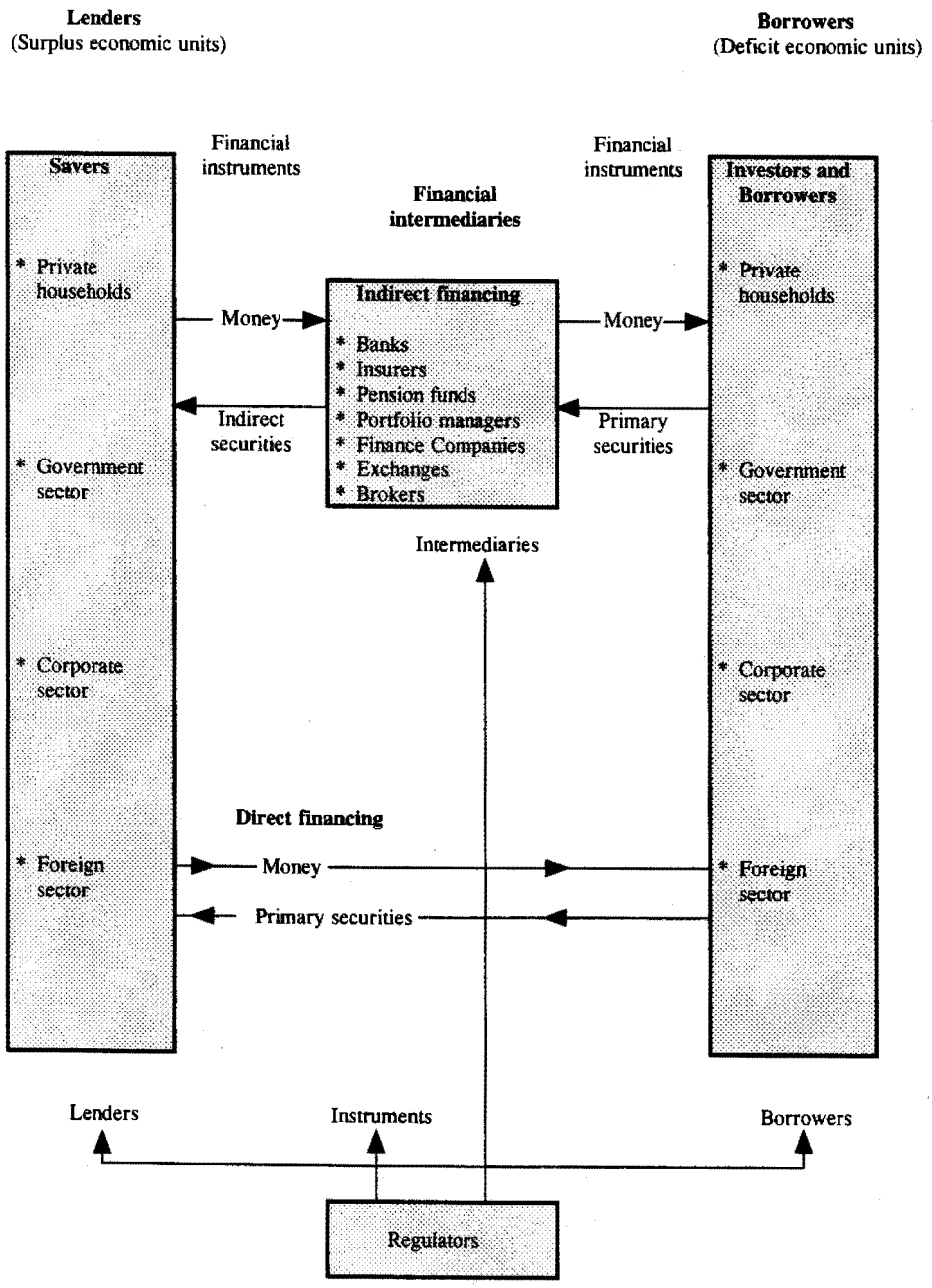
If the two views, albeit from different perspectives are combined, a more complete picture of the financial system comes into view. This is illustrated in diagrammatic form in figure 2.1, which reflects the financial system as comprising, be they participants or components, of; lenders and savers, investors and borrowers, financial intermediaries, financial instruments, brokers and advisers and regulators.

None of the various components of the financial system and financial markets exist in isolation. Together the whole financial system forms a network which must be understood in terms of market practices, institutional behaviour and the requirements of the prime users. The prime users are the borrowers and lenders in the financial system.

According to Bain (1981:2) there is a single underling function of any financial system. This function is to facilitate payments within an economy. Fama (1980:39) states that the main function of banks is to operate a system of accounts which enables the transfer of wealth to take place through bookkeeping entries and to convert such entries into currency. The account transfer function does not require the physical existence of "money". The exchange function does (Smithin 1994:21).

Payments are the flow of funds which moves between deposit intermediaries on behalf of their clients in exchange for goods and services or for financial instruments. Financial systems achieve this, on the one hand, through the use of money in the form of legal tender bank-notes, which may be issued either through the government or the central bank. Financial intermediaries also provide for the movement of payments between themselves, on behalf of their clients, without the use of legal tender, through payment systems such as the cheque system and inter-bank transfers. The lending activities of the commercial banking

Figure 2.1 **The Financial System**



Source: Faure AP 1992:8 Bain AD 1981:2-12

sector, which makes short term credit available to various economic actors such as firms and households, assists too, in facilitating payments. Cheques are often regarded as a substitute for money. The payment system allows for the movement of "money", either claims against lender's deposits with financial intermediaries, or claims against borrower's credit money created by financial intermediaries. In terms of Fama's view the currency convertibility function of banks, using instruments such as the cheque, forms the bridge between fiat money and credit money.

(b) The regulatory framework

In a situation of perfect competition the market mechanism is regarded as the only mechanism which can produce optimum decisions in the allocation of financial resources. In some quarters however it is accepted that the market mechanism does not always operate efficiently because competition is not always perfect. Regulation, according to Llewellyn (1994:1-9), is seen as providing a counter balance against deficiencies in financial markets. Financial regulation is seen as creating a degree of "social efficiency" which compensates for the deficient aspects of the financial market. This view is not universally accepted. Dowd (1994:306) sees regulation as having developed for reasons other than market failure. He believes that the obvious reason is political. In the United States of America current thinking among economists is highly critical of government regulation and of intervention in American industry, including the financial services industry. The idea that financial regulation has been introduced "...as a public service to correct market failure is now broadly scorned." The opposite view, "...that regulation distorts, misallocates, and restricts competition and raises prices to the consumer...", is widely supported (Goodhart 1989:195).

Financial regulation is regarded as having three objectives. These are to ensure the stability of the financial system in that unacceptable risks are not taken by financial firms which could threaten the whole financial system; the protection of the consumer's interests in the use of financial services to ensure that both savers and borrowers are afforded some protection; and to ensure that the financial services market operates in a regular and calm manner. The concept of financial regulation is also tailored to the accepted norms of the specific financial sector within the broad political ideologies of the country concerned.

The question of the stability of the financial system is based on ensuring that a failure in one part of the system does not cause either doubt or actual failure in another part of the system. A bank failure brought about by poor management and unsuitable risk management policies may cause panic and a run, not only on itself but on other banks as well. Because of the nature of the banking system this failure can "infect" other banks. Such a failure may lead to "systemic collapse" where the failure of one bank leads directly to the failure of one or more other banks. In this respect regulation assists in maintaining confidence in the financial system as a whole.

The protection of consumers interests relates to the fact that depositors or investors may not always be in possession of information which enables them to make impartial decisions as to the best investment. A lack of suitable information creates problems of credibility (Goodhart 1989:209). As in other economic sectors, monopolies in financial services can arise quiet easily.

Because the central bank is the ultimate source of liquidity to the banking system this role is eventually seen as one which provided a form of "insurance". This created a moral hazard risk in that commercial banks could undertake careless and risky business believing that they were protected "...by Central Banks from the consequences of their own follies..." (Goodhart 1988:7). Moral hazard can be lessened by the central bank becoming involved in banking regulation and supervision. This leads to an interesting insight as to the real role of a central bank. In the case of the United States the Federal Reserve's role, as authorised by Congress, was supervisory in nature. This role is in the first place, to be a major participant in the nation's payment system; secondly to be the ultimate source of liquidity by lending at the discount window and finally, to regulate and supervise both domestic and international financial markets. These functions predate the monetary function which involves the control of the money supply. It could be said that the monetary function had been "grafted" onto the supervisory role (Bush Commission 1983 in Goodhart 1988:6-7).

To achieve the regulatory objectives of a stable financial system, protection of consumers and an efficient financial services market, a series of intermediate regulatory targets are used (Falkena & Llewellyn 1994:10-11). Each regulatory objective has one or more intermediate

targets. These targets, as regards the stability of the financial system, relate to suitable levels of risk control both within financial firms and across financial markets. Consumer protection relies on intermediary targets such as the protection of depositors, full disclosure of information and the integrity and competence of the financial institution. The efficient functioning of financial markets is therefore achieved through targets which ensure the maximum level of competition as well as free and fair access to a particular financial market.

Falkena and Llewellyn (1994:12) warn however that regulation may create its own problems in the form of potential monopolies if entry criteria are too restrictive, or if there is over-regulation which will increase the ultimate cost to the consumer or the potential of "regulatory capture" where a regulatee may be in a position to manipulate the regulator to his own advantage.

The fact that financial regulation is not restricted to banks alone but covers various other financial markets such as securities trading, investment funds and life insurance has also led to a situation where different aspects of the financial system may fall under the jurisdiction of different regulators. This gives rise to what has been called regulatory arbitrage. Regulatory arbitrage occurs where the institution being regulated may, because it operates in more than one financial market, be in a position to choose which regulator it would prefer. That choice will be based on the financial market where the existing regulatory regime is best suited to the market participants requirements. Regulatory arbitrage can also occur between countries.

At present financial regulation is still essentially a national issue. It relates to the regulation of a financial system within a country. The ability of financial agents to operate across international boundaries and to cross over what one may term "regulatory" boundaries, has led to growing concerns among bank regulators. The fact that different regulatory policies and goals may lead to international regulatory arbitrage and its potential affect on the financial systems of the countries concerned has led central banks in the so-called Group of Ten countries to consider close co-ordination between themselves (Bank for International Settlements 1993b:34). This follows closely to similar concerns expressed by Justice Bingham in relation to the supervision of banks across international boundaries in the case

of the collapse of the Bank of Credit and Commerce International (House of Commons 1992:186).

(c) Development of the theory of the financial firm

The financial firm has been seen generally only as the intermediator in the financial system. As an intermediary, the financial firm is seen solely in its role of accepting funds from surplus economic units and lending funds to economic units which are in deficit. In its simplest sense financial intermediation is the interposing of a third party between ultimate lenders and ultimate borrowers. The most basic form of intermediary is the broker who merely facilitates the transaction between the lender and the borrower. A financial intermediary becomes a party to the intermediation process by holding a claim against the borrower and issuing a claim on itself to the lender (Chant 1992:43). Established theory of financial intermediation is based on the cost advantages obtained by undertaking transactions through financial intermediaries. This cost advantage arises because of the economies of scale that can be achieved by the financial intermediary (Chant 1992:45).

In terms of more recent thinking banks have been seen to hold a special place in the intermediation process because of the extensive knowledge that they have of their clients not only as lenders and borrowers but also because a substantial proportion of all their payments are made through the banks (Goodhart 1989:121). Technology has provided alternative cost effective payment systems. The increased efficiency of the payment system has widened the scope of the financial system by assisting in the creation of new instruments and markets. Banks are in a position to offer economies of scale in the pooling of risk, the diversification of their lending portfolios and the provision of payment services. They are also better able to use private (or confidential information) to assess and monitor the status of borrowers, better able to enforce control over borrowers and to provide constant liquidity, either to borrowers generally or to lenders through their preparedness to allow the early redemption of deposits (Davis 1993:41-47).

Revell (S.a:3) believes that the financial firm is subject to the same pressures of profit making as any other firm. He maintains that there is a need to develop a unified theory of

the financial firm, one that could be applied equally to all types of financial institutions. Such a theory should cover all financial firms irrespective of where they may be located or what type of finance they were involved in. A financial firm is a concept wider than just a bank. There is, he states, no difference between a bank and a non-bank intermediary. Both operate in exactly the same market. The theory needs to address both the theory of the financial firm and the economics of the financial industry. Revell notes that academic interest in the main has focused on the macroeconomic and monetary policy aspects of banking. This has found expression in simply seeing a bank in its intermediary role in the financial system. In this role a bank is restricted to accepting deposits from the holders of surplus units and lending money to those who are in deficit.

Revell maintains that financial institutions are not limited to serving only as intermediaries in the financial system. In addition to the intermediation function, banks are involved in providing other services where intermediation plays no part at all. He gives the following examples of other activities of banks:

(i) the guarantee function in adding its name, or accepting bills either of exchange or for accommodation

(ii) trading for profit in assets from its investment, loan or foreign exchange portfolios

(iii) the provision of other services such as portfolio management and providing advice

(iv) facilitating, as an agent and for a fee, direct borrowing and lending between deficit and surplus units

The only distinction that remains is between those institutions who provide payment services and those who do not. Only those financial institutions involved in payment services are able to benefit from the credit multiplier because the payments which arise from money created in this way are "trapped" in the payments system. Institutions who do not offer payment services benefit only minimally "...from a somewhat haphazard re-depositing of the loan proceeds..." (Revel S.a.:7).

Because of the high focus that economists have given to the intermediation function the only prices that have been taken into account has been the interest rate. All else has been regarded as non-price competition. However the provision of other non-intermediation services by financial firms for which they charge either a fee or a commission, evidences that the use of the interest rate as the only price is perhaps incorrect. The provision of intermediary services between borrowers and lenders at a "fee" (the interest rate) may be easily confused with the provision of other financial services, where a non-interest related "fee" is the most appropriate charge.

Revell (S.a.:10) refers to bank branching as the type of non-price competitive issue which is most widely used to illustrate this effect in banking. He points out however that this is a competitive issue, because the continuing increase in their operating costs has led to a contraction in the number of bank branches in many European countries. The development of electronic payment systems has reduced further the competitive advantage of a large branch system. The necessity for a large branch system, which was regarded as a prerequisite for a bank to effectively participate in the payment system, was in effect a barrier to entry.

Similarly, other non-bank financial institutions such as brokers and agents also provide some or all of the above services. On occasion they will provide intermediation services as well. Revell supports the view that there should be no distinction between banks and non-banks. He believes that this distinction persists because of the efforts of various central banks to define and control the stock of money.

There are a number of other writers who in recent years have assumed the financial firm to be a profit maximiser. Fama (1980:39-40) maintains that the accounting, processing and conversion of deposit claims into currency is a bank's main function for which a transaction fee is levied. Moses (1983:4) maintains that "... financial institutions can be viewed as profit maximisers within the constraints set by official regulation, available technology and the prevailing demands for services." O'Hara (1983:128) sees the banking firm as one in which it's manager (as distinct from its owners) maximises his utility subject to constraints imposed both externally, by regulators, and internally, by stockholders. Profit maximisation is one

of the possible objectives of the manager. Entry into the banking system is driven by the possibility of mopping up "...pockets of excess profits..." (Revell S.a:9). The development of the various managerial and behavioural theories of the firm is still ultimately dependent upon the maximisation of profits to achieve the various objectives that these theories postulate.

Notwithstanding the fact that the financial firm still fills the intermediation role in addition to providing other types of financial services, Revell's approach is to view the financial firm as being under the same imperative to seek a profit as is any other firm. He does however place two qualifications on this. Firstly, profit maximisation is to be considered over the long run which is no different from any other firm. Revell makes this observation because he says that there is a tendency in the case of financial firms to only look at short-run profits. The second relates to the size of the financial firm both in the extent of its operations and its market share. Given the fact that price competition is rare in financial firms, due to both outside regulation and internal collusion, size in terms of market share has become the only way of maximising profits. The financial institution is dependent upon its size to grow its capital in the face of regulatory capital adequacy requirements. The growth of the financial firm's capital base is, in Revell's view, dependent upon profits.

In addition to the profit motive Revell maintains that institutional features which distinguish between various financial institutions need to fall away. A large bank is no different from a large insurance company. Instead the focus should be on the market that the financial institution serves. He illustrates this by examining the differences between the "large customer", or the wholesale market, where products and services are tailor-made and prices subject to negotiation and concession and the "consumer" or retail "mass-market" where product, services and prices are standardised.

2.3 INNOVATION

2.3.1 Definition of innovation

As already noted, innovation is defined as "to bring in novelties or to make changes".

(Concise Oxford Dictionary:1954). From this definition alone it is clear that innovations can and do occur across the whole spectrum of human activity. Every activity that man engages in, such as agriculture, medicine, production, transport, warfare and so on, is subject to some form of innovation at some stage. As an example innovations arising from the invention of the wheel, have played a major role in human affairs and continue to do so. One need look no further than the windmill, gears, the millers stone, the potters wheel, computer diskettes and the compact disk to see the immeasurable effects of what innovation has wrought to this basic invention.

In defining the entrepreneur and his function, Schumpeter (1947:151) provides us with a definition of innovation. This definition states simply that innovation is "...the doing of new things or the doing of things that are already being done in a new way." The new thing that is being done need not be something major - it can be a simple or even insignificant change. This definition is supported by Gaines (in Silber 1975:64) who states; "An innovation is a change in techniques, institutions or operating policies that have the effect of altering the way in which an industry functions."

A clear distinction is made by Schumpeter between invention and innovation. He sees invention as being a "new" thing or process brought about by science or technology. An innovation however need not necessarily come about because of an invention. Kane (1988:329) also stresses the distinction between invention and innovation. An invention is the discovery of a way of doing something that has never been done before. In some cases it may be a better way of doing an existing function. Innovation however relates to the way that the invention is applied in a profitable manner.

This distinction between invention and innovation is put succinctly by Schumpeter (1949:266) when he writes; "I have always emphasised that the entrepreneur is the man who gets new things done and not necessarily the man who invents." While the process of invention and entrepreneurship could in effect be carried out by one and the same person, it is really not necessary that these two functions are combined.

Schumpeter sees the term "entrepreneur" as being simply another way of saying "business

leader" or just an "innovator". However the important element is the agent and his function, rather than the terminology. On the one hand a business leader is involved in the direction of large enterprise while on the other hand an entrepreneur or innovator need only be involved on a very small scale in a tiny business venture.

Entrepreneurship need also not involve only a single person. The work of the entrepreneur may be undertaken by a group of people or even an entire organisation such as a firm or a government department or indeed a government. The state may well intervene in the innovative process because of a national emergency or to meet an urgent national objective. The needs for both defensive and offensive weapons, in which the state acted as entrepreneur, was a major inventive and innovative force in the Second World War among all the combatant nations. Equally so the United States' objective to land men on the moon served the same purpose.

Even with a clear distinction between invention and entrepreneurship Schumpeter (1947:153) refines his definition even further. Schumpeter sees entrepreneurial activity and innovation as one and the same thing. He maintains that entrepreneurial activity may be classified by three criteria. These are;

(a) the type of business undertaking, be it commercial, industrial or financial,

(b) the distinction between four different types of activities that the business undertaking may engage in. Schumpeter list these activity types as;
   - (i) the introduction of new products (product innovation)
   - (ii) the introduction of new technologies to the production of existing products (process innovation)
   - (iii) the development of new commercial combinations such as new markets for finished products or new sources of supply of raw materials for the manufacturing process
   - (iv) the reorganisation of segments of industry such as the development of a monopoly or a cartel.

(c) the classification of entrepreneurs according to either their origin or sociological type.

Invention and innovation also involve time delays or lags. Firstly there is a discovery lag. This is due to the delay between an invention and its "discovery" by an entrepreneur. A further delay occurs from the time that the entrepreneur becomes aware of the invention until the time that the innovation is put into use or marketed. This is the execution lag.

From its original concept in the form of invention to its practical application by way of innovation to its ultimate production, a new product or service normally goes through three phases. These are;

(a) invention by the inventor
(b) innovation by the entrepreneur
(c) production under a manager.

While Schumpeter may well be correct in his assertion that technology plays a vital role in the initial invention and the innovation that flows from it, the inventive process itself is not always dependent on new technological developments. New inventions can occur without the use of new technology. The same is true for the processes that the new invention may give rise to. Existing technology may be more than adequate to cater for both the new invention and the innovation.

2.3.2 The causes of innovation

According to Schumpeter the whole basis of economic change in a capitalistic society hinges on the activity of the entrepreneur. The entrepreneur is the person who innovates. In applying the innovatory process the entrepreneur enjoys an advantage which Schumpeter (1949:70) refers to as entrepreneurial gain or monopoly gain. This advantage occurs because of the "head start" that the entrepreneur enjoys and the fact that competitors can only follow after a time lag. This competitive advantage may be enhanced or extended by the entrepreneur through the registration of a patent over his process or product. Once the new process becomes available to the competitor, prices fall and the entrepreneur or innovator

ceases to enjoy his monopoly gain advantage.

Technology is often given as a cause of innovation (Van Horne 1985:625). Improvements to production techniques are generally referred to as "technological innovation". Technological innovations may be major or minor. A major innovation is, according to Rosenberg (1994:15), one which provides the basis for a number of smaller innovations which either depend on or are complimentary to the original innovation. He illustrates this by reference to man's ability to generate electricity. This ability did not lead to the invention of products such as the light bulb or the transistor. However their invention would not have been possible without electricity.

Notwithstanding the important role that technology can play in the innovative process, innovation is not always solely dependent on technology. Innovations can come about without any advance in technology. This point has been made clear by Kamien and Schwartz (1974:2) when they distinguish between "product innovation" and "process innovation". In the case of product innovation the factors of production are rearranged into new combinations as outlined by Schumpeter. This creates a new product, something which has not existed before. The technology used may well remain the same and the innovation will therefore not be as a result of technology. New products are potential new sources of revenue for the firm. A new product gives the firm an initial advantage over its competitors which has the potential to allow for increased revenue. The patenting of the product can also create a monopoly share of the market. Process innovation, on the other hand, generally relates to the application of technology to the manufacturing process to achieve greater efficiency. This type of innovation alters productive capacity and allows the production of goods in greater volumes than before (Holland 1975:159), leading to a reduction in production costs per unit. Alternatively an improvement in the quality of the good may well lead to increased sales and hence revenue. New processes may also be protected by patent. The objectives of both these innovatory practices are the same - a maximisation of profits - either through a reduction in production cost per unit or an increase in revenue earned per unit. Product innovation aims at the development of new products to achieve profit maximisation. Process innovation, on the other hand, looks to changing the way that the existing product is produced, often harnessing technological advances to achieve this end.

Innovation may also have an effect on what may at first sight be regarded as non-cost aspects such as competition or regulation. On closer examination however it is clear that despite this emphasis, the final effect is still on profit maximisation. Profits may be maximised by either reducing costs or increasing revenues. Competition relates to outperforming ones competitor. Competition, whether in increased market share or higher profits, has a prime focus on keeping costs as low as possible. Regulation, be it of commerce or industry or financial services, is a cost item too. Compliance with regulation brings with it added costs, either in the form of additional requirements, such as safety features or worker facilities in a factory or safety features in the form of capital requirements or specific rules in the case of financial services. Bypassing regulation reduces costs. Innovation therefore is a process which seeks to reduce the cost of production, be it of consumer or durable items or of financial services.

Freeman (1990:111) maintains that, "Innovation is a coupling process and the coupling first takes place in the minds of imaginative people. An idea 'gets' or 'clicks' somewhere at the ever changing interfaces between science, technology and the market".

In summary it may be said that while inventors are responsible for inventions it is the entrepreneur who is responsible for innovations. Entrepreneurs do this by taking an invention and transforming it into a practical profit making innovation. There are many inventions that have never followed this path of development because the innovation which is necessary to achieve this has never occurred.

There is also a distinction between entrepreneurship and management (Schumpeter 1947:150). Innovation is a part of the function of the entrepreneur and involves a "creative response" because it lies outside of the sphere of what already exists. Innovation is something new because it is the creation of something where there was nothing before. An "adaptive response" occurs when an economy responds within the range of existing practices. This is also called the "management response". Management adapts its practices to cater for this new "thing". There is a difference between enterprise and management. The establishing of a business which is based on a new idea or innovation, which is enterprise, is different from managing the administration of an existing business.

There are also yet unanswered questions as to what size of firm is the most likely to innovate. Large firms are the most likely candidates according to Schumpeter (Silber 1975:62) because he felt that they were better able to withstand the cost of failure. There is an opposite view which maintains that innovations are more likely to come from small firms who are driven by competitive urges to break into new markets. It is also easier for a small firm to try something new as they have the ability to act rapidly, something that large bureaucratic firms lack.

2.4 FINANCIAL INNOVATION

2.4.1 Definition of financial innovation

Returning to the dictionary definition which states that to "innovate" is "to bring in novelties or make changes" (Concise Oxford Dictionary:1954), and from the preceding discussion on innovation generally, financial innovation may be defined as "to bring in novelties or to make changes to the financial system". Financial innovation can take the form of new financial instruments, new financial institutions, new financial markets or new financial practices. Financial innovations make financial markets more efficient and complete (Van Horne 1985:622).

2.4.2 The causes of financial innovation

The cause of financial innovation is self interest which manifests itself in the maximisation of profits. This self interest finds expression through Adam Smith's "invisible hand". Financial institutions seek out, through the innovative process, the most efficient, cost effective way to maximise their profits either on their existing products or potential new ones. Financial innovations come about on the basis of anticipated material gain. Financial innovation may also be understood as a cost-benefit analysis (Flood 1992:4). Profits occur where a change takes place which either permits a reduction in costs or an increase in revenues or where both of these occur simultaneously. Van Horne (1985:629) puts it even more bluntly when he writes, "...it is the profit motive that gives rise to financial innovation."

Llewellyn (1989:109) sees as the cause of financial innovation the fact that there has been a relaxation of the rigid boundaries between various financial institutions on the one hand and a similar breakdown in the boundaries between various financial instruments on the other. Additionally simultaneous changes to financial regulation, the application of technology to the financial sector and the advent of more openly competitive financial systems has aided the innovatory process. He concludes that structural change in the financial system and financial innovation are really only two parts of the same process.

There is a fine balance within the financial system, particularly in banking, which has been struck between the need for innovation and the prudent conduct of business. Like all industries the financial industry is forced to innovate to ensure continued growth and profitability. Additionally the financial industry also needs to ensure that the confidence of the public is not diminished. This confidence is achieved through prudential control which in the main comes about through financial regulation by the authorities. Holland (1975:160) refers to this interaction as a "...kind of dynamic tension between forces, on the one hand impelling the innovative activities of banks, and on the other hand compelling need for prudence and the avoidance of actions that would result in weakening the publics confidence in our banking system".

The causes of financial innovations may also have a direct bearing on the type of financial innovation that comes about. In his examination of some of the financial innovations which occurred in the United States of America between 1978 and 1984, Van Horne (1985:625) has categorised what he views as their primary causes. In his analysis Van Horne sets out six primary causes. These are:

(a) Volatile inflation and interest rates which created a demand for the development of risk averse financial products.

(b) Regulatory changes and the circumvention of regulations which "...occurred simply to get around existing regulations" (Van Horne 1985:623).

(c) Tax legislation which creates a demand for financial products which

circumvent the regulations and seek to maintain optimum after tax returns.

(d) Technological advances which foster greater efficiencies in the financial system. These are aimed at a cost reduction or profit maximisation.

(e) Changes in economic activity. Prosperity triggers a search for growth while a recession induces the creation of financial products which reduce risk.

(f) Academic work in areas such as asset pricing, interest rates, options, futures and derivatives has been well received in the financial world especially as the latter has become aware that they can profit from this.

The causes of financial innovation can be viewed as supply-push or demand-pull. The creation of new techniques or instruments which are made available to financial markets are supply-push factors. In the case of demand-pull the requirements of the market are accommodated through the innovatory process. A clear classification of the various aspects of financial innovation is not always possible in practice. The causes of financial innovation are also closely linked to the type of financial innovations that occur.

2.4.3 The types of financial innovation

(a) Competitive and circumventive financial innovation

In addition to normal business conditions the causes of financial innovation may be ascribed to the barriers that exist to the financial firm's goal of profit maximisation. There are two barriers. Firstly, there are the activities of the firm's competitors which may be termed competitive barriers. Secondly, there may be rules and regulations, imposed from outside, on the conduct and the activities of the business which may be termed regulatory barriers. Both these barriers may be overcome by innovation. If the innovation is to surpass the competition it is a competitive innovation. If, on the other hand it is aimed at overcoming or bypassing regulation, then it is a circumventive innovation.

Using Van Horne's six primary causes of financial innovations, discussed in 2.4.2, it is possible to categorise these in terms of either competitive or circumventive financial innovations. Financial innovations to reduce risk are regarded as competitive financial innovations. The essence of all business or entrepreneurial activity is risk. However, degrees of risk may differ. The lower the risk the greater the chance of success in securing a profit. It follows that if risk can be reduced the chance of profitability is increased. Reducing risk is therefore a competitive issue. Similarly academic work, which has been directed at how financial institutions can become more profitable, may be regarded as competitive.

Van Horne's six causes may then be re-arranged into either circumventory or competitive categories on the basis that items "b" (regulatory changes) and "c" (tax legislation) are circumventory while items "a" (reducing risk), "d" (technological advances), "e" (changes in economic activity) and "f" (academic work) are competitive.

Although financial innovations may consist of both circumventive and competitive innovations, each driven by different causes, there is an interaction between the circumventive and competitive aspects. This interaction between regulation, its circumvention and competition are stated clearly by O'Driscoll (1992:117) when he writes, "Bankers stand to capture the gains from financial innovations that circumvent regulations. For every form of risk-taking constrained, bankers have found two new ways to take on more risk in the search for higher returns. The lure of higher profits will always make it feasible for banks to pay inventive employees more than regulatory agencies can compensate methodical examiners. If an examiner comes along who outmanoeuvres the best and brightest products of the nation's business schools, a depository institution will probably lure him away." Competition and regulation are essentially in conflict.

(b) Product and process innovation

As in the case of innovation generally, financial innovation may also take the form of process innovation or product innovation. Process innovation is the application of new procedures in the "production" of financial services, often involving the use of technology. Process

innovation in the financial sphere may best be illustrated by the use that is being made of technology to improve the payment system, from the paper based, labour intensive cheque system to automated electronic payments. Process innovation may also result in product innovation. Examples of product innovations which have come about as a result of the underlying process innovation are the various financial derivative products and the ATM (automated teller machine). Both could not have come about if it had not been for the invention of the computer. These examples illustrate Rosenberg's distinction between major and minor innovations (1994:15). In this case the computer is the major innovation, while derivatives and the ATM are the minor innovations. To the firm that developed it, the computer was a product innovation. To the financial system the use of the computer is a process innovation while the derivative and the ATM are both product innovations. Whether they are process or product innovations the focus in both cases is on the maximisation of profits, either through increased revenue (product innovation) or a reduction in costs (process innovation). Product and process innovation may also be classified as either circumventive or competitive.

(c) Patents and copyrights

Unlike a new industrial product or process the ability to register a patent or a copyright may not be possible in the case of financial innovation nor may it be desirable. Gowland (1991:98) states that there are three reasons why financial innovations are not normally patented. Firstly, patenting may be impossible because of legal reasons. In the second instance financial innovation may be seen as a marketing tool. For a firm to be seen as the leader is important. Finally, the registration of a patent may not be desirable because of the need to link or "network" the financial innovation with other similar products or processes. According to Gowland (1991:98) "...the optimum strategy for a firm may be to market products which are not yet provided by other firms but soon will be."

(d) Diffusion of innovation

On occasions the innovation itself is not a new idea but the adoption or adaptation of a well known practice in one financial market sector by another financial market sector in what

Podolski (1986:108) refers to as a "diffusion of innovation". An example is the development in the 1960s of the Eurocurrency market even though the practice of dealing in the currency of a third country was in use in London before the First World War. Financial innovation often occurs in a spasmodic way and is often linked to "swarms" or "epidemics" with sudden bursts of innovative activity.

2.4.4 The role of technology in financial innovation

In recent times technological advances have played a major role in aiding financial innovation and no study can be complete without a brief look at the nature of these advances and the role that they play in the innovative process. In a wider sense technology is central to economic growth. Technology provides the know-how to improve economic performance. Technological knowledge does not stand on its own. It is a cumulative process, with each major change making up the foundations on which the next layer of change will take place. Rosenberg (1994:16) refers to this cumulative process as path dependency. Where a reduction in costs is sought, the use of technology is often seen as the force which produces this cost reduction. Financial innovation is driven by profit maximisation, and technology contributes to this.

The effects of technology on financial innovation are more widespread than simply a tool with which financial procedures and practices may be carried out more effectively. Technology has permitted a lowering of the cost of entry into financial markets, which in effect is the removal of a major barrier to competition. This is illustrated in the theory of contestable markets (Baumol 1982:3). A contestable market is one where entry is free and exit costless. Free entry refers to the fact that the potential entrant is not at a disadvantage either in terms of how he produces the good or the quality of the good. Davis and Davis (1984:45) use the theory of contestable markets to illustrate the effect that technology has had on barriers to entry to the banking system in the United Kingdom. Banks are now able to offer products and services such as electronic funds transfer and home banking which is not reliant on a large branch infrastructure and its concomitant high investment in bricks and mortar. Coupled with lower costs are lower capital outlays, the absence of patents and the availability of a mobile, trained labour force. Additionally the use of technology provides

new financial services as well as a lowering of the cost of existing services.

Technology, as applied to the financial sector, has a long history. These began with various mechanical aids to computation and record keeping (Steiner & Teixeira 1990:29-31).[1] The development of the programmable computer during the Second World War, to assist in artillery calculations, marks the start of the modern computer. Since then technological advances have allowed for a huge reduction in the size and cost of computer equipment with a concomitant increase in its proliferation as well as the speed and relative ease of operation.

In the case of financial innovation technology may be divided into "physical" technology and "miscellaneous" technology (Silber 1975:69). The former relates to the use of the computer such as the delivery of banking services through, as an example, an automated teller machine (ATM), while the latter relates to the better application of information. The development of the derivatives market is an example of the application of "miscellaneous" technology. Technology in the form of the computer has in the first instance permitted the carrying out of routine, tedious calculation and accounting procedures in an efficient and speedy manner. Secondly, the use of the computer has permitted the introduction of sophisticated automated financial processes such as the automated teller machine (ATM). Both lower bank operating costs. Walker (1978: 65-66) makes the point that ultimately the use of electronics to transfer funds and settle accounts will be driven by its cost effectiveness. He bases this on the fact that non-electronic processing costs are rising rapidly. Such costs relate to wages and salaries, paper and postage. He speculates further that even retaining a labour intensive cheque system would, in time, involve an increasing dependency on electronics to help complete the cheque clearing process.[2]

While the use of modern telecommunications technology by the financial sector is not new, the growth in the volume of these transactions and the ability to interface them into banking

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[1]An early application was a mechanical calculator called the "Arithmometer" which appeared in the 1820s and was used by banks and insurance companies. Bookkeeping machinery started to come into use in the 1890s.

[2]This point has proved to be correct. In South Africa cheque processing has been semi-computerised since 1973. Future developments are aimed at clearing only the electronic data relating to the cheque.

and financial systems is a logical extension to the development of the computer.[3] This technology has not only permitted the flow of funds between financial institutions but has also allowed the clients of such institutions direct access to the payment system. This has led to a degree of de-linking the payment system from the banking industry as well as circumvention of banking regulations in certain parts of the world. This could have implications as regards the ultimate ability of the monetary authority to control the money supply because with the existence of various alternative mechanisms of exchange "...in a competitive, deregulated and technological advanced financial environment there would be no well defined concept of the money supply, and the preconditions for the conduct of conventional monetary policy would not exist." (Smithin 1994:15).

The role of technology in the financial sphere has been twofold. On the one hand it has enabled the automated processing of traditional payment instruments such as the cheque. On the other hand it has created new types of payment instruments, generally referred to as EFT (electronic funds transfer) and new types of financial instruments such as derivatives, which involve complex financial calculations.

The impact and the extent of technology on payment systems and subsequently on economic activity and monetary policy has not been fully appreciated until recently. The Bank for International Settlements (1994:174) give substance to the extent of their concern when they report, "...that it takes only about two and a half business days for the interbank funds transfer system in Japan to generate a turnover equivalent to the country's annual gross domestic product. In the case of the United States and Germany, it takes little over three and four days respectively." This increase in the ratio of interbank transfers to gross domestic product is most pronounced in Japan where it increased from about 20 in 1980 to 120 in 1990. The same period in the United States shows an increase from around 28 to 76. These figures are only an indication because they do not reflect the payments that occur between accounts in the same bank. The Bank for International Settlements (1994:18) maintains that to a large degree these increases reflect the introduction of new short term money market instruments such as note issuance facilities, currency and interest rate swaps, currency and

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[3]Banks have been using the telegraph to move funds between them for well over a century. In the United States the Fedwire system started in this manner in 1918 (Steiner & Teixeira 1990:31).

interest rate options and forward rate agreements.

2.4.5 Circumventive innovation

Circumventive innovation occurs where the financial institution looks for a way to bypass direct controls imposed by the monetary, regulatory or other authorities. It has been suggested that the entire history of money is made up of the continued evolution of new types of money, which has come about as a part of a circumventory process, such as to overcome shortages or regulatory restrictions. Within the context of financial innovation, circumventive innovation can relate to two distinct areas. The one is the circumvention of regulatory or legislative requirements. These may be areas such as supervisory or prudential control of financial institutions or fiscal measures such as taxation laws which reduce the return on financial products offered to the market. The other relates to the circumvention of monetary policy. Circumventive innovations may therefore be induced by the need to bypass:

(a) banking regulations

(b) tax laws

(c) monetary policy requirements.

In all three cases profit maximisation for the financial institution is dependent on the barrier being removed. Indirect controls are easier to bypass through normal competitive activities.

Circumventive innovation has been referred to by Silber (1975:64-66) as constraint-induced innovation. His basic hypothesis is that financial innovation is a result of attempts by financial institutions to either remove or lessen the effect of financial constraints imposed on them. The financial institution is, according to Silber, assumed to maximise its utility subject to four constraints. These constraints may be internal to the financial firm such as (1) its financial capacity or (2) its internal policies or external to the financial institution, such as (3) regulation and (4) prevailing market conditions. If an outside or exogenous change occurs either in the market or as a result of regulatory action, such a change can induce innovation in the form of new financial instruments or practices. This is because the constraint creates a strong incentive to either remove or modify that constraint and this finds expression in a search for new internal policies such as new financial instruments. The

innovation triggered by this change will either be one that seeks to restore the institution's former level of utility (adversity innovation) or one that tries to accommodate the increase in the cost of abiding by the constraint.

Constraints bring about changes to the environment in which the financial institution operates. Such changes may be sudden and direct or subtle and only apparent after a lag. These changes place the financial institution's assets (its loans) and its liabilities (its supply of funds) under direct threat. The response of the financial institution is to innovate both new sources of and applications for funds. How the financial institution innovates will vary from institution to institution, based on its needs and its competitive situation. The institutions positioning in the market and where it perceives its optimum position to be will determine its innovatory ability. Where a financial institution cannot modify existing products to accommodate change it will innovate new products.

Circumventive innovation can also be described by Kane's (1981:355) view of regulation as a dialectic or a process driven by a series of opposites. On the one side there is the regulatory process. The regulatory process is, according to Kane, a political process. On the other side of the coin there is avoidance of regulation by the regulatee. This Kane refers to as an economic process. These two processes are continually adapting to each other in an endless series of conflicts between economic power on the one hand and political power on the other. This creates a series of lagged responses where both the regulator and the regulatee each seek to maximise their own objectives. The regulatee seeks profit maximisation while the regulator seeks to maximise his control of the financial market. Kane (1981:358-359) sees it as an evolutionary interaction between the economic and the political, as a struggle between the invisible and the visible hands. The invisible hand is the market place. The visible hand is regulation. Each party, the regulator and the regulatee, attempts to undo what has just been done by the other. Each new regulation immediately triggers a search for a way to circumvent it. Kane (1988:332-333) illustrates this by using Hegel's view of opposing ideas, *thesis* and *antithesis* and the conflict resolving *synthesis*. These forces are driven by the tension between a series of paired opposites or a dialectic. The opposing ideas are the thesis and the antithesis which are then resolved by a third conflict resolving idea; the synthesis. The process continues because each synthesis becomes the

thesis in a new dialectic. The evolution of thinking on any issue is seen as being driven by a three stage cycle. Each idea or thesis has opposition in the form of antithesis. The solution to the problem, the synthesis is immediately confronted by a contradictory proposition. This ensures that the cycle is continually repeated. When applied to regulation the process may flow through two alternate sequences depending on whether the regulator or the regulatee starts the adaptive process. The one sequence is where the regulator starts the process and follows the pattern of regulation - avoidance - re-regulation, while the other sequence, which is initiated by the regulatee, follows the pattern of avoidance -re-regulation - avoidance. In financial markets this circumvention takes the form of substituting the now regulated product for a similar unregulated one. This practice is called product substitution. According to Carter (1991:169) financial innovation has made financial regulation obsolete.

2.4.6 Competitive innovation

Holland (1975:160) refers to those innovations which occur for reasons other than the regulatory handicap as transcendental innovations. Such innovations are driven by a range of factors including customer demand, globalisation of financial markets and new products aimed at the industry maximising its profits. Transcendental innovation may, however, best be categorised as competitive innovation. Competitive innovation relates to innovations which arise as a response to competition within an industry. Many innovations are aimed at increasing the competitive advantage of the innovator. Within competitive innovation Freeman (1982:170) refers to two additional aspects - offensive innovation and defensive innovation. Offensive innovation is aimed at either achieving or maintaining market advantage. This is also sometimes referred to as a creative response, which is product innovation or the creation of something entirely new. Defensive innovations are the strategies which are pursued by those who respond to offensive innovation by imitation or improvement to those innovations introduced by their rivals. The imitation of innovation or defensive innovation is often accompanied by "swarms" or "epidemics" of secondary innovations and improvements. Defensive innovation is also the adaptive response, which is the management reaction to innovation. Generally these are based on some basic innovation. This apparent ease of the innovatory process makes new innovations difficult to detect until they have become well established.

2.4.7 Public and private financial innovation

Financial innovation may also occur on either a "private" or "public" basis. Private financial innovation is where financial institutions introduce a new product or process, either to circumvent regulation or to achieve a competitive edge. Public financial innovation is where the change is introduced or encouraged by the regulatory or the monetary authority for their own reason (de Boissieu 1987:217-219). Public financial innovations are a result of the nature of financial systems in certain countries, where financial institutions will not introduce new products without the express permission of the monetary authority or the regulator as is the case in Germany (see chapter four).

These various types of financial innovation are illustrated in diagrammatic form in figure 2.2 and perhaps give an indication of the complexity of the subject rather than attempt to provide a definitive classification.

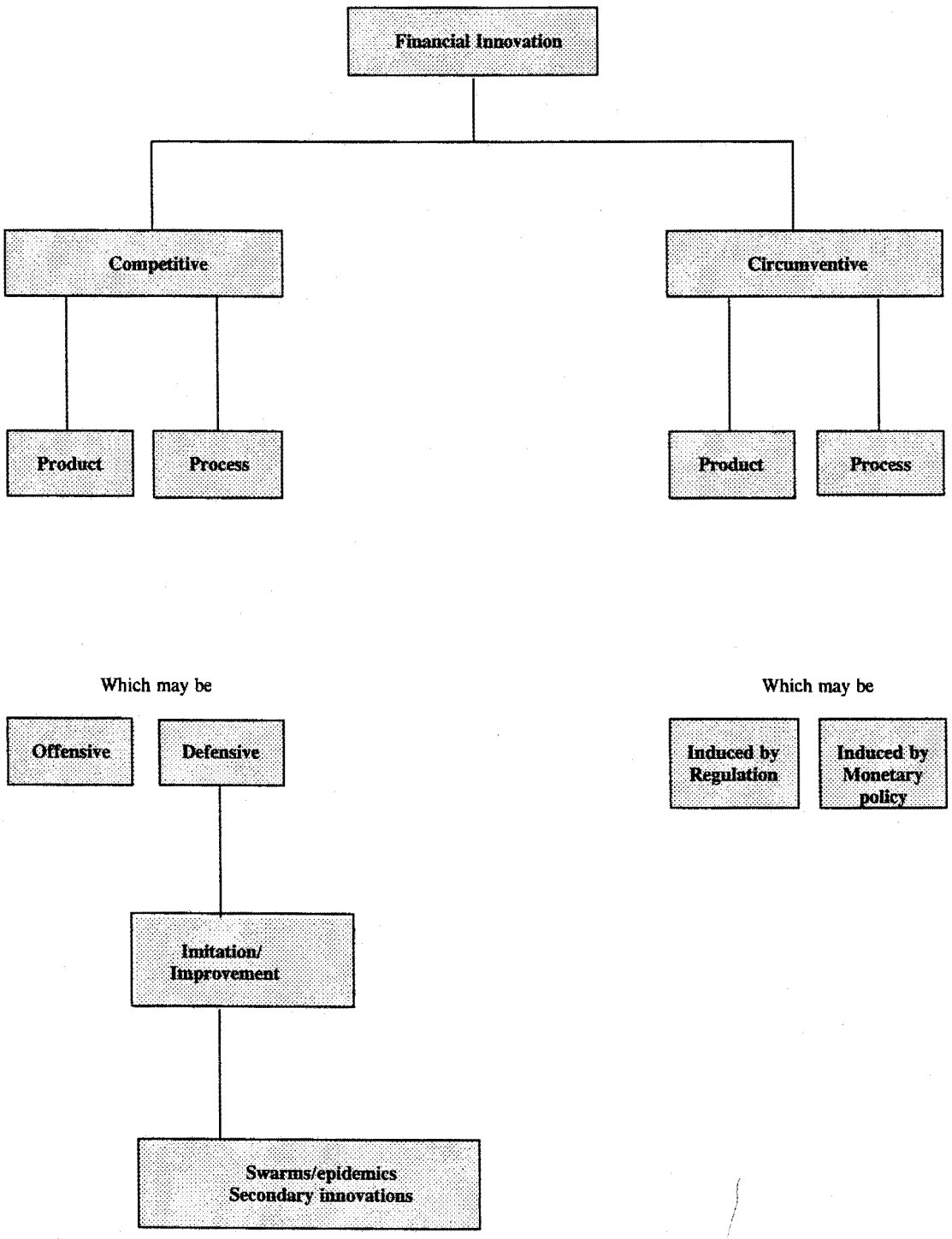
2.5 TERMS AND CONCEPTS

In the course of the examination of financial innovation use will be made of certain terms and concepts which may not be familiar to the reader. To ensure that a comprehensive understanding is maintained these are explained briefly in this section.

2.5.1 Disintermediation

Disintermediation is the bypassing of the normal intermediary function provided by financial institutions. Disintermediation occurs when either the rate of interest paid or offered by banks is not attractive either to borrowers or lenders. Borrowers and lenders may find that they can obtain a better rate by obtaining loans or placing surplus funds privately and directly with one another. Interest rates become unattractive when they are not market related. Such rates can come about as a result of direct intervention by the monetary or other authorities through mechanisms such as interest rate ceilings or quantitative controls on lending. Disintermediation usually takes the form of direct transactions between primary borrowers

Figure 2.2 **Different forms of financial innovation**



and lenders. However, under certain circumstances banks themselves may choose to provide their clients with a form of disintermediated finance. Disintermediation is a broad term which includes practices such as "off-balance sheet finance" and which is discussed in section 2.5.3.

2.5.2 Re-intermediation

Re-intermediation occurs when the effect of the restrictions that caused disintermediation are no longer binding. The borrowing and lending that took place outside of the financial system are reintroduced and take place once again within the formal banking system. This has the reverse effect to what happens under disintermediation.

2.5.3 Off-balance sheet finance

Off-balance sheet financing occurs when a bank undertakes activities which are not reflected directly on that bank's own balance sheet. Where banks are prevented, for some reason like credit ceilings or other restrictions, from lending to their clients, they accommodate these clients through various activities that are not reflected on the banks' balance sheets and hence fall outside of the ambit of regulation or other forms of control. In its simplest sense a bank would act as an "unofficial" intermediary between two of its own clients, effecting a transfer from the account of the depositor to that of the borrower. The depositor and borrower enter into their own loan agreement often supported by a promissory note issued by the borrower.

Generally a bank will undertake off-balance sheet finance where these activities would have an adverse effect on the reported nature of its business, either because of profitability concerns or because it is being used to by-pass some regulatory requirement. Off-balance sheet financing often takes the form of the bank providing various types of guarantees such as a bankers' acceptance. It is also referred to as "below the line" financing because it is often reflected on the balance sheet as a contingent liability.

Off-balance sheet finance may also take on a number of specific forms, some of which are discussed below.

(a) Off-shore finance

Banks may arrange "off-shore" finance for clients importing goods. Under such a scheme the foreign liability is funded overseas by a foreign bank on the "Euromarket" against the domestic bank's guarantee of the local borrower. This guarantee is a contingent and not a direct liability on the balance sheet of the local bank. Such "Eurofinance" in itself does not serve as a means for credit expansion but merely as a vehicle to finance a domestic borrower in an external market. Such off-shore finance provides for an indirect increase of domestic credit (Bell 1980:322).

(b) Repurchase agreements

Use is also made of repurchase agreements, where banks sell financial assets, such as money market instruments, to the non-banking sector. A repurchase agreement is the sale of a financial asset with the undertaking of the seller, in this case the bank, to repurchase the same asset at a specific future time and price. The underlying principle of the repurchase agreement is to adjust the original maturity of a particular financial asset to suit the investor (Brummerhoff 1986:440). Repurchase agreements are often used by a bank as a source of "overnight" funds, through the purchase of a deposit using Treasury bills or other acceptable assets, at the end of a business day and the sale of that same deposit in return for the same assets, the following morning.

(c) Bankers' acceptance

The bankers' acceptance originated as a means to overcome the practical problems that emerged in the use of the bill of exchange, when the buyer and seller were separated by a great distance. A bankers' acceptance was originally a bill of exchange drawn on a bank to meet a short term financial need, usually in connection with the movement of goods. The link to actual trade has however grown nebulous. A client wishing to borrow money will draw a bill on its bank. The terms of the bill included the payment of interest. Providing that the bank is happy with the financial standing of the drawer, the bank accepts the bill. The drawer endorses the bill in blank so making it payable to bearer and hence fully

negotiable in the financial market at the ruling discount rate (Faure 1995:122-123). By accepting, or adding its name to, the bill, the bank "guarantees" the item, adding to it's quality.

2.5.4 Liability management

Liability management is the management of the composition and the cost of a bank's deposit base. Liabilities management has become important because banks no longer have the free pool of non-interest bearing demand deposits (such a cheque accounts) on which to expand their asset base. When demand deposits were available free, the focus was on asset management or the optimising on the returns from loans and advances. In theory banks base their lending (assets) on the extent of the deposits (liabilities) they hold. In practice what happened is the reverse. Banks will first lend (creating assets) and then seek to adjust their deposits (liabilities) to accommodate their increased asset base. The theoretical or "text book" approach is normally based on "asset management" where banks ensure that their lending is in keeping with the deposits that they hold. Put another way, a bank needs to hold deposits before it can lend them. In practice however, the bank will create assets first by making loans and will then seek to adjust their deposit (liability) portfolio to accommodate this lending.

2.5.5 Cash management

Cash management is a technique which was used initially by firms to optimise their use of cash in their day-to-day operations, by reducing the holding of any excessive cash balances which yielded little or no return. Cash management services offered by banks effectively allows clients to by-pass the need to hold separate balances for transactional, precautionary and speculative purposes, by permitting these different types of deposits to be interchangeable with one another. There are numerous cash management schemes available which range from an off-setting of debit and credit positions over a number of accounts to specific "packages" which cover demand, notice, fixed and other forms of payment and investment services.

2.5.6 Derivatives

A derivative is a transaction, or contract whose value is *derived* from the value of an underlying asset or index. Derivatives are used as a hedge against unwanted risk. Derivative transactions are usually built from two underlying basic components; the forward contract and the option. The forward contract is an obligation to either buy or sell a specific item at a set price on a specified future date. The option on the other hand, gives its holder, for a fee, the opportunity to buy or sell a specific item at a set price on a specified future date. Derivatives are based upon interest rates, foreign currencies or stock exchange indices. Derivative activity is divided between "dealers", which includes commercial banks, investment banks, merchant banks and brokers, and "end-users", which includes all manner of businesses and firms, whose objective is to control the risk in financial operations.[4]

2.6 SUMMARY

Financial innovation is not something new. Financial innovation comes about as a result of the desire to maximise profits. Profits may be maximised by increasing revenues or reducing costs or a combination of both. Financial innovation is something which is caused by demand and is often brought about by financial adversity and is designed to overcome a constraint that has been imposed either by the competition or by the monetary or other authorities.

Financial innovation must not be seen as a deliberate attempt to bypass order and stability. Rather financial innovation must be seen as a process in which the financial system changes to meet new demands made upon it. In this respect financial innovation is a natural process. It is only when this natural evolution is impeded, usually by some form of regulation, that financial innovation seeks to bypass the rules. The analogy is to a flowing stream when

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[4]The Bank for International Settlements has expressed concerns regarding the use of derivative instruments and called for "...a more extensive analysis of the public policy issues raised by derivatives..." (Bank of International Settlements 1994:117). Notwithstanding these sentiments a study by the "Group of Ten" central banks undertaken during 1994 concluded that the appropriate use of derivative markets could be expected to support investment growth and make markets and the economy more resistant to sudden shocks. Overall it was felt that the growing use of derivatives was unlikely to have any significant effect upon the conduct of monetary policy (Bank for International Settlements 1995:192).

faced with an obstruction will simply rise in level until it can flow over the barrier which has impeded its progress. The bypassing of regulation must also not be seen as illegal. To bypass regulation, financial innovation seeks out and uses paths which fit quiet legally into the norms and structures, legal and otherwise, in which the relative financial system operates. However, once a route is closed by another barrier in the form of new rules and regulations, financial innovation simply finds another path. It is here that a countervailing process of competitive demand versus regulation occurs. In a relatively free economy financial innovation is irreversible. Only the strictest of authoritarian regimes can totally impede financial innovation. It must be remembered however that there are degrees of control. Where strict controls and limitations are placed on the financial system, that financial system may be less innovative than a financial system in a fairly liberal regulatory environment.

The trends in recent years toward deregulation, globalisation and the use of technology have aided in the spread of financial innovation. Deregulation has allowed non-bank financial intermediaries to participate in financial markets. Globalisation has come about as a result of the recent rapid advances in technology and communication as well as deregulation. As a result the barriers to the movement of people, ideas and goods have all but disappeared.

Financial innovation is an interactive process driven by the forces of competition, regulation and technology. Financial innovation possesses a feedback effect which, given the right circumstances makes financial innovation self perpetuating. New products, services and markets bring new regulation and in turn new financial innovation in a never ending procession which may be traced back to the dawn of history. At some point during it's evolution financial innovation begins to be copied or imitated. This is called diffusion. Generally it is only when diffusion begins that notice is taken by the monetary authorities.

Financial innovation appears to be irreversible. Innovations, once introduced, do not always disappear when the conditions which gave rise to them no longer exist. These innovations may remain, enriching the structure and fabric of the financial system. Economists have long been aware of financial innovation. However only in recent years, when financial innovation started to be blamed for causing parametric instability in the demand for money function did it suddenly become a topic for serious consideration.

CHAPTER THREE
FINANCIAL INNOVATION AND MONETARY POLICY

3.1 OVERVIEW

In the discussion in chapter two it was shown that financial innovations may well be affected by the actions of the various authorities including those of the monetary authorities. This causal link may run from monetary policy actions, which appear to lead to circumventive financial innovations, or may run from the financial innovation itself, which may elicit a policy response from the monetary authority.

The aim of this chapter is to explore the theoretical implications that financial innovation has for the conduct of monetary policy and to look at the possible interaction between the two. This requires an examination of monetary policy, its development, its relation to the continually evolving body of economic thought and to the practical implications of its implementation.

Because monetary policy is primarily concerned with its possible influence on money it is important to have a theoretical framework of how money influences real economic activity. Once the role of money has been established we have a rationale for monetary policy. The final step is to examine the influence of financial innovation on the effectiveness of different types of monetary policy. Does financial innovation make monetary policy less or more effective?

3.2 THE MONETARY TRANSMISSION MECHANISM

3.2.1 Historical development

The question of how monetary disturbances are transmitted to the real economy has dominated macroeconomics for decades. Today it is generally acknowledged that monetary policy affects the real economy in the short run and the price level in the long run (Thornton 1994:31). How this influence operates is referred to as the transmission mechanism. No

consensus, however, exists as to precisely how monetary policy influences output and prices.

(a) The Classical view

In the Classical view the transmission mechanism is seen as being direct (Dennis 1981:55). It is direct in the sense that there is a definite relation between changes in the money stock and the price level in the long run. According to this view money is only demanded for transaction purposes. This implies that money only serves as a medium of exchange (Dennis 1981:47). Money is held because of the timing mismatch between the moment when income is received until expenditure is incurred. The supply of money is determined exogenously which in the long run, determined the general price level. The Classical view dominated macroeconomic thought until the 1930s.

(b) The Keynesians

The Keynesian transmission mechanism is essentially indirect, the emphasis being on the short run effects. In the Keynesian transmission mechanism the feedback or endogeneity of the money supply is detected. An increase in the money supply (for whatever reason) can only affect the economy through substitution among financial assets which react to interest rate movements.

The existence of a range of assets, which range from money (highly liquid but earning no interest) to long term government stock (illiquid but earning a relatively high interest) facilitates movement along the whole chain of assets. Despite the high degree of substitutability among different forms of financial assets, there is little substitution between money and real assets. Based on these substitutability assumptions it is easy to understand why Keynes rejected any direct transmission mechanism. Consequently Keynes believed that the potency of monetary policy was largely reduced. An increase in the money supply leads to a drop in the interest rate which results in an increase in investment and a concomitant increase in income. This process is often referred to as the "cost of capital" mechanism because the drop in interest rates may be regarded as a decrease in the cost of capital which stimulates investment and raises income.

In addition to Keynes's rejection of any direct link between money and spending on real assets he did not regard his indirect mechanism as holding much promise for monetary policy. The success of any monetary policy action depends on the weakest link in the transmission mechanism. In this regard the interest elasticity of the demand for money as well as the interest elasticity of investment are critical.

(c) The Monetarists

The Monetarists maintain that the manner in which changes in the money supply will affect the rest of the economy or the transmission mechanism, is extremely complex. Because the demand for money is considered to be stable, control of the "money supply" will result in the ability to control nominal income. The actual means of achieving this is not simply static control of the money supply but a steady rate of growth over time in terms of a set policy by the monetary authorities (Dennis 1981:125). The Monetarists advocate that this can be achieved through set rules rather than allowing the monetary authorities any form of discretion. Their view is that any change in the money supply affects both the price level and output. The chosen target variable is the money supply. By allowing steady growth in the money supply in terms of pre-defined targets, they maintain that economic stability may be achieved.

(d) The Post-Keynesians

The basis for the Post-Keynesian argument is the fact that fiat money (notes and coins) and credit (or bank) money have both been incorporated into monetary theory as a single type of money without a clear understanding of the different properties that each type possesses. Fiat money exists in quantities which, to a large degree, are supplied by the monetary authority in response to the demand of the public. The quantity of credit money varies in accordance with the demand for it and is created and can be extinguished simply by variations in demand. The modern economy is a credit economy (Jao 1989:211). The overall view of the Post-Keynesians, according to Jao (1989:219) can be summarised on the basis that "the money supply is credit driven and demand determined". The money supply is endogenous as a result of credit money provided by the banks to bridge the timing

differences from production to the ultimate sale of the goods. Banks will always provide this credit because they can usually rely on the central bank's role as lender of last resort or its discount window operations.

In their prescription for monetary stability the Post-Keynesians reject the notion of a constant money growth put forward by the Monetarists. The central bank, in their view, has no control over the quantity of money. Rather they see the key as being the control of the level of wages, commonly referred to as incomes policy, as well as selective controls on the supply of credit. In an economy with credit money an increase in the monetary base is caused by an increase in the price level because borrowings will automatically increase to cover the rise in price. Because the central bank, in its role of lender of last resort, has no option but to accommodate the credit demands of the banks, the monetary authority has no real control over the money stock. Because the demand for credit from the banks is accommodated automatically the money stock is also subject to the same automatic increase. This also applies to the demand from bank clients for increased credit facilities within agreed overdraft or credit card limits. Equally so the repayment of overdrafts to the banks by borrowers automatically reduces the stock of money in the economy (Jao 1989:217-219). There is, however, no unanimity amongst the Post-Keynesians and conflicting views can be identified (Lavoie 1984:776).

3.2.2 The "channel" approach to the transmission mechanism

A more modern view of the working of the transmission mechanism may be seen in the context of various "channels". Mishkin (1995:4) list four such channels; the interest rate channel, the exchange rate channel, the credit channel and the portfolio channel.[1] Contemporary debate focuses on the strengths of these various channels and their implication for monetary policy. These channels represent a different categorisation of those already discussed under the various schools of thought in the previous section. This approach also takes into account various factors such as exchange rates, the availability of bank loans and the financial standing of borrowers which are largely ignored by the traditional

[1]Mishkin refers to "other assets price effects" which relates to the effects of the prices of various financial assets (1995:5-6). In essence "other assets" relates to a "portfolio channel".

categorisation.

Within the context of the "channel" approach there are two main views. The first, the *money* view, is founded on the idea that any reduction to the monetary base will result in an increase in the interest rate. The money view accommodates those transmission mechanisms which are reflected by the interest rate channel, the exchange rate channel and the portfolio channel. The second view is the *credit* view which incorporates two components; the bank lending channel and the balance sheet channel.[2]

(a) The money view

The "interest rate channel" relates to the basic Keynesian approach. A restrictive monetary policy will lead to an increase in real interest rates which in turn will increase the cost of capital, resulting in a fall in investment spending with a corresponding decline in aggregate demand and output. This channel is more popularly illustrated within the IS-LM model.

With the "exchange rate channel" cognizance is taken of the effects of changes in the exchange rate on exports. This channel is assumed to work on the basis that a restrictive monetary policy, as in the case of the interest rate channel, will result in a rise in real interest rates. This will result in domestic currency deposits becoming more attractive, to depositors, than deposits in foreign currencies. The result is an appreciation of the value of the domestic currency on foreign exchange markets. The increased value of the domestic currency leads to a fall in net exports because domestic goods become more expensive than foreign goods, leading in turn to a fall in total output (Mishkin 1995:5).

The "portfolio channel" may be associated with the objection raised by the Monetarists against the Keynesian view of the interest rate channel. The Monetarists believe that the effects of monetary policy should be examined on the basis of how it affects a whole range of financial assets and their prices. Monetary contraction leads to a change in relative values of financial assets. While interest rates tend to rise there is a decline in, as an example,

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[2]Cecchetti (1995:85) refers to the credit view as the *lending* view to emphasise the importance of loans.

share prices, property values and household wealth, each with a negative effect on consumption and output (Meltzer 1995:53-55). Also Tobin.

(b) The credit view

Within the realm of the "credit view" two approaches may be identified. The bank lending channel and the balance sheet channel. The bank lending channel assumes that banks play a unique role in financial intermediation. A restrictive monetary policy leads to a fall in the extent of bank deposits which in turn causes a drop in bank loans, given the assumption that bank lending is related directly to the level of deposits held. The end result is a drop in both investment and output. From the borrower's perspective any disruption to his credit line with a bank will cause a fall in output while the borrower seeks an alternative source of finance (Bernanke and Gertler 1995:40). This could be temporary if the borrower is successful or permanent if the borrower is forced out of business. However it should be noted that the applicability of this channel to large firms, who have direct access to credit through both the share and bond markets, is doubted.

The balance sheet channel is assumed to operate through the net worth of a business. This net worth can be affected because a restrictive monetary policy will cause a decline in the share price of the business. This can happen in two ways. Either rising interest rates reduce the business' cash flow and weaken its financial position or they shrink the borrowers security for any further loans. Both situations increase the risk to lenders which will lead to an actual reduction in the level of lending to the borrower with a concomitant drop on both investment and output (Bernanke and Gertler 1995:36).

3.3 MONETARY POLICY

3.3.1 The role of monetary policy

Monetary policy forms a subsidiary part of macroeconomic policy. In turn macroeconomic policy is broadly aimed at fostering economic growth, the creation of jobs and the improvement of overall welfare. Notwithstanding the subsidiary role of monetary policy, the

latter still plays a major part in how overall macroeconomic policy is implemented. Monetary policy is aimed at creating a sound and stable financial environment within which all economic activity can take place (Stals 1996:27). Monetary policy seeks to control the money supply either directly or through the interest rate. This control is aimed at effecting a change in the ultimate output of an economy as well as the various factors associated with this such as prices and hence inflation, employment and economic growth.

Monetary policy is based on the condition that a government authority, "...such as a central bank, must be the monopoly supplier of a nominally denominated asset that is imperfectly substitutable with all other assets" (Cecchetti 1995:84). This asset is commonly referred to as the monetary base. see Goodhart

By implication the definition of what constitutes money is an important issue in the application of monetary policy. While the history and the development of money are not the main theme of this study, cognisance must be taken of the fact that its definition is no easy task. Money, in its role as a medium of exchange and a store of value, takes on different forms and guises, which depend largely on the requirements of its users at any given time and place. The evolution of money, since the earliest times is the prime evidence of financial innovation at work. This process was surveyed briefly in chapter one.

Money is created either directly by the monetary authority, in the form of commodity or fiat money, or it comes into being (and similarly can be "destroyed") by some other factor such as the extension of credit by the banking sector. If the money supply is created solely by the monetary authority it should be totally exogenous and controllable. On the other hand, if internal and feedback factors are involved in determining the extent of the money supply a degree of endogeneity should be recognised. By definition, an exogenous money supply should be controllable while an endogenous money supply should not be controllable (Dennis 1981:39). The supposition that the quantity of money is endogenous has gained widespread acceptance in recent years. Today the monetary authorities are not regarded as having any direct control over a process which is determined by the interaction of the various money market participants. In today's world, commodity money no longer exists. Its place has been taken by a combination of fiat money and bank deposits, the latter being easily

convertible into fiat money. This substitutability creates fiat money which is endogenous. The Classical and Monetarist views purport that the money supply is exogenous and can be controlled, while the Keynesians and Post-Keynesians maintain that it is endogenous and cannot be controlled. but in past instead of using int rate control used RRP + direct controls + asset requirements.

3.3.2 Definition of monetary policy

Monetary policy may be defined as the decisions taken, and implemented, by the monetary authorities to assist them in achieving certain broad macroeconomic objectives. These broad macroeconomic objectives normally relate to the maintenance of the general price level, high rates of both employment and economic growth, a stable exchange rate and a satisfactory balance of payments position. These four objectives may be regarded as being "'primary' objectives" (Meijer 1995:343). Alexander *et al* (1995:7) sees an alternate primary objective for monetary policy as being the stabilisation, in the medium term, of the national currency by the central bank.[3] Monetary policy therefore relates to the *deliberate* control of the money supply to try to effect a change to prices, employment and economic growth.

Monetary policy is not the only tool available to achieve the previously stated objectives. The authorities have other policy tools available as well. These are fiscal policy, prices and incomes policy and exchange rate policy. Fiscal policy is where the authorities attempt to use taxation and state spending to achieve the objectives. Prices and income policy attempts to reach these objectives by controlling wages and commodity prices. Exchange rate policies seek to achieve the same ends by regulating the balance of payments and attempting to stimulate local industries, employment and even consumption (Dennis 1981:19). The various policy tools are not used in isolation but may be combined with each other. It will be noted that monetary policy does not relate to "money" specifically but only to the actions of the monetary authorities. The focus of monetary policy is not on money itself but rather on

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[3]The fact that reference is made to "primary" objectives of monetary policy implies that there are "secondary" objectives. These secondary objectives include improving the distribution of income and wealth, the favouring of specific industries or geographic areas for various forms of economic advancement; the amelioration of private consumption and ensuring the security of supply. However, these "secondary" objectives should be seen as "instruments of money and credit", issues which extend far beyond the role of money, rather than objectives of monetary policy (Meijer 1995:351).

"monetary stability" (Meijer 1995:334).

There are a considerable number of factors each of which must have some affect on the ability of the monetary authorities to effectively design, implement and carry out monetary policy. These variables are critical and how each one affects the end result will determine how effective monetary policy will be. Changes in these variables will also change the end result. Because of the many variables involved and also because in the real economy they may be subject to continual change or sudden sharp outside shocks, the efficient implementation of monetary policy may be difficult to achieve. Cause and effect are not always easy to identify.

3.3.3 Policy indicators

Policy indicators refer to a set of variables which include the monetary base, the extent of bank lending and deposits and short term interest rates. These are termed indicators because they "indicate" the strength of monetary policy as a result of their close relationship to the policy instrument itself (Dennis 1981:21). The imposition of credit ceilings will affect the extent of bank lending (an indicator), while open market operations will affect the size of the monetary base (another indicator). Direct instruments tend to have a more specific effect as in the case of interest rate controls. The importance of the indicator lies in the fact that it provides a signal by which the effect of a policy instrument can be monitored.

3.3.4 Targets

In turn the policy indicators affect a further set of variables referred to as targets. Targets are the variables consisting of the various monetary aggregates, long term interest rates and the extent of bank credit. While they may appear to directly mirror the indicators, each of the three targets may be affected by any one of or all three of the indicators in various combinations. It is these targets which the monetary authorities believe have a direct effect on the monetary policy objectives. On their own the target variables are of no particular significance. However if the targets can be achieved they will help, so the monetary authorities believe, in the attainment of their monetary policy objectives. Dennis (1981:27-

30) lists six different targets. These are; the money supply, the monetary base, the extent of bank credit, long run interest rates, the extent of all credit (including that made available by non bank intermediaries) and the equity yield on assets. Only the first four are considered viable targets from a practical point of view. The last two have the drawbacks that they are difficult to measure. Without measurability it becomes impossible to attempt to control.

3.4 DIRECT AND INDIRECT MONETARY POLICY

3.4.1 Evolution from direct to indirect monetary policy

Because of the complex nature of numerous theoretical variables involved monetary policy should not be seen as a precise mechanical process whereby precise objectives can be obtained. It should rather be viewed as a stance taken by the authorities to ensure the long term stability of a country's economy. The development of monetary policy is linked closely to the prevailing economic wisdom. As such, it is a process which links the theoretical to the practical, where economic theory is transformed into a pragmatic application to best serve the interests of the macroeconomy. Theory and practice is not a one way flow because the practice provides feedback to the theory. Practice may confirm the theory, lead to the modification of the theory or its abandonment.

The following brief summary serves as a broad overview of the development of monetary policy. This overview serves as an indication of the type of financial innovations that could be expected during the various stages through which monetary policy evolved. While it reflects the broad worldwide situation, in many specific cases there have been unique circumstances and special arrangements. Where relevant, these are discussed in the section on the experiences of specific countries in chapters four and South Africa in chapter five.

Economic theory has also to be seen within the context of the economic situation prevalent at any given time. Until the onset of the Depression, during the 1930s, Classical theory held sway. Monetary policy was not really considered to be important. In addition the basic

theoretical link from the money supply to prices was recognised and accepted.[4] As the world emerged from the Second World War the Keynesian view, which favoured the use of fiscal policy, was predominant. Great importance was attached to stable and full levels of employment. Inflation was not yet a problem and little importance was attached to the supply of money. Interest rates, which historically were low, were also not considered an important factor.

From the mid 1960s interest rates had began to rise. Despite sustained high levels of employment, inflation became a persistent problem. Direct monetary policy controls continued to be used and extended in many cases as a result of what Meijer (1995:366) refers to "...an enduring Keynesian disbelief in the potency of interest rates in influencing saving and investment decisions..." during this period.

Increasingly during this period the use of direct instruments were proving to be ineffective (see chapters four and five). Effective monetary control and more efficient financial intermediation were seen as being a result of the allocation of financial resources on a market determined basis through indirect instruments (Alexander *et al* 1995:27).

From the end of the 1970s the Monetarists' proposal for the targeting of the money supply began to be implemented in many countries. This was accompanied by a greater use of interest rates as an indirect control method and a discarding of direct controls. This approach was based on the concept that the supply of and the demand for money was a more effective determinant of its price (the interest rate) as opposed to artificially determined components. This period was also one of liberalisation in which deregulation of the financial system began to take hold. During the 1980s however, monetary targeting fell from favour as problems with the definition and the controllability of the money supply emerged. A resurgence to the Keynesian belief found expression in the views of the Post Keynesians.

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[4]This link had already been recognised with the dramatic rise in prices in Spain during the sixteenth century as a result of the flood of precious metals from the newly discovered Americas (Galbraith 1975:21).

3.4.2 Nature of policy instruments

The practical application of monetary policy consists of applying various policy instruments which are aimed ultimately at achieving the monetary policy objectives. The link however, from the policy instrument to the objective is not direct. It travels through two intermediate stages. These are "indicators" and "targets" (Dennis 1981:21). Given the substantial range of policy instruments and the numerous targets and objectives, the route that the application of any specific policy instrument may follow in trying to achieve its objective, may be exceptionally tortuous and complex. A central bank has two options in implementing monetary policy. It may either implement its policy directly through the regulatory powers vested in it or indirectly as an issuer of central bank money, where it seeks to influence money market conditions.[5]

Direct monetary policy instruments are aimed at either setting or limiting prices (in the form of interest rates) or quantities (in the form of credit extension)(Lindgren 1991:308-309). Direct policy instruments involve the monetary authority in "...*telling* the banks, other financial institutions and/or other private decision makers to do or to refrain from doing certain things in their lending, borrowing and financial investment activities,..." (Meijer 1995:352). Such policy instruments are generally advised through official directives. Failure to comply can render the defaulting party liable to some form of sanction.

Indirect monetary policy instruments are those that seek to influence the demand and or/or supply of money and/or credit through liquidity conditions and interest rates (Lindgren 1991:309). These are also referred to as market based instruments. Indirect policy instruments are an attempt to "...*guide*, tempt or coax banks and other private sector decision makers into appropriate lending and borrowing behaviour." (Meijer 1995:352).

Alexander *et al* (1995:3-6) analyze direct and indirect monetary policy instruments. The section that follows is based on their work. This broad categorisation is widely accepted in the literature (see Meijer 1995:375, Dennis 1981:20).

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[5]Central bank money relates to currency (fiat money) in circulation and balances held in the books of the central bank (Alexander *et al* 1995:2).

The most common types of direct instruments are interest rate controls, bank-by-bank lending ceilings and directed central bank lending. In the case of indirect instruments the most common types are open market operations, reserve requirements and central bank lending/discount operations (Alexander *et al* 1995:2). The analysis which follows examines each of these instruments on the basis of its nature and its advantages and disadvantages.

(a) Direct instruments

(i) Interest rate controls

With interest rate controls the interest rate is either fixed, subject to a maximum rate (ceiling) or subject to a set range (floor and ceiling). Different rates may be set for different types of deposits or loans.

One advantage of interest rate controls is that it limits the effects of non-competitive pricing where entry into banking is restricted. Another advantage is that it limits adverse selection problems especially where information on borrowers is scarce or where banking supervision is weak.

The main disadvantages of interest rate controls relates to the fact that the allocation of resources is not based on the price mechanism. Interest rate ceilings are easy to circumvent by moving bank deposits into assets which yield market rates (as in foreign assets) or into goods. This could result in the administrative rationing of credit. Floors or ceilings on the level of interest rates could also result in disintermediation or non-bank intermediation. Ceilings might also create the impression that credit is cheap which encourages the overuse of capital.

(ii) Bank-by-bank credit ceilings

The authorities set specific ceilings and/or quotas for each bank as regards the amount of credit that they may extend to borrowers.

The main advantage of such ceilings is that they can be effective in the control of bank credit. Furthermore they can assist in monetary control where the transmission mechanism is uncertain.

The major disadvantage is that such ceilings lead to a distortion in the allocation of bank resources because they are not market determined. This can lead to disintermediation. Ceilings are also difficult to implement especially if there are many banks.

(iii) Directed central bank lending

The central bank specifies the economic sector and the end use for which credit may be allocated.

The main advantage of directed lending is that it provides direct control over aggregate central bank lending to the banks. Directed central bank lending also provides direct control over aggregate credit extended by the central bank to the banks.

The major disadvantage lies in the fact that credit is allocated in a discretionary manner. This may result in a misallocation of resources. This policy could, as an example, be used to direct credit to public enterprise as a means to reduce direct budgetary impact.

(b) Indirect instruments

(i) Open market operations

Open market operations consist of sales and purchases of domestic financial assets by the central bank. This procedure is aimed at attaining predetermined effects on the banking system's cash or liquidity base, interest rates, the availability of credit and the money supply.

The main advantage of open market operations is that it provides a flexible instrument for short term liquidity management because its use is at the discretion of the central bank.

A major disadvantage, however, is that its use could result in central bank losses if large operations are required to reduce excessive liquidity. Depending on the range of instruments used there may be a need for strong co-ordination between issuing agents.[6] Furthermore the debt management objectives of government agencies in the issuing of paper could be in conflict with monetary policy objectives.

(ii) Reserve requirements

Financial institutions are required to deposit a specified part of their portfolio with the central bank.[7]

There is the advantage that an increase in reserve requirements can be used as a one-off method to reduce excess liquidity or to accommodate structural changes in the demand for reserves.

Reserve requirements, however, impose a form of tax on bank intermediation, which may lead to disintermediation because it could lead to a widening of the spread between deposit and lending rates. The use of reserve requirements is not suitable for short term liquidity management.

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[6]This could arise if central bank bills are used in parallel with other government issued securities such as treasury bills.

[7]Because reserve requirements are specified by regulation they are sometimes regarded as direct instruments (as in Meijer 1995:375). Alexander *et al* (1995: 4 and 6) while acknowledging their direct element classify them as indirect instruments in conformity with current central bank usage. This classification is justified on the basis of reserve requirements being seen in the context of their monetary effect which is realised through their impact on banks' demand for reserve money.

(iii) Central bank lending/discount operations

This comprises short term lending by the central bank. These facilities can take a number of different forms. They could involve the rediscounting of high quality financial assets such as treasury bills, or the granting of an outright loan, either secured or against specified collateral or on an unsecured basis.

Its advantage lies in the fact that the discount rate acts as a transmitter of central bank policy to the market. This has a wider impact than open market operations which are restricted to central bank counterparties who may be limited in number. Its use also creates a demand for re-discountable paper.

A disadvantage is that central bank lending and discount operations may not be suitable for monetary base targeting in some countries because its use may be at the initiative of the banks. On the other hand where this initiative lies in the hands of the central bank this disadvantage falls away.

(c) The use of policy instruments

Policy instruments are not used in isolation but in combinations. A monetary policy strategy, which favours the indirect policy approach may still use direct instruments for specific reasons. It is also necessary to understand the underlying basis for the control. This applies specifically in the case of the direct approach, where the intention may not emanate from the monetary policy need but from another regulatory requirement. Regulatory needs for prudential supervision to protect the financial system or the depositor or both, such as reserve requirements, are an example of this. In this case the instrument fills a dual requirement, that of both regulatory policy and monetary policy.

Policy instruments are chosen by the authorities. The effect and outcome of that choice, whether the instrument is direct or indirect, is not always clear. Irrespective of the type of policy instrument used the outcome need not necessarily be as intended by the monetary authority. Direct policy instruments may well have the effect of forcing banks to take what

may be termed "appropriate circumventive action". This in turn can lead to the development of new policy instruments by the authorities whose purpose is to block the innovatory process.[8] An example of this type of behaviour is when selective credit controls are introduced to supplement controls such as credit ceilings because the latter are not as effective as originally intended. Indirect policy instruments on the other hand may not prove to be effective because of exogenous circumstances. An example would be where the banks held excess reserves and the authorities used open market operations to reduce what they perceived as being excess liquidity, not realising that the reserves were in fact excess of the legal requirements.

3.4.3 Monetary policy in practice

For monetary policy to be implemented effectively it is not simply a matter of choosing the correct mix of policy instruments. There are an number of operational linkages and parallel developments that may effect both the transmission and the impact of central bank policies. These issues relate directly to the ancillary role of central banks, such as the development of the money market, the stability of the payment and clearing system and bank supervision and regulation. In a general sense, the more efficient the financial sector is the more effective indirect policy instruments become (Alexander *et al* 1995:7).

Whatever the policy measures chosen some caveats are in order. Firstly, one must consider the implications of the various variables involved. Secondly, it must be remembered that irrespective of the policy route chosen, the goal is not achieved instantaneously. There are a series of lags between implementation and ultimate effect. There is the inside lag, which is the delay from when the need for the policy change is recognised until it is made. The outside lag relates to the delay from when the policy change is made until its effect works through to the ultimate goal. Such lags may take a long period to work themselves through and Friedman (in Dennis 1981:24) has suggested a period of up to two years. Thirdly, as there is no direct link from the policy instrument to the objective, the actual effect of any particular policy may not work through as intended because of extraneous factors which are

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[8]As in Kane's (1981:335) view of the regulatory dialectic (see chapter two).

present in the economy. Other changes of a political or social nature, which occur during the lag period, could well effect the end result and must therefore also be taken into account.

The effectiveness of monetary policy is based on the ability of the monetary authority to influence the policy targets. The extent to which this is believed to be achievable is in turn dependent on either the theoretical base or the applicable transmission channel through which the monetary policy approach is made. If changes to the money supply are directly controllable, there would be a strong argument for achieving the monetary policy objectives by controlling the supply of money. If, on the other hand, the money supply is not directly controllable the ability of the authorities to achieve the monetary policy objectives by direct means becomes questionable. The same would apply to other monetary policy targets such as the monetary base, bank credit and long run interest rates. Irrespective of which target is used, they all relate to either the stock of money or the price of money in the financial system.

Keyn. Theory predominated
Then why set direct controls → Polic
Monetary policy is aimed at controlling or influencing both the supply and the demand for money. Direct monetary policy is focused at control; indirect monetary policy at influence. If either, or both the supply of and the demand for money is distorted in any way the effectiveness of monetary policy is affected.

The demand for money arises out of its attributes as a medium of exchange and a store of value. Keynes expanded this demand for money into his three "motives" for holding it; for transactions purposes, as a precautionary measure and for speculative purposes. A factor which affects the demand for money is its price or the interest rate. As fiat money earns no interest, the more of it held the greater the opportunity cost. The demand curve for money is therefore inversely related to the interest rate; the higher the interest rate the less will be the demand for passive money balances.

While the concept of the rate of interest is taken to mean the price of money, it must be remembered that there is no single interest rate. In reality there are many different interest rates. These all vary and are dependent upon factors such as the period of investment, the creditworthiness of the borrower and the tax implications of the investment, among other

issues (Luckett 1980:393). The Keynesian model simplifies this rather complex situation, and assumes that there are only two kinds of financial assets; money and bonds, which are substitutes for each other. Money is an asset which is perfectly liquid and bears no interest. A bond is illiquid in the sense that it is a long term debt. It does however bear an interest rate. Investors are assumed to choose between the use that they obtain from the liquidity and the utility of the yield on the bond.[9] Because of the inverse relationship of bond prices to the interest rate it may be expected that when bond prices are low the demand for money will be high.[10]

3.5 THE EFFECTS OF FINANCIAL INNOVATION

presumably New Keynesian innovation does effect But Monetarist say no effect NB

3.5.1 Early attempts to model the effects of financial innovation

To illustrate the effects of financial innovation is not a simple task. A number of writers have either attempted this directly or, because their work relates to money substitutes, have alluded to financial innovation. At issue is whether financial innovation has a direct effect on the supply of and the demand for money; the creation and use of money substitutes; the level of interest rates and the controllability of any of the monetary variables. If the answer to any of these questions is positive then the successful application of monetary policy may well be hampered. This question is examined in relation to specific country experiences in chapters four and five.

In examining the demand for money Gurley and Shaw (1955:528-529) use a model which reflected the combined demand for money and non-monetary financial assets that were close substitutes for both money and bonds. They maintain that if non-monetary financial assets are substitutes for both money and bonds then the effect of such a substitution will be to shift the demand curve for money as well as decrease the interest rate. While their model does

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[9]The yield is made up of the interest rate that is paid on the capital amount of the bond and the price change of the bond between when it is bought and when it is sold.

[10]If the interest rate is expected to rise, then the price of bonds is expected to fall. A person holding a bond can expect his income to fall. Given these circumstances the investor will prefer to hold money, where the return is zero, in preference to holding a bond, where the return may well be negative as a result of the fall in price.

reflect the effect of such substitution on the demand for money and on the interest rate, it is too general to serve as a basis with which to show the effects of financial innovation.

Many writers have suggested the use the IS-LM model to illustrate financial innovation (Podolski 1986:163-165, Pawley 1993:137-138, Moses 1983:5-10). The IS-LM model itself has been criticised in that it only relates to a single rate of interest; that it leaves the question of whether it represents the short or long term interest rate unanswered; that it neglects the accumulation of capital and the effect of this on the stock of assets; that it allows no role for financial intermediaries and that it sees bonds as the only substitute for money (Meltzer 1995:52). In addition it is a comparative static model and the dynamics associated with financial innovation cannot be captured.

Liebermann (in Arrau *et al* 1995:324) maintains that the transactions demand for money will tend to decrease as a result of the increasing use of credit, the switching to money substitutes and the use of more efficient payment mechanisms. The measure of this change will be an "elusive goal" because of the nature of financial innovation and its unpredictability (Arrau *et al* 1995:337).

Dennis (1981:206-208) has examined both the demand for and the supply of money simultaneously in both the formal financial market and the "near-money" market. He defines "near-money" as those deposits and assets which are held by non-bank financial intermediaries. He examines the interaction between the two markets arising from the imposition of a ceiling on lending. This ceiling represents the use of direct monetary policy. This ceiling may be equated with a reduction in the money supply.[11] Near-money can therefore serve as a proxy for circumventive financial innovation.

Because the Keynesians regard money and near-money as close substitutes, the demand curve for both money and near money are fairly elastic. A lending ceiling imposed by the monetary authorities will lead to a decrease in the amount of money demanded. This reduction in demand will however simply be switched to the market for near-money. The

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[11]Graphically this may be shown by a movement to the left of the vertical money supply line.

monetary authorities objective of restricting the money supply will be offset by the increases in the quantity of near-money. This substitution represents circumventive financial innovation.

The Monetarists however, state that money and near-money are not good substitutes for one another, but rather complementary because the demand curves for both money and near money are much less elastic than the Keynesian view. If the monetary authorities impose a ceiling on the extension of credit, which results in a reduction of the supply of money and a corresponding rise in the interest rate the shortage in the supply of money will result in potential borrowers withdrawing near-money deposits (or liquidating other near-money assets) from the non-bank financial intermediaries and converting them back into money. The demand for near-money will fall, with a corresponding fall in the near-money interest rate. The money realised from the reduction in near-money holdings is then used to bolster the money supply shortfall, returning the stock of money to the same level that is was at before the ceiling was imposed. In the Monetarist view non-bank financial intermediaries do not reduce the effectiveness of monetary policy (Dennis 1981:208). The credit ceiling causes an inflow or return of funds from the near-money market to the money market.

3.5.2 The channel approach

In section 3.2.2 two basic "channel" approaches to the transmission mechanism were outlined. In the first approach, the money view, focused on the effect that a change in the monetary base would have on interest rates. The money view is not really appropriate in the illustration of financial innovation. The second approach was the credit or lending view, with its two components; the credit (or bank lending) channel and the balance sheet channel.

Recent work on the credit transmission channel may be used as a possible means of illustrating the effect of financial innovation. The money transmission mechanism, irrespective of the particular channel, operates through prices (either the interest rate, the exchange rate or the price of shares) or quantities (in the form of bank deposits, bank loans or other financial assets). The credit transmission channel reflect how monetary policy actions by the central bank are transmitted to the economy through bank deposits, bank loans,

aggregate investment through to overall output.

There is no consensus that any particular transmission mechanism is the correct one. Inconsistencies in the response of economic aggregates such as investment or consumption or changes in variables such as the interest rate or the exchange rate or the properties of such variables such as their elasticities often leads to "questions about whether the monetary transmission mechanism has changed" (Taylor 1995:20). In many cases the reason for the variations can be identified and explained. Taylor (1995:24) refers to a number of reasons such as the internationalisation of the transmission framework, the fact that exchange rates have become a key part of the transmission mechanism; the distinction between real and market interest rates and the increasing levels of capital mobility around the world.

The credit channel, which is subdivided into a "bank lending channel" and a "balance sheet channel" takes into account the changing role of financial intermediaries (Taylor 1995:24). The credit channel is based on the supposition that central bank actions affects bank lending and that banks play a special and significant role as financial intermediary.

Central banks need to have a direct effect on the supply of bank loans created by the banks. The central bank achieves this by imposing the requirement for reserves to be held with it to cover a proportion of bank deposits. Central bank reserve requirements are used to adjust bank deposits, which in turn affects the degree to which banks may make loans. Any central bank action which increases the quantity of reserves will affect the banks' ability to lend. Banks also need to play the major (perhaps the only) role in the lending or credit market (Thornton 1994:32). This implies that potential borrowers find it either too costly or impossible to obtain loans from other sources.

Although both direct and indirect monetary policy instruments may be used to control the extent of bank lending, where these are indirect their purpose is to absorb excessive market liquidity, through the market mechanism, into the central bank. Consequently the banks' ability to lend is reduced. Interest rates rise in respect of both deposits and loans. While deposits increase, the demand for credit tends to fall off or even decline (Lindgren 1991:312).

If, however, borrowers are not dependant on banks, but can obtain loans in the open (non-bank) market, the banks' position, as lenders, is not unique. Under such circumstances it follows that there would be no separate credit channel for monetary policy. However if the ability of borrowers to secure loans in the open market is limited, or non-existent, there would be a specific credit channel for monetary policy. The central bank could then have a strong influence on the extent the banks' lending (Thornton 1994:33).

Consider the situation where borrowers can obtain credit in the open market. In this case lenders are indifferent as to whom they provide credit to. Any fall in the supply of bank credit will simply cause borrowers to seek credit elsewhere. Bank credit and other credit are, in this situation, perfect substitutes for each other. Under these circumstances there would be no monetary credit channel.

This situation is illustrated in figure 3.1. Figure 3.1(a) represents the demand for and the supply of bank credit. Figure 3.1(b) reflects the supply of and the demand for other (non-bank) credit. Figure 3.1(c) summarises the cumulative bank and non-bank credit positions. The banks' credit supply curve is assumed to be vertical, at S in figure 3.1(a), because bank credit is determined by the deposits held by the banks. These deposits are in turn determined by the quantity of reserves supplied by the central bank.

Any open market operation by the central bank will reduce the supply of both bank credit and total credit. This is reflected by a shift from S to S_1 in both figures 3.1(a) and 3.1(c). Initially the drop in the banks' supply of credit will cause the banks' lending rate to rise relative to other credit, from ib to ib_1. Some borrowers will look to the market for other credit and the demand for credit in this market will increase from D to D_1 (in figure 3.1.(b)). There will also be a simultaneous drop in the demand for bank credit. This is illustrated by a leftward shift of the demand curve from D to D_1 in figure 3.1(a). Interest rate will drop from ib_1 to ib_2 in the market for bank credit, and will rise from io to io_1 in the market for other credit, until there is equilibrium in both markets.

The alternative situation exists when bank borrowers do not have access to other forms of credit. In a situation like this, where borrowers are in effect "locked in" to banks to satisfy

Figure 3.1 (a)

Bank Credit

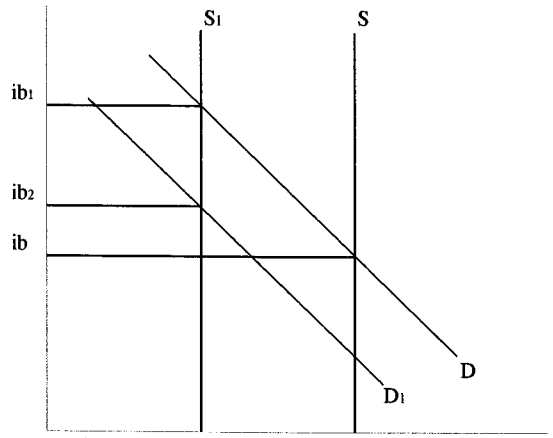


Figure 3.1 (b)

Other Credit

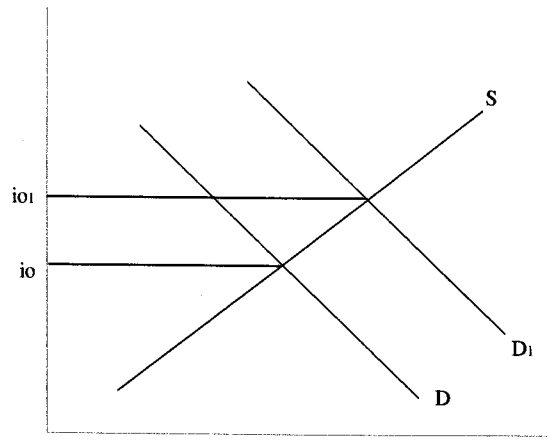
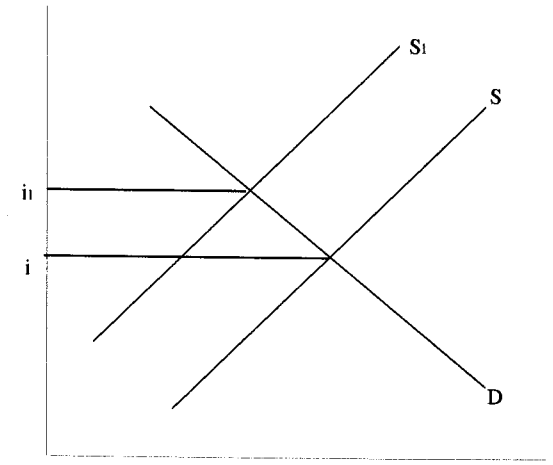


Figure 3.1 (c)

Total Credit



(Source: Thornton 1994:34)

their borrowing requirements, the monetary credit channel is said to be strong. Under these circumstances bank credit and other credit are not perfect substitutes for one another. Any decline in the quantity of bank credit available, induced by a policy action of the central bank, such as open market operations, will result in a *smaller* increase in the demand for other credit. In other words the increase in demand in the market for other credit will be smaller than that illustrated in figure 3.1(b). The equilibrium interest rate in respect of bank credit will have risen relative to the interest rate for other credit (Thornton 1994:35).

Given these circumstances two possible effects on monetary policy may be identified. In the first instance a restrictive policy will cause the bank interest rate to rise relative to the interest rate for other credit and may result in a greater spread of interest rates.[12] In the second instance the reduction in total credit is larger than in the case where bank and other credit is easily substitutable. In this scenario credit is simply switched from bank credit to other credit. In this situation the drop in bank credit cannot be replaced fully by other credit. The smaller the proportion of bank borrowers who have access to alternative credit sources the stronger will be the effect of monetary policy actions on total credit.

The extent to which bank lending is subject to central bank reserve requirements is a key issue as to the limitation that the banks face in making loans. The greater access banks have to funds that are not subject to central bank monetary policy actions, such as reserve requirements, the weaker will the effect of monetary policy actions be.

Thornton (1994:39) states that, "The credit view of monetary policy is weakened by financial innovation and deregulation that have significantly increased banks' access to financial markets and reduced their dependence on sources of funds that are subject to reserve requirements by the Federal Reserve." Because a substantial portion of bank deposits may come from sources that are not affected by central bank monetary policy actions, as a result of financial innovations, the credit channel of monetary policy may not be relevant. This

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[12]Thornton (1994:34-35) however points out that because banks are only financial intermediaries, who acquire funds from depositors and make loans to borrowers, in order to maximise their profits, any rate differential between bank rates and other rates will result in the banks arbitraging this differential until both are in equilibrium. It follows then that this rate spread may not be significant.

brings into question the extent and effect that monetary policy actions have on the economy.

There is today a growing body of literature which questions the effectiveness of the credit channel. In other words, if a large quantum of financial intermediation no longer operates through the banks, any measures taken by the monetary authority, to influence economic activity, through the credit channel would be weakened. Monetary policy will become less effective because financial intermediation is not fully subject to the various instruments of monetary policy.

Financial innovations which bypass the control measures of the central bank may render monetary policy actions ineffective. This is the issue that has been illustrated in the discussion on both the use of, and the debate on the existence of the credit channel of monetary policy. If the credit channel does operate effectively then financial innovations cannot affect monetary policy. If the credit channel does not exist, or if it is weak, it implies that financial innovation has successfully bypassed central bank monetary policy actions that are aimed at the control of the extent of bank credit.

If loans are made outside of the banks these activities are able to bypass central bank activities aimed at containing such loans. A shift from bank credit to disintermediated credit would have taken place which bypasses the central bank's reserve requirements. The action of bypassing bank intermediation is in effect circumventive financial innovation.

Similarly, if banks have access to sources of finance that are not subject to reserve requirements, and if they regard such funds as perfect substitutes for deposits, the link between open market operations and credit, made available to bank dependant depositors, is broken (Hubbard 1995:66). If the link is broken it implies that the basic precondition for monetary policy (see section 3.3.1) does not exist. Under these circumstances central bank monetary policy actions would be ineffective. If financial innovation does create money substitutes it raises questions as to the effectiveness of monetary policy.

3.6 DIRECT POLICY MEASURES AND FINANCIAL INNOVATION

3.6.1 Financial innovation arising from the direct approach

The use of direct instruments has certain advantages. Direct instruments are considered a powerful effective monetary policy tool, which is easy to implement, easy to use and easy to explain to politicians and to the public alike (Lindgren 1991:323). Alexander *et al* (1995:9) has expanded on these basic advantages. They list a number of additional advantages which include:

(a) the perception that direct instruments are reliable in controlling total credit, its allocation and its cost

(b) the relatively low level of fiscal costs associated with direct instruments

(c) direct instruments are appealing when the government wants to channel credit for a specific purpose

(e) where financial markets are rudimentary or lack any depth the direct approach is the only feasible alternative available to the monetary authorities.

Direct instruments have an number of disadvantages however, which result in distortions, inefficiencies and a misallocation of resources which results in "...evasion and inequity" (Alexander *et al* 1995:9).

As regards both credit ceilings and interest rate controls Lindgren (1991:323) maintains that the use of direct instruments results in;

(a) disintermediation from "organised" financial markets to either the "unofficial" domestic market or to foreign markets

(b) a discouraging of savings, with a concomitant effect on credit availability

(c) a restricting of competition between banks because prices, in the form of interest rates, are administered

(d) the hindering of both price competition and the development of a money market.

Generally there is a tendency for direct controls to increase as the authorities try to halt attempts at circumvention. There are also attempts by the central bank to "micromanage" monetary conditions by the establishment of complex interest rate structures and credit ceilings. Where direct controls lead to disintermediation, the proportion of financial assets over which the authorities can exercise control falls. Savings are shifted into unregulated or informal financial markets (Alexander *et al* 1995:9).

In summary, the use of direct instruments leads to a switch from controlled to uncontrolled financial markets. These changes represent circumventory financial innovation, and often includes new financial products and/or procedures.

3.6.2 Implications of circumventive innovation on the effectiveness of monetary policy

The direct approach to monetary policy, which is based upon specific quantitative measures aimed at controlling the monetary policy targets, appears to act as the trigger for circumventive innovations. Direct monetary policy controls can be circumvented through financial innovation, specifically the use of other forms of money or money substitutes and/or a switch to other markets, either "unofficial" or foreign.

Direct monetary policy appears to result in circumventive financial innovation where money, which is subject to various forms of control, is replaced by money substitutes which often fall beyond the scope of these controls. In due course these substitutes will be monetised. They will be accepted as money in the same manner as today's fiat money, in the form of currency (banknotes and coins), has been accepted as a substitute for the original commodity money. The money supply, which started of as exogenously determined has become

endogenous. The evolution of money follows this pattern, where the stock of commodity money could not meet the public's demand for it, it was supplemented by other forms of money, such as tokens or banknotes or cheque, the extent of which is not always fully controllable. In time these substitutes were monetised, so transforming what had started as a more directly controllable (exogenous) money supply into a less controllable (endogenous) one. This is evidenced by the gradually expanding range of monetary aggregates which seeks to cover the expanding range of money substitutes.

3.7 INDIRECT POLICY MEASURES AND FINANCIAL INNOVATION

3.7.1 Financial innovations arising from the indirect approach

Indirect policy measures are aimed at influencing the economy through a series of measures centred around the price of money or the interest rate. By indicating an interest rate at which it will accommodate the banking industry the central bank provides a point of reference around which bank lending and investment rates can be structured. However the bank rate should not be seen as an indication rate alone because it is the rate at which the central bank will lend to the banks to accommodate their day to day shortfalls. Central banks engage in the practice of open market operations, where they attempt to control the money supply, either on the basis of the "classical cash reserve" system, which is aimed at the cost of cash reserves, or through the "American cash reserve system" which is aimed at the amount of the banks' total cash reserves or their non-borrowed reserves.

Because indirect instruments operate through the market, using the price mechanism in the form of the interest rate, rather than around the market as is the case with direct instruments, indirect instruments are more efficient and suffer from fewer distortions than direct instruments. The use of the price mechanism, as the incentive, eliminates the need for circumventive actions.

Lindgren (1991:324-325) lists eight advantages which the monetary authorities enjoy as a result of market determined interest rates; three of which may be considered paramount. These three main advantages are;

(a) market determined rates ensure that changes in these rates are automatic and immediate in relation to prevailing market conditions

(b) these interest rates provide an immediate, unambiguous message to all sectors of the economy

(c) both money and credit is allocated efficiently on the basis of price.

The other advantages relate to ensuring consistency between monetary, fiscal and exchange rate policy; the easy identification of money market pressure points; assisting in exchange rate management; the depolitisation of interest rate changes and permitting the central bank to retain control of the market, albeit at a distance.

Monetary control, using indirect instruments, is more effective because, unlike with the use of direct instruments, they do not encourage disintermediation, which often is accompanied by the growth of an informal financial sector which falls outside of the scope of the monetary authority (Alexander *et al* 1995:14). Financial innovations, where indirect instruments are in use cannot be circumventory. These innovations must be as a result of competitive forces and are therefore referred to as competitive financial innovations.[13]

3.7.2 Implications of competitive innovation on the effectiveness of monetary policy

Where there is no inhibitory factor which restricts normal business activities, such as in the

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[13]In using the term "competitive" it must be remembered that "competitive" financial innovations do exist in a market which in itself is not truly competitive. Cognisance must be taken of the situation where the financial industry is far from competitive, in the sense of perfect competition, but rather exists in the from of either a monopoly or an oligopoly in its various guises. In many countries the financial system has tended to take on the guise of a collusive oligopoly or a cartel. Competitive financial innovation relates to a situation where market participants are free from direct restriction imposed on them by the monetary authority rather than being fully competitive in the normally accepted economic sense. However, even in a fully competitive financial market, banks and other financial intermediaries are still constrained by the central bank's monetary policy requirements. As an example "moral suasion" which is a direct policy instrument is still used in an indirect monetary policy regime.

case of the indirect approach to monetary policy, financial institutions are free to innovate in a manner which supports their competitive urges in the quest for profit maximisation. Innovative forces are therefore not dissipated in attempts to circumvent direct controls imposed by the monetary authorities. Although funds may move from bank to non-bank intermediaries this move is initiated by the price of money (the interest rate) on the one hand and normal competitive activities on the other.

Indirect monetary policy imposes no barriers on competitive forces. Indirect monetary policy measures support competitive financial innovation. In a situation free from any form of direct control, either over the interest rate or over the stock of money or the availability of credit, all three are free to fluctuate in response to market forces. Indirect monetary policy will seek to influence the financial market to move in the direction that the monetary authorities believe it should. As an example, central bank discount policy will use the interest rate, at which it is prepared to accommodate the banking sector. By increasing the discount rate, demand for accommodation and subsequently through the banks' own increase in their lending rates, the private sector's demand for loans, should both fall. Similarly open market operations, aimed either at mopping up or creating liquidity within the banking system will use the interest rate as the determining factor. In this manner the monetary authorities attempt to counter, or offset the normal fluctuations of supply and demand.

Only recently has any form of empirical evidence emerged to support this contention. In their survey of the transition from direct to indirect instruments of monetary policy Alexander *et al* (1995:27) maintain that the switch to a market based approach has resulted in six areas of improvement in the stability of policy indicators. These are;

(a) the volatility of key monetary aggregates declines, which assists in future predictability

(b) interest rates tend to become positive in real terms

(c) interest rates become more sensitive to prevailing market conditions and to central bank actions

(d) the efficiency of financial sector intermediation improves

(e) interest rate spreads, such as between borrowers and lenders, narrows

(f) there is an increase in re-intermediation through the banking system.

These indications of stability bode well for the effectiveness of monetary policy under a market based approach.

3.8 SUMMARY

In implementing monetary policy the monetary authorities may use either direct measures based on specific rules and regulations directed at financial institutions or indirect measures where the focus is on achieving the desired outcome through influence. The aims of monetary policy may be frustrated by the process of financial innovation because it enables the creation of alternative "forms" of money. The process of financial innovation leads to the development of money substitutes. Indirect monetary policy allows this process to proceed unhindered in the form of competitive financial innovations. Direct monetary policy creates barriers, to the financial firm's goal of profit maximisation, which financial institutions bypass through circumventive financial innovations. These circumventive financial innovations reduce the effectiveness of any direct monetary policy. It follows that the type of monetary policy approach that may be the most effective is the indirect variety which seeks to influence the price of money rather than dictate either the price and/or the quantity, as is the aim of the direct approach.

There appears to be a line of causation running from the type of monetary policy used to the type of financial innovations which occur. This causation is also dependent on the perceived controllability of the money supply. An exogenous money supply is by definition more controllable while an endogenous one is less controllable. In a financial system with little or no outside regulatory interference one may expect to find little or no circumventive innovation. Where the financial system is highly regulated financial innovations of both the circumventive and the competitive types will exist side by side. A shift in monetary policy over time from the direct method to the indirect method, should evidence more competitive and less circumventive innovations.

Because direct monetary policy appears to result in circumventive financial innovations, the

effectiveness of monetary policy may be reduced. In time this may lead to a transition to indirect monetary policy. Because indirect monetary policy is market based, the need for circumventive financial innovation falls away, resulting in a stabilisation of monetary policy indicators and the establishment of a more effective monetary policy base.

CHAPTER FOUR
INTERNATIONAL EXPERIENCE

4.1 OVERVIEW

In chapter three the conclusion was reached that the monetary policy approach used by the monetary authorities has some influence on the financial innovations that take place. Direct monetary policy instruments appear to lead to circumventive financial innovations, while an indirect monetary policy approach appears to result in competitive financial innovations.

In examining the financial systems of various countries the focus has always been on the banking sector because of banks' unique ability to expand deposits by way of bank lending and investment through the credit multiplier. The banking sector's money creation abilities is part of the rationale for monetary policy. However with deregulation and the blurring of the distinction between banks and other financial institutions, whose activities may fall within the ambit of money creation, the effects of these activities on monetary policy have not always been taken into account.

Deregulation (or regulatory reform) often comes about as a means of validating prohibited activities (i.e circumventive financial innovation) which the regulator has given up trying to control (Davis & Lewis 1992:130). Often this response is forced upon regulators because of the strong growth of the new financial innovation and the market that it creates in relation to the performance of the traditional market. The creation of the highly international non-regulated Euromarket (Eurocurrency, Euroequities, Eurobonds) provided the incentive to deregulate, especially after the failed attempt, in 1979, by the United States Federal Reserve Bank and the German Bundesbank to gain central bank co-operation in applying reserve requirements to Eurocurrency deposits (Davis & Lewis 1992:141-142).

Since the 1970s there has been a tendency in most financial systems for the monetary authorities to switch from the direct to the indirect approach in the implementation of monetary policy. Given that the monetary policy approach has shifted, so too should the type of financial innovation have changed from circumventive to the more competitive

approach. To establish whether this supposition is valid it is necessary to examine monetary policy changes in relation to the types of financial innovations which have occurred.

Financial innovation is a worldwide phenomenon. It occurs in all countries' with a reasonably developed financial system. Variations in financial innovations abound to fit local circumstances. These depend not only on internal conditions, regulations and banking practice but also on current government policies as well as on those conditions applicable to a country's major trading partners (Forsyth 1987:141-142). Financial innovations also need to be examined on the basis of whether they are private or public. Public financial innovations may create an element of distortion to monetary policy. This could represent a deliberate attempt by the authorities to create the "right" impression, such as when a specific financial innovation is encouraged because it changes a monetary aggregate in a manner which appears beneficial. De Boissieu (1987:217-219) maintains that private financial innovations tend to predominate in the "Anglo-Saxon" countries. He cites France and the former West Germany as two countries in which public financial innovation predominates.

Both the United States and the United Kingdom have been home to major financial innovations. The innovatory process is easily transportable and adaptable across international boundaries and differing banking and monetary regimes. There are no patents or copyrights on financial innovation. Financial innovations will often be copied or adapted for use in other countries despite fundamental differences in their countries' financial systems. A circumventory financial innovation in one country may well be adopted in another country, not because of regulatory problems but because of the competitive advantage that it provides. This is illustrated by comparing the heavily regulated unit banking system of the United States to that of the United Kingdom's more self-regulated branch banking system. Financial innovations are examined in both the United States and the United Kingdom in relation to monetary policy; changes in the monetary policy approaches as well as the different money control mechanisms in use in both countries.

That the primary focus is on financial innovations in the United States and the United Kingdom is because of the occurrence in these countries of private financial innovation as opposed to public financial innovations, which are or may be directed and controlled by the

authorities themselves. There are also three other reasons for restricting the analysis to these countries. These are:

(a) Financial innovations occur in all financial systems and it would be impractical to examine all such financial systems. Financial systems in other countries have to a large degree been subject to similar financial innovations in much the same time spans (1970s and 1980s).

(b) The banking, regulatory and monetary control structures of the two countries are different. These differences have evolved through specific underlying circumstances. In the United States regulation is written into law; in the United Kingdom it is exercised under the authority of the Bank of England (de Cecco 1987:7). The nature of the financial system and the extent of its regulation forms the basis for the path of subsequent financial innovations.

(c) South Africa has tended to follow the financial system and banking practice of the United Kingdom because of the historical connections between the two countries.

Both the Radcliffe Report in the United Kingdom (1959) and the work of Gurley and Shaw in the United States (1955 and 1960), drew attention to non-bank financial intermediaries who, they both claimed, could frustrate monetary policy, which at that stage was largely concerned with controlling the deposits held with the commercial (or the cheque issuing or clearing) banks. They claimed that any restrictions on the expansion of bank credit would simply drive borrowers to seek accommodation from non-bank intermediaries. The non-bank intermediaries, to be able to meet the demands of borrowers, would in turn seek to attract deposits through offering attractive interest rates.

The Radcliffe Committee contended that the supply of money could therefore not be used as a measure of the effectiveness of monetary policy. Both the Radcliffe Committee and Gurley and Shaw recognised that non-bank intermediaries had the opportunity to offer both lenders and borrowers more attractive facilities (Podolski 1986:191-192). Because such intermediaries were not a part of the banking system their activities were largely unrecorded.

For completeness and to illustrate public financial innovations a brief look will be taken of developments in both France and Germany.

4.2 THE UNITED STATES OF AMERICA

4.2.1 The financial system

The United States, during the past half century, has proved to be a particularly interesting source of financial innovation. To understand the causes and the nature of financial innovations in that country it is first necessary to understand the historical development both of their financial system and their monetary control system. Its financial system, and here reference is made to the banking sector, has gone through three phases of development. Prior to the *"Great Depression"* in the 1930s, the government's approach to banking was one of open competition. Outside regulation by government through the Federal Reserve (which was only established in 1913) sought to ensure that banks maintained suitable reserves as well as the provision of a uniform currency and a national cheque clearing facility. The objective in forming the Federal Reserve system was the desire to create a sound and efficient banking system. The use of monetary policy to influence the economy was not considered to be a function of the central bank (Cargill & Garcia 1985:34). The evolution of and the role of monetary policy is dealt with in section 4.2.2 below. Following the collapse of the stock market in 1929 and its huge impact on the United States' economy, faith in the operation of the free market was shattered. The official response was to change the way in which the financial system operated through a whole series of legislative enactments. These imposed restrictions on banks and the way that they operated. The overall result was that a series of direct controls were imposed over a period of years on the banks as the need arose.[1] These direct controls included:

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[1]This included amendments to existing banking legislation and the Banking Acts of 1933 and 1935, the Securities Act of 1933 and the Securities and Exchange Act of 1934. Further restrictions were placed on the banking industry in 1956 when curbs were imposed on bank holding companies and again in 1970 when a loophole in the 1956 legislation was closed. The final major imposition of direct controls was the extension of interest rate control under the Interest Rate Control Act of 1966 to include other intermediary institutions such as Savings and Loans and Mutual Savings Banks.

- Interest rate ceilings

  The payment of interest on demand deposits was prohibited. Specific ceilings were placed on the rate of interest that could be paid on savings and term deposits.

- Portfolio constraints

  The uses that bank funds could be put to were circumscribed. Banks were prohibited from speculative investments in their lending activities and were restricted in their ability to purchase corporate debt. In addition they could not invest in stock for their own portfolios.

- Limitation on entry

  Banks wishing to establish themselves were now subject to specific criteria aimed at ensuring the continuing viability of both the new entrant and the existing participants.

- Deposit Insurance

  Deposit insurance was instituted, aimed at restoring the confidence of the public in the banks and in deposits as a medium of exchange. By underwriting deposits up to a certain amount it was hoped to eliminate future runs on banks so improving the stability of the financial system.

These changes resulted in a complete turn around from a free and competitive financial system to one subject to outside constraints (Cargill and Garcia 1985:43).

The period from the Depression through the Second World War and up to the 1970s was one of relative stability in terms of low interest rates and minimal inflation. The direct control measures that had been imposed, specifically interest rate ceilings, did not create any major restrictive barriers for the banks, because these ceilings could accommodate the low interest levels that were in evidence.

Events in the late 1970s, such as the rapid rise of short term interest rates, as well as high levels of inflation, were seen as the result of too much government intervention in the functioning of the economy. So began a shift away from direct intervention in the financial system towards a more free market based approach. "Deregulation" became the key word. Deregulation often is the means of legalising regulated activities which the regulator has given up trying to control. Davis and Lewis (1992:130 and 141) maintain that this response is often forced upon regulators because of the strong growth of the new circumventive financial innovation.

4.2.2 Monetary Policy

Prior to 1930 central bank involvement in the financial system was concerned in the main with the regulation of the system. Reserve requirements and the provision of a uniform currency and a national cheque clearing system were the main concerns of the Federal Reserve Bank. After the Depression the approach of the central bank had been to create an environment which restricted risk taking by the banks and was aimed at protecting the public. These various regulatory controls had important implications for the application of monetary policy. Up till that time the conduct of monetary policy was not a central bank concern. The regulation of financial firms had its rationale in the protection of both the financial system and the public. The changes brought about to the financial system in the 1930s were important because for the first time the central bank was given the explicit role in the formulation and the carrying out of monetary policy. A common view at the time was that the Federal Reserve's lack of a monetary policy role, among other things, was responsible for its inability to either prevent or shorten the Depression itself (Cargill & Garcia 1985:43). It must also be remembered that after the Depression monetary policy was not regarded as a major component of economic policy but rather as filling a subsidiary role. Monetary policy was regarded with suspicion, a feeling that continued throughout the 1940s and the 1950s. Economic policy was effected through fiscal policy. Cargill and Garcia (1985:100) state that monetary policy only began to obtain recognition as a major policy instrument in the early 1960s as a result of the early monetarists.

Central Bank not MP role.

The changes that came about after 1930 were aimed at restricting the previous competitive

situation as a result of the perceived failure of the free market system. Firstly, the formulation and execution of monetary policy was centralised under a Board of Governors. Secondly, existing instruments of monetary policy such as open market operations and discount policy were revised. Finally, a series of new direct monetary policy instruments such as the ability to change reserve requirements; the right to determine margin requirements on loans used to purchase stock and the control of interest rates was established.

From a theoretical perspective the Keynesian view of demand management replaced the Classical quantity theory approach. Keynes had argued that the economic conditions prevailing at the time were a result of insufficient aggregate demand (Dillard 1948:32). The remedy lay in increasing demand through fiscal measures such as increased government spending either on its own or coupled with a reduction in taxation on the one hand or through indirectly influencing the cost of credit as reflected in the interest rate on the other.

During the 1970s the United States experienced excessive monetary growth and a series of escalating cycles of inflation and recession with its concomitant unemployment and increases in interest rates. Fiscal policy was deemed to be inadequate to effectively combat these problems (Cargill & Garcia 1985:100-101). The Federal Reserve was blamed because of its apparent "...willingness to achieve interest rate targets at the expense of monetary aggregate targets" (Cargill & Garcia 1985:51). Increased interest rates resulted in the banks running up against the legislative barriers of interest rate controls. Disintermediation and other financial innovations led to the interest rate ceilings being breached. These financial innovations were circumventory.

In 1975 the Federal Reserve switched to monetary targeting as a result of a directive from Congress (Cargill & Garcia 1985:54). The Federal Reserve was required to announce targets for the growth of the narrow M1 monetary aggregate on a year-on-year basis. Additionally they were required to explain the reasons for any deviation from targets. The overall effect was to shift the focus, which up till that time had been on the control of interest rates, to the

money supply.[2] The period from October 1979 until August 1982 has been referred to by some as the "monetarist experiment". Much argument has followed as to whether this had been an effective monetarist experiment in monetary targeting or not. During this period interest rate controls were relaxed. The focus of monetary policy shifted to controlling M1 growth through managing of "non-borrowed" reserves (reserves of the banks less borrowings from the Federal Reserve).

Legislation enacted in 1980 provided for the phase-out of interest rate controls and permitted non-bank depository institutions to attract funds subject to the same constraints imposed on banks.[3] In addition, reserve requirements were extended to all deposit taking institutions. The concept of demand deposits at banks was extended, under the name of transaction deposits, to other deposit taking organisations. At the same time the definition of the M1 money aggregate was changed to compliment the legislative changes. In addition to notes, coin and demand deposits, the definition of M1 was now extended to include balances in other accounts which offered transactional facilities.[4]

Because financial innovations continued to by-pass the M1 aggregate the Federal Reserve amended its intermediary target in 1982 to give greater emphasis to M2 and M3 (Cargill & Garcia 1985:123). As the Federal Reserve had no control over non-bank depository institutions they had limited influence over the close money substitutes that were available. The effectiveness of monetary control was therefore limited.

The Federal Reserve had attempted to achieve the monetary growth rate target at the same time as attempting to keep interest rates within narrow limits. When these two objectives

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[2]The methods used in reporting monetary growth tended to provide distorted information each time a target was missed because of adjustment to the base from which the growth had been measured. This resulted in a revision of the measurement techniques in 1978.

[3]Depository Institutions Deregulation and Monetary Control Act of 1980.

[4]While heretofore money was regarded as consisting of fiat money (legal tender currency and coin) and demand deposits at banks, this concept was extended to include near money substitutes such as MMMF's (money market mutual funds), NOW (negotiable order of withdrawal) accounts, credit union share drafts, ATS (Automatic Transfer Service) accounts, repurchase agreements, travellers cheques and Eurodollar deposits (Cargill & Garcia 1985:110-111).

clashed the Federal Reserve gave preference to the targeting of the interest rate so loosing control over the money supply (Mayer 1992:16-17).[5]

After 1982 there was a shift to targeting "borrowed" reserves or the accommodation provided by the Federal Reserve.[6] This led to interest rate stability because the central bank was accommodating virtually all short-run changes in the demand for money through open market operations (Mayer 1992:18). Supply is expanded to match demand which neutralised the interest rate as a factor. Effectively the Federal Reserve still controls the interest rate creating a continuing direct control. The two approaches are contrasted by Mayer (1992:19) who refers to the 90 day Treasury Bill rate fluctuation of only 0,26 per cent during the period October 1982 to December 1986, as opposed to 28 per cent during the period October 1975 to September 1979.

Today in the United States, the primary tool for conducting monetary policy remains the use of open market operations in United States Government securities (Bank for International Settlements 1993a:459). These operations are carried out by the Federal Reserve Bank who act on instructions from the Federal Open Market Committee (FOMC). To increase banking reserves the Federal Reserve will either purchase outright or undertake the temporary repurchase of government securities. To decrease reserves they will sell outright or enter into a temporary matched sale-purchase contract of government securities.

Because of the need of the monetary authorities to know the extent of the monetary base as a part of their control approach, financial innovations may well be designed to beat their reporting requirements. Even with the move towards the indirect approach in monetary

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[5]The properties of any demand curve substantiate this. For a given demand curve the price will determine the quantity demanded or vice versa. One cannot determine both price and quantity simultaneously without altering the demand curve in some way. Applied to the demand for money price relates to the interest rate and quantity to the monetary aggregate.

[6]There are two ways in which a cash reserve system can be applied by central banks. This can either be the "American" or the "classical" cash reserve systems (Republic of South Africa 1985:182-183). Under the "American" system the focus is on controlling the *amount* of the banks' total (non-borrowed) cash reserves. The Federal Reserve will use policy instruments such as open market operations to either create or destroy cash reserves in the hands of the banks, leaving the behaviour of interest rates to market forces. As noted the policies of targeting both the monetary aggregate and the interest rate are essentially in conflict.

policy, in recent years, onerous reporting requirements may be seen as a form of direct control and may be the trigger for circumventive financial innovations.

4.2.3 Financial innovations

The period prior to the onset of the Depression was one in which banks were allowed to compete in a relatively unrestricted system. The main barrier to a completely competitive approach was the fact that banking was subject to anti-trust measures to ensure that neither a monopolistic or an oligopolistic situation developed. From our prior examination of the financial system in the United States we have seen how there was a strong swing toward regulation in the 1930s as a result of the Depression.

During the 1930s and the 1940s financial services and products remained within the constraints of the then heavily regulated financial system. It was only when interest rates began to climb in the 1960s that financial institutions began to come up against these regulatory constraints. As interest rates rose they came up against the regulatory barriers beyond which they could not legally move. This resulted in disintermediation as deposits flowed into restriction free areas and other financial innovations such as Money Market Mutual Funds. The banks used financial innovation to by-pass regulatory restrictions and the effects of disintermediation.

During the 1970s and the 1980s financial innovations were largely circumventory. These financial innovations were a response to two regulatory constraints; the ceiling on the rate of interest payable on deposits and the prohibition on paying interest on cheque deposits (Mayer 1992:21). In the first instance this led to disintermediation as depositors moved into the newly developed Money Market Mutual Funds (MMMFs)[7]. Secondly, the banks responded by developing new products and instruments which were offered to clients and

[7]Money Market Mutual Funds are units in a portfolio of money market instruments such as Eurodollar deposits, Certificates of Deposit, Treasury Bills and various forms of commercial paper. These units earn market related interest rates. "Deposit" amounts could be as low as $100 and could be linked to transactional services in much the same way as ordinary bank deposits were. Depositors came to regard MMMF's as close substitutes for bank based demand, savings and fixed term deposits notwithstanding their lack of deposit insurance (Cargill & Garcia 1985:104).

which circumvented regulatory restrictions. These included Certificates of Deposit, Eurodollar deposits, Repurchase Agreements, Negotiable Order of Withdrawal (NOW) accounts and Automatic Transfer Service (ATS) accounts (Cargill & Garcia 1985:107).

The definition of these instruments; how they function and their use in circumventing interest rate controls and the prohibition of the payment of interest on cheque accounts is as follows:

(a) Certificates of deposit. These are large value negotiable deposit certificates issued by banks which may be traded on the money market. In the United States certificates of deposit were specifically exempted from interest rate ceilings (Davis & Lewis 1992:139). Because of their negotiability they can be traded on the market at any time prior to their maturity. A depositor who needs access to his funds in the short term may purchase a certificate of deposit with a long term maturity, re-sell it in the short term and still earn interest. Alternatively the depositor could hold the funds in the short term in a non-interest earning cheque account. The negotiability of the certificate of deposit gives it the properties of an interest earning demand deposit.

(b) Eurodollar deposits. U. S. Dollar denominated deposits held in a bank outside of the United States. The interest rates applicable to such deposits are market related. These deposits are not subject to any form of regulation.

(c) Repurchase agreements. An arrangement to sell and then repurchase securities at a set price. When this is used to switch funds, on an overnight basis, between a non-interest bearing cheque account and an interest bearing asset it has the same effect as paying interest on the cheque account. Alternatively, when a bank sells a private sector asset to the private sector in terms of a repurchase agreement disintermediation takes place and the amount of bank credit extension to the private sector is temporarily reduced. This reduction in credit is wiped out when the asset is repurchased.

(d) NOW (negotiable order of withdrawal) accounts. A savings account,

restricted to natural persons and non-profit organisations, on which limited withdrawals could be made by cheque. Balances on the account attracted interest payments. The account was regarded by the depositor as a substitute for a demand deposit or a cheque account. Because the NOW account permitted, albeit limited, third party cheque payment facilities, it could be regarded as an interest bearing cheque account, especially among small depositors who do not have a high volume of transactions.

(e) Automatic Transfer Service (ATS). A savings account that allows for transfers into a cheque account under certain prearranged conditions. Such conditions could include the proviso that if the cheque account became overdrawn there would be an automatic, "back-dated" topping up of the account from the savings account. This was tantamount to paying interest on cheque accounts, a practice prohibited by legislation.

The development of certain of the new instruments was subsequently supported by the Federal Reserve Bank as they began to deregulate (Van Horne 1985:623).[8] By the late

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[8]The following schedule reflects the dates and the changes to regulations covering selected deposit taking activities in the United States (Thornton & Stone 1992:88-90).

Effective Date	Measure
June 1970	Interest ceilings suspended on large denomination negotiable certificates of deposit (CDs) with maturities of 30 - 89 days.
September 1970	Federally chartered savings and loan associations (S & Ls) permitted to make pre-authorised transfers from savings accounts for household related expenditures.
June 1972	State chartered mutual savings banks (MSBs) authorised to make NOW accounts available in Massachusetts. This facility was subsequently extended to other states.
May 1973	Interest ceilings suspended on large denomination negotiable certificates of deposit (CDs) with maturities of 90 days or more.
April 1975	The Federal Reserve authorises member banks to make transfers from a savings account to a demand deposit account on a customer's telephonic instructions.
November 1975	Commercial banks permitted to offer savings accounts to businesses.
May 1976	State chartered S & Ls and MSBs in New York authorised to offer cheque accounts.

(continued...)

1970s the Federal Reserve Bank had adopted a policy of encouraging savings by the easing of interest rate controls so allowing depositors to realise market determined returns (Cargill & Garcia 1985:103). This was evidenced by the recognition of ATS (automatic transfer service) accounts in 1978 and the nationwide acceptance of NOW (negotiable order of withdrawal) accounts in 1980 (Thornton & Stone 1992:89). By 1986 deposit rate ceilings fell away altogether. What had started out as circumventory financial innovations had become competitive financial innovations.

Van Horne (1985:625) has examined some of the financial innovations which occurred in the United States of America between 1978 and 1984 on the basis of their primary causes. It

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[8](...continued)

June 1978	All insured banks and S & Ls authorised to offer six month money market certificates at a ceiling rate related to six month Treasury bills and for a minimum denomination of $ 10 000.
November 1978	Commercial banks and MSBs authorised to offer automatic transfer (ATS) service from savings accounts to cheque accounts.
December 1980	NOW account authority extended to all commercial banks and S & Ls.
December 1981	Commercial banks and S & Ls authorised to offer ceiling free individual retirement accounts (IRAs).
December 1982	Commercial banks and S & Ls authorised to offer money market deposit accounts (MMDAs) with no ceiling or maximum maturity. $2 500 minimum balance and limited transactional features.
January 1983	Interest rate ceiling removed for 7-31 day accounts.
April 1983	Interest rate ceiling removed for fixed deposits with a maturity of 30 months or more.
October 1983	Interest rate ceiling removed for fixed deposits with a maturity of more than 31 days.
January 1985	Minimum balance for MMDAs and 7-31 day accounts reduced to $1 000.
January 1986	All minimum balance requirements dropped.
April 1986	Interest rate ceiling on book based savings accounts removed. Authority of regulators to set deposit rate ceilings expires.

must be stressed that this listing while detailed is not comprehensive.[9] The period covered relates to that when the interest rate constraint appears to have been the major contributory factor in generating many circumventory financial innovations in that country. All controls on interest were finally dropped only in 1986. In his analysis Van Horne sets out six primary causes, which relate to volatile inflation and interest rates which created a demand for risk averse financial products, regulatory changes and the circumvention of regulations, tax legislation, technological advances, changes in economic activity and academic work.

As previously discussed in section 2.4.3 these causes may then be re-classified as being either circumventory or competitive on the basis that regulatory changes and tax legislation give rise to circumventive financial innovations while risk reducing changes, technological advances, changes in economic conditions and academic work are the basis for competitive

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[9]A Partial Listing of Recent Financial Innovations (1978 - 1984) Source - Van Horne 1985:625

	Primary Cause*
Products	
Money market investment accounts	1,2
Super NOW accounts	1,2
Interest rate & stock index futures markets	1,2,6
Options on futures contracts	1,2,6
Municipal bonds mutual funds	1,3
Zero coupon bonds & coupon stripping	1,6
Adjustable rate preferred stock	1,3
New variations of adjustable rate mortgages	1,2,6
Securitisation of pass-through mortgages	1,2,5
IRA accounts	3
Universal life insurance policies	1
Currency option loans	1
Interest rate swaps & currency swaps	1
Forward interest rate loan contracts	1
Bonds with put options	1,3
High yield (junk) bonds	1,6
Processes	
Automated teller machines	2,4
Point of sale terminals	4
Financial transactions by personal computer	4
Shelf registrations	2
Electronic security trading	2,4
Electronic funds transfer	4
New variations in credit card processing	4

* Causes: 1, volatile inflation and interest rates; 2, regulatory; 3, tax law change; 4, technological advance; 5, level of economic activity; and 6, academic work.

financial innovations.

Cargill and Garcia (1985:103) neatly set out the whole process when they state "The financial system evolves whenever the Federal Reserve changes its role, its goals, or the procedures it adopts to attain these goals. Such changes shift the set of constraints under which financial firms operate; when these constraints are binding, new positions of equilibrium are sought. Firms innovate either to take advantage of new opportunities or to avoid restrictions that curb their profitability."

Currently in the United States certain money supply reports are compiled at the end of each day. The tendency has, therefore been toward the creation of intraday funds, such as repurchase agreements, overnight Eurodollar deposits, sweep accounts and daylight overdrafts (Moses 1983:9).[10] The intraday money aggregate is therefore larger than the end of day position. Much of these intraday funds are "electronic money" which has come about as a result of technological innovation in the financial system to generate payments (Roberds 1993:12). Roberds maintains that such payments have taken on the same properties as money in a similar fashion to demand deposits. During the course of a business day banks can expand both their balance sheets and the monetary base through the creation of this "electronic" money either in their own books or through unsecured "daylight" overdrafts in their accounts with the Federal Reserve Bank. Roberds argues in favour of reserve requirements for such money.[11] These financial innovations are circumventive.

Although Van Horne (1985:624-625) has attempted to categorise selected major financial

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[10]Sweep accounts relate to the balances of the bank accounts of a large company which are transferred or "swept" to a single account at the close of the business day. This results in a setting-off of the various positions, which may be both debit and credit, in the various accounts. This is also known as cash management. The technique is used to inter-alia reduce interest on overdraft, consolidate interest payments on credit balances, reduce credit extension exposures or the full extent of liabilities. A daylight overdraft is the permitting of a client to overdraw his account during the course of the business day, against an agreed limit, subject to the funds being repaid before the end of the business day. All these are circumventive innovations.

[11]While the central bank is able to control the extent of reserves it cannot anticipate the effect of such changes on the economy. Reserves act as a tax on banks on the one hand while the prohibiting of the payment of interest on demand deposits on the other, restricts depositors earnings. Both deposit holders (banks) and depositors have the incentive to bypass these restrictions through circumventive financial innovation.

innovations in the United States as driven by either one or a combination of factors such as:

- inflation/interest rate volatility, regulation or changes to the tax laws (circumventory) or,
- technological advance, level of economic activity, risk reducing or academic work (competitive),

it must be remembered that a new process such as the use of the ATM (automatic teller machine) may either be a competitive financial innovation (new product aimed at profit) or a circumventive financial innovation (under certain legislative conditions in certain of the States use of the ATM has assisted in bypassing regulations that prohibit branch banking). Van Horne (1985:625) has referred to a number of "processes" which includes automatic teller machines, point-of-sale terminals, financial transactions by personal computer, electronic security trading, electronic funds transfer and variations on credit card processing (see also footnote 9 in this chapter). Once a circumventive financial innovation comes into general use it may well become a competitive financial innovation, notwithstanding its circumventive genesis.

4.2.4 Financial innovation and monetary policy - the evidence

Competitive financial innovation, by financial firms, will seek to meet customers' demands. These demands will vary depending on current economic circumstances. In the United States in the 1960s and the 1970s high interest rates and inflation led to the creation of products and instruments which permitted higher rates of return, but which also came up against barriers that were by-passed through circumventive financial innovations. These later became competitive financial innovations as financial markets were deregulated so freeing them from interest rate controls which were the main inhibitors. In the 1980s and the 1990s volatile interest rates have created uncertainty in financial markets. Financial innovations have now been directed at reducing this uncertainty or risk through the development and the use of numerous derivatives (Thornton & Stone 1992:91). In the absence of any current regulatory barriers to their development, derivatives are competitive financial innovations. Concerns about financial losses in the derivatives market has led to calls for closer scrutiny (Bank for

International Settlements 1994:118). In the light of recent financial crisis in derivatives trading, regulatory authorities may well consider the need for regulation, which, should it come about, should in due course result in a further round of circumventive financial innovations.

Financial innovations in the United States in the post war period have largely been as a result of direct monetary policy instruments. Curbs on the rate of interest payable on savings led to disintermediation. This was evident in the huge move to MMMF's. In turn the banks, to protect their deposit base, innovated new financial instruments on which market related interest could be paid. These financial innovations were circumventory because they bypassed legislative curbs. The various financial innovations, which Cargill and Garcia (1985:104) refer to as "transactions media", such as credit cards, while they were close substitutes for money, resulted in a change in the relationship between money and the economy. Because these new instruments were not included in the measure of money (M1) it became difficult for the Federal Reserve to gauge the impact of changes in the money supply on the economy. Mayer (1992:22) maintains that these financial innovations played a role in ending monetary targeting because of the distortions of the definition of M1. In an attempt to overcome this the Federal Reserve Bank was forced to revise the definition of money. Technology also played a part because it permitted the collection, storage and transmission of information which assisted in the innovatory process. The development of "cash management" systems, which permitted the collation, massing and the setting-off of different account balances for the same depositor, in effect permitted the effective payment of interest on demand deposits, so bypassing interest rate controls. The use of cash management techniques, which started with large corporate clients, soon spread to smaller businesses and then to personal clients as well, as Davis and Lewis (1992:139) relate "It was a short step from the money-market mutual fund to the *cash management account*, which tied together a money fund, an automatic overdraft privilege, a cheque book with a conventional commercial bank and a credit card".

Financial innovation has the effect of distorting financial flows and hence monetary aggregates. Policy makers have no way of knowing if the policy measures taken are having the desired effect (Gowland 1984:217). As regulations change and as new methods are

SAW with the abandonment of MS target

introduced these are often followed, after a lag, by changes to the definition of the monetary aggregate. This is an attempt to get a closer match of the monetary aggregate to the relative economic theory.

The role of banks in the United States in the supply of credit has declined significantly since the 1960s. At the same time other sources of funds such as the use of commercial paper and bonds have increased.[12] This shift can be attributed to the changes brought about in the 1960s and the 1970s to depositor's needs being accommodated through financial innovations (as with MMMFs, Eurofinance etc.). These financial innovations were circumventive in nature and came about because of direct monetary policy restrictions.

In a study undertaken in 1992 Duca (1992:1) examines the possible explanations for the deviation of actual M2 growth from that estimated during the period 1990 - 1991. The conclusion drawn is that this disparity was a result of two factors. Firstly, it was caused by the substitution by depositors from demand deposits to *liquid* bonds and share based mutual funds. In the second instance the effect of the Savings and Loan crisis had caused a withdrawal of numerous low balance demand deposits. The first cause relates to financial innovation where funds have been switched into close transactional substitutes, while the second related to a non-innovatory financial system adjustment.

Of particular significance is that Duca (1992:19) maintains that this episode is similar to two earlier occurrences and that both appear to have been as a result of financial innovations which arose because of regulation. The first occurred in the mid 1970s where changes in M1 were identified by Goldfeld (1976:720-722) as being directly linked in the first instance to individuals switching from demand deposits to near money substitutes, as a result of the prohibition of paying interest on demand deposits, and secondly because of a shift from normal bank loan facilities to the use of commercial paper.[13] The latter was a result of the

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[12]The share of banks as a supplier of credit declined from 34,8% of the total in the period 1960-69 to 23,1% of the total in period 1980-89. Commercial paper and bonds increased from 43,7% to 62,1% in the same period (Thornton and Stone 1992:95).

[13]Goldfeld specifically identifies these as NOW (negotiable order of withdrawal) accounts, money market mutual funds, automatic investment accounts, telephone transfers between savings and cheque accounts and overdraft privileges.

banks having to ration credit because interest limits had resulted in disintermediation so reducing their ability to lend.

The second episode occurred in the late 1970s and the early 1980s. Here high market related interest rates which ran up against interest rate restrictions forced depositors to shift from demand deposits to money market mutual funds (MMMFs) with a similar effect on the M2 aggregate as occurred earlier.

Thornton and Stone (1992:108-109) point out that, despite the fact that the empirical evidence of the effects of financial innovations on the macro-economy are still speculative, there are strong indications that the "something" that has affected the demand for and the supply of money during the 1980s is financial innovation. There is sufficient evidence to support the contention that the sudden change in the M1 velocity growth in 1981 was a direct result of the nationwide authorization of NOW accounts at the end of 1980. M1 velocity, which had grown at a steady rate since 1953 became unstable after 1981 and declined erratically until 1987.[14] Thornton and Stone (1992:104) ascribe the initial drop in velocity (which occurred

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[14]Velocity or more correctly the "velocity of circulation" is the ratio of gross domestic product (GDP) to the money supply. The use of the velocity to illustrate the effects of financial innovation is based on the quantity equation, MV = PT. The equation states that the quantity of money in an economy (M) multiplied by the number of times that it circulates in a given period or its velocity of circulation (V) is always equal to the product of the price level (P) and the number of transactions (T) in the same period (GDP). From this it follows that for the identity to remain valid, changes to any of the four components must result in a change in any or all of the remaining three components.

Providing that PT (or Gross Domestic Product) remains static an increase in M will result in a decrease in V. Conversely an increase in V will only come about if M decreases. If we drop the assumption about a static GDP then an increase in the latter must result in an increases in either M or V or both. The increase in GDP could be as a result of inflation, which is an increase in P or an increase in economic activity (T) or a combination of both.

If the money supply decreases (for a given GDP) the velocity will rise. Alternatively if the money supply increases (for the same level of GDP) the velocity will fall. In the normal course velocity will vary as a result of changes to GDP and the money supply. Sharp and sudden changes to velocity are indicative of other causes. The measurement of such changes in velocity then becomes a useful *indicator* of the effects of certain financial innovations. It must be noted that where the financial innovation does not result in a change to the monetary aggregate there will be no change to velocity. The technique serves only as a rough guide to the fact that "something" has occurred.

If on the other hand the quantity of money changes because it has been switched from the aggregate being measured then the value of the velocity (V) must rise. Such a rise can be expected where funds "disappear" from a particular monetary aggregate.

in the 1981-82 period) to the increase in the M1 aggregate which resulted from the nationwide introduction of NOW accounts on 1 January 1981 whose balances were included in the M1 aggregate.

The conclusion that can be drawn is that direct monetary policy, in the form of setting maximum interest rates that could be paid to depositors, led to circumventive financial innovations which had a direct and measurable effect on the monetary policy target, in this case the monetary aggregate. This circular causality, having commenced with direct monetary policy, resulted in circumventive financial innovations which rendered the monetary policy target inaccurate, so distorting monetary policy.

Once regulatory barriers are removed there no longer remains any need for circumventory financial innovation. These then become competitive financial innovations. Van Horne (1985:623) sums this up succinctly when he writes that "When constraints are reduced, of course, market participants enter new lines of business possessing previously unattainable profit and/or risk reduction possibilities."

Thornton and Stone (1992:108) list four consequence of financial innovation. These are:

- the gradual removal of many financial regulations
- the reducing role of banks as a source of funds in credit markets
- a change in the demand for money
- a diminished ability of the monetary authority to control the stock of money.

It can be concluded that in the United States direct monetary policy measures led to circumventive financial innovations. Where restrictions were eased or removed, competitive financial innovations became the norm, as is currently the case with derivative instruments which are aimed at reducing financial risk. However "hidden" direct monetary policy instruments ensure that circumventive financial innovations such as intraday money creation still exist.

4.3 THE UNITED KINGDOM[15]

4.3.1 The financial system

Banking in the United Kingdom differs considerably from that in the United States of America. Unlike the United States, where the major concern was the avoidance of any form of banking monopoly, developments in the United Kingdom have led to a banking system in which a limited number of large banks and building societies, both with widespread branch structures, have dominated the financial system. Behind the banking system stands the Bank of England, who as lender of last resort has always been willing to assist individual banks on a temporary basis, without limit, but only on terms of its own choosing (Dow & Saville 1990:167).

In the United Kingdom the banking and building society systems were oligopolistic. Under this system two of the conditions of perfect competition, namely that of free entry and a large number of suppliers are not satisfied. The financial institutions, both in the banking and the building society movement, were subject to a formal arrangement between themselves or a cartel. While firms in a cartel retain their independence, they agree with each other to abide by certain rules such as the price and the marketing of their products. In the United Kingdom the financial system was dominated by two such cartels - that of the clearing (or cheque issuing) banks and that of the building societies. Firms in a cartel face internal constraints set by the self regulation of the cartel. Such controls may be equated with direct controls imposed by the monetary authority. These self imposed controls are, by their nature, anti-competitive. Because they are self imposed they tend to automatically preclude any circumventive financial innovation because the cartel members have no need to circumvent their own restrictions. Should they do so the cartel will break down. It does not however impede non-member institutions from competing, unless they are required either by custom, practice or regulation to be a part of the group that has formed the cartel. In the

[15]In this section a strong reliance has been placed on the work of Pawley (1993). This has been done simply to accomodate the most recent literature on the subject in the United Kingdom. Pawley's work confirms earlier literature such as Llewellyn (1989), Podolski (1986) and (1990), Flemming (1992), Spencer (1986) and Forsyth (1987).

United Kingdom the basis for self regulation of the financial system was through a cartel or "club" type arrangement. The clearing banks and building societies are examples of such specific groups or "clubs" (Llewellyn 1989:111).

Banks and building societies have co-existed in the United Kingdom for over a century. They differ in terms of their structure, their underlying purpose and the types of financial intermediation that they undertake. The banks are profit seeking joint stock companies while the building societies are mutual societies in which the need to make a profit does not feature.

The building society cartel was the result of the creation of the building society movement as a mutual institution. Its "self-help" nature contributed to the conduct of its affairs (Pawley 1993:28).[16] The building society cartel was different from the normal concept of the cartel however. While in its normal sense the objective of a cartel is to raise prices the building society cartel kept both its deposit and mortgage rates below market clearing levels (Pawley 1993:50). This effectively rationed the supply of funds. The building society cartel could only succeed if it faced no effective competition from other financial institutions. Such competition from the banking sector was effectively stifled by restrictions on the banks which were aimed at controlling the money supply. These restrictions are covered under monetary policy below.

The banks, on their part operated an interest rate cartel which had been in existence since 1955, in which deposit rates were linked directly to the bank rate for all members (Pawley 1993:33). A similar linkage was also evident in interest rates that the banks charged on overdrafts and loans. In 1968 the Monopolies Commission criticized the cartel on the basis that it focused on non-price rather than price competition. Their call for the abandonment of the cartel arrangement was boosted by changes to the form of monetary control that were introduced under the "Competition and Credit Control" system (CCC) in September 1971.

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[16]The business of building societies was restricted to the lending of money on residential property at fixed interest rates for periods of about twenty years. Since 1915, building societies were restricted to lending only on owner occupied properties after problems that had been experienced as a result of the imposition of rent controls.

Subsequently, due to perceived failures in the more open CCC approach, quantitative restrictions were introduced through a supplementary deposit scheme also known as the "corset". The corset was ultimately abandoned in 1980 and this permitted the banks to compete directly with the building societies. Both CCC and the corset are dealt with in section 4.3.2.

4.3.2 Monetary Policy

Prior to 1971 monetary policy in the United Kingdom had been based on direct control aimed at controlling the extent of bank lending through credit ceilings (Dow & Saville 1990:117).[17] Only one definition of money was in official use. This was the so-called "broad definition" (which corresponded with the M3 aggregate which was introduced in that year) (Podolski 1986:89). During this period there had been a basic stability in the broad money aggregate. This was also a period of direct monetary policy (up to 1971) that was based on the control of bank credit by way of credit ceilings.[18] Direct controls on bank lending were seen as an impediment to competition between banks as well as being responsible for forcing borrowers to seek accommodation elsewhere. The criticism of the cartel arrangement in 1968 by the Monopolies Commission, on the basis that it focused on non-price rather than price competition and their call for the scrapping of the cartel arrangement, was one of the factors that led to the "Competition and Credit Control" (CCC) approach. Under CCC the focus was that the level of credit should be determined by its cost in a freely competitive system. It was recognised that quantitative controls tended to lead to circumventive financial innovation in the form of disintermediation (Pawley 1993:33).

Under CCC, quantitative controls were scrapped. CCC allowed for a more market based

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[17]The Radcliffe Committee had, already in 1959, stressed that the supply of money could not be reliably used as a policy instrument because of the problems associated with financial changes or innovation which according to Pawley (1993:18) rendered the accurate definition of money impossible.

[18]The extent of bank lending had been limited since the end of the Second World War by appeals from the Bank of England for "restraint" on the part of the banks. It was only from 1965 that this restraint took the form of specific ceilings. These ceilings specified the extent to which credit extension should be allowed to grow. These restraints and ceilings had led to a growing amount of disintermediation in the form of either direct inter-company lending or off-balance sheet finance in the form of bankers' acceptances (Dow & Saville 1990:182).

competitive approach although some direct controls were still in evidence under the new arrangement. Two direct policy instruments were initially thought to be adequate. These were reserve requirements and special deposits.

- Reserve requirements

  Banks were required to maintain a reserve ratio between "eligible" reserve assets and "eligible" liabilities. Eligible reserve assets were balances held at the Bank of England, certain government treasury bills, secured call moneys on the London discount market and certain local authority and commercial bills which were eligible for rediscount by the Bank of England.[19]

- Special deposits

  These were supplementary reserve requirements which had been aimed at placing pressure on the bank's reserve ratios so forcing them to sell eligible assets.

The switch to a more competitive system led to a reduction in the margin between deposit and lending rates on the one hand and an increase in these rates on the other as they found their market level. The change had brought about a shift in the banking industry from non-price to price competition. According to Pawley (1993:34-35) the existence of market related interest rates led to re-intermediation as funds which had previously left the banking system flowed back again. Bank lending also increased.[20] Of significance was banks making funds

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[19]Eligible liabilities comprised non-bank residents and non resident deposits with a maturity of less than 2 years, net sterling deposits to the banking sector of any term, net sterling certificates of deposit and net non-sterling deposits. The reserve ratio was initially set at 12,5 % (September 1971 to January 1981) and was reduced to 10 % (January 1981) reduced temporarily to 8 % (during March and April 1981) and abolished in August 1981 (Pawley 1993:214).

[20]Private sector bank deposits almost doubled between 1970 and 1973, when they grew from 13,8 billion pounds to 26,9 billion pounds. By 1979 these deposits stood at 47,7 billion pounds. Similarly private sector bank lending which had stood at 9,6 billion pounds in 1970 had grown to 22,9 billion pounds in 1973 and 45,3 billion pounds by 1979 (Pawley 1993:36-37).

available for house purchases in direct competition with the building societies.[21] In terms of this rapid growth of both deposits and lending the new monetary control system was seen as a failure.

One of the intentions had been, that under the CCC scheme, an increase in the rate of interest payable on public sector debt should have resulted in a flow of funds from deposits with the banks to the public sector. The management of the outstanding debt of the central government, or the public debt as it is more commonly known, may also be used as an indirect instrument of monetary policy. In the normal course the debt of the central government will vary in relation to timing differences. Where deficits arise the government will borrow from the private sector. Notwithstanding the normal use of public debt to fund timing differences which occur because expenditure and income are not evenly matched, the government may also use such debt as an instrument of monetary policy where its borrowings are in excess of its day to day funding requirements. This excess borrowing is a conscious decision by the government. Its effect is to withdraw funds from the domestic banking system and is in many respects similar to open market operations. However, the extent of competition for deposits raised market interest rates keeping bank deposits competitive with public sector debt rates. The policy of rising interest rates on public debt was offset by the increase in the market determined rate for deposits. The incentive for the private sector to switch from deposits to public sector debt did not materialise and the anticipated reduction in monetary expansion did not occur.

This failure to reduce deposits caused the authorities to shift their focus from the use of interest rates, to trying to control the demand for bank borrowings. This had been a second

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[21]Net new loans for house purchases reflected the following in given years. All figures shown are in millions of pounds.

Year	Building Societies	Banks	Other*
1970	1088	40	181
1971	1600	90	227
1972	2215	345	475
1973	1999	310	584

* Local authorities, insurance companies, pension funds and other public sector.
(Source: Pawley 1993:39)

intention of the authorities under CCC, in the belief that high interest rates would have a dampening effect on the demand for bank borrowings. While the banks had previously maintained equilibrium between their assets and liabilities by dealing in marketable government securities, there was a move to using the recently developed inter-bank market to obtain wholesale deposits at short notice, to accommodate the demand for credit and, to provide an outlet for surplus funds. Consequently the anticipated dampening effect of raising funds through dealing in government securities did not materialise. An additional factor for this failure was the shift of the banks to liability management. In theory banks base their lending (assets) on the extent of the deposits (liabilities) they hold. In practice what happened was the reverse. Banks would first lend (creating assets) and then seek to adjust their deposits (liabilities) to accommodate their increased asset base (Pawley 1993:41).

The Bank of England was forced to counter this situation by the introduction of a further direct control in the form of a supplementary special deposit scheme which was given the name of the "corset". The scheme was operative from December 1973 until June 1980.[22] In effect direct monetary policy methods were re-introduced to counter what was seen as a failure in the use of the open market approach. Up to 1980 banks were under guidance, and at times direct restrictions in their lending. Prior to the lifting of all controls in 1980 banks had resorted to off-balance sheet activity to bypass these.[23] Once controls were lifted the need to keep these items off-balance sheet fell away. The abandonment of exchange controls in 1979 heralded the end of the corset because banks were able to by-pass corset controls through the Eurocurrency market. Circumventive financial innovation had in this instance led to an increase in the extent of deregulation.

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[22]Under the scheme banks were compelled to maintain additional non-interest bearing reserves at the Bank of England, if that bank's interest bearing liabilities grew at a rate faster than that specified. In addition, qualitative lending guidelines were imposed. The banks were requested to exercise restraint in their advances to the personal sector and to property companies. These qualitative controls were to remain in force from December 1973 until 1979. Retail banks were also requested to limit the interest rate paid on deposits of under ten thousand pounds to 9,5 % between September 1973 and February 1975 (Pawley 1993:42).

[23]Off-balance sheet activity took the form of bill finance or acceptance facilities by the banks. Commercial paper, once accepted by a reputable financial institution, became easily marketable. For the bank the acceptance is only a contingent liability and hence "off-balance sheet". Borrowing and lending was therefore accommodated outside of the normal channels (Pawley 1993:132).

After 1980 monetary policy was based on short term interest rates, which were maintained within an unpublished band. Pawley (1993:54) states that this became the sole instrument of monetary control. As all financial institutions (banks and building societies) were now subject to the same control instrument it enabled the banks to enter the retail housing market in direct competition with the building societies. Once banks and building societies started to compete in the lending business it was a logical extension for them to compete for deposits as well (Pawley 1993:56-57). Deposits attracted by the banks tended to reduce what the building societies were able to lend and vice versa.

Monetary policy in the United Kingdom is today conducted mainly by way of open market operations by the Bank of England (Bank for International Settlements 1993a:414). The United Kingdom uses what has been referred to as the "classical" cash reserve system (Republic of South Africa 1985:183-184). Under the "classical" system the intention is not aimed at controlling the amount of cash reserves but rather the cost of credit by forcing the banks to seek central bank accommodation at the discount window. The level of this interest rate, which is set by the Bank of England, has a direct effect on the use of credit facilities. To a large extent these operations take the form of dealing in "eligible bills" which consist of those issued by the Treasury, certain local authorities as well as approved bankers acceptances. The Bank of England conduct these operations through a group of designated discount houses who act as intermediaries. Their responsibilities are aimed at maintaining the liquidity of that country's banking system by way of active participation in the money market. To accommodate the market the Bank will invite offers of eligible bills either for outright sale or for sale under a repurchase agreement. To mop up surplus funds, the Bank will invite bids for Treasury bills.

4.3.3 Financial innovations

Financial innovations which occur in the United Kingdom are driven by essentially the same reasons as those in the United States. According to Pawley (1993:51), a low level of financial innovation was evident in the United Kingdom up to 1980. He maintains that three factors were responsible for this:

(a) the similar nature of bank and building society deposits[24]

(b) the bank and building society cartels and

(c) direct restrictive monetary controls imposed by the monetary authorities.

All three factors stifled competition. While he concedes that outside regulatory restrictions however are not a bar to financial innovation he states that the self imposed cartel restrictions was the inhibitor to circumventive financial innovation.

Direct controls, particularly quantitative ceilings on bank lending, were seen to be inefficient and acted as a brake on competition. Additionally the operation of the interest rate cartel was seen as an opportunity for the non-clearing banks, who were not cartel members, to compete with the clearing bank cartel (this is circumventive financial innovation - not in the normal sense of getting around statutory regulation but circumventing the constraints imposed by the cartel). Quantitative controls had led to disintermediation and to the creation of a secondary money market.

The result of these actions was that the banks' ability to compete was curtailed. Pawley (1993:43) states that "The periodic imposition of direct monetary controls between December 1973 and June 1980, aimed at reducing the bank's deposit bases, thus restricted a major element of the potential competition for retail funds, strengthening the competitive position of the building societies." The inability of the banks to compete effectively with the building societies re-enforced the latter's own cartel arrangements.

Financial innovations in the United Kingdom can be categorised on the basis of three underlying factors. These are:

(a) Those financial innovations which took place during periods of direct control by the monetary authority. These financial innovations, such as the use of the bankers acceptance were circumventive, and led to large scale

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[24]The types of deposit accounts offered by both banks and building societies were simple and virtually identical. They offered no new features which could serve as an incentive to draw deposits away from one or the other type of institution.

disintermediation

(b) Financial innovations in the building society industry, and;

(c) Financial innovations in the banking industry.[25]

These last two categories only came into their own once cartel arrangements fell away. These innovations were mainly competitive in nature.[26]

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[25]Essentially the types of financial innovations that occurred in both the building society and banking industries were the same. Both involved the move toward the payment of interest on demand deposits. In the building society industry "High interest accounts" were introduced in 1980 which paid a premium over ordinary building society shares. The minimum required deposit was relatively low (500 pounds) and the withdrawal period was in the region of seven days. This type of account became even more flexible as funds availability improved. In some cases funds were subject to immediate withdrawal. The change in the financial infrastructure is evidenced by the fact that in 1981 less than 10% of building society deposits were held in this type of account, while by the end of 1987 this had grown to in excess of 70%. The invention and the use of the ATM (automated teller machine) also assisted the building societies because these devices helped make the high interest bearing account more accessible to the public as a transactions type of account rather than an investment account. The logical progression was the introduction of interest bearing cheque accounts by some building societies which further diluted the distinction between the building societies and the banks (Pawley 1993:61).

The banks then began to offer high interest sight deposit accounts from 1983. The popularity of this type of account saw it grow from 3,4% of all bank deposits in 1984 to 23,2% in 1990 (Pawley 1993:65). Banks also entered into the home mortgage business with the effect that the interest rates charged by the building societies rose to reflect a market determined rate as the old building society cartel ceased to exist.

Although the practice of paying interest on current accounts is thought to be a modern day financial innovation, it is noteworthy that Keynes (1931:37) observed that; "In Great Britain the old fashioned distinction between deposit accounts and current accounts, namely that the former earn interest but the latter do not is fast becoming blurred; for increasingly, banks allow interest on the average of a customers current account in excess of an agreed minimum..." This illustrates the phenomenon of the source of a financial innovation being obscure (see chapter two - Types of financial innovation).

[26]Once the "corset" ended, financial innovations focused on interest bearing transaction accounts. From 1980 the building societies began offering high interest accounts with short notice periods and fairly low minimum deposits. These types of accounts became increasingly more flexible, especially in the ability of depositors to withdraw funds on demand. These accounts began to be used like transaction accounts. Some building societies began to offer interest bearing cheque accounts. The banks countered by beginning to offer high interest sight (demand) deposits from 1983 onwards. As the banks entered the mortgage market following the demise of the cartel the behaviour of building societies which previously had been governed by non-price competition changed. Interest rates tended to become much more market orientated and responsive to changes in the market (Pawley 1993:72).

4.3.4 Financial innovation and monetary policy - the evidence

During the period under review monetary policy in the United Kingdom has flowed through a series of four cycles. Broadly speaking these cycles were:

(a) Direct monetary policy up to 1971

(b) A combination of direct and indirect monetary policy during the years 1971-1973 (the period of Competition and Credit Control or CCC)

(c) Direct monetary policy from 1973 to 1979 under the "Corset", and

(d) Indirect monetary policy from 1980.

The extent of financial innovation was somewhat muted in the early periods as a result of the bank and building society cartels, which sought to protect their own positions. Notwithstanding this the period up to 1971 did witness circumventive financial innovations in the form of disintermediation to by-pass credit ceilings.

Up to the late 1960s there was general consensus that the demand for money was stable, which implied that the control of the money supply would have a direct effect on the economy (Pawley 1993:13-14). Because there was some evidence of a direct link between the rate at which the money supply (M3) changed and the rate of change in nominal income and hence prices, it was believed that prices could be managed by controlling monetary growth. It was further believed that this money supply growth could best be controlled through the interest rate. The use of the interest rate or the competitive approach was seen as more effective than direct controls which had been largely ineffective and were seen to stifle competition. This led to the CCC approach. However, contrary to what had been believed, once direct controls were lifted, there was a rapid growth of M3 because of reintermediation. This led to a reintroduction of direct controls and debt management by the authorities in the form of the "corset".

The "corset" was a direct control in which targets were set for the rate of growth of interest bearing deposits. Where targets were exceeded, penalties, which operated on a progressive scale, were incurred. Use of the "corset" led once again to disintermediation. The shortage

of deposits (liabilities) led to a more restrictive lending policy on the part of the banks. During the period that the "corset" was in operation the banks were effectively prevented from competing with the building societies for mortgage business. The abolition of exchange control in 1979 assisted in the demise of the corset because the banks were now able to bypass its controls by operating in the Euromarket. Direct monetary controls coupled with some liberalisation had led to circumventive financial innovation.

Although the Bank of England continued to target growth of the M3 aggregate until 1987, in reality the sole instrument of monetary policy became the use of short term interest rates that were to be kept within an unpublished band (Pawley 1993:54). This created a common control instrument for both banks and building societies. With the use of a common instrument to control monetary growth any advantages enjoyed by the building societies over the banks ceased to exist. The removal of direct controls permitted the banks to compete directly with the building societies in the property mortgage market with the basic motive of making a profit (Pawley 1993:55). Banks had never seen the building societies as major competitors because in the first instance they were never in competition in the same market for lending, and in the second funds deposited with the building societies were deposited by the latter with the banks anyhow. Once both types of institutions began to compete for the same mortgage lending business they also began to compete for deposits. As soon as the banks were able to compete with the building societies on mortgage lending the cartel began to break down. The building society cartel formally ended in 1983. At the same time the government began to compete for deposits through the issue of public debt. Pawley (1993:57) maintains that the government had a competitive advantage over both the banks and the building societies because they had neither liquidity or capital adequacy requirements and were able to arrange favourable tax arrangements for the benefit of depositors.

In the United Kingdom the supposed money-income relationship in the M3 aggregate during the 1970s broke down after 1980. The velocity of M3 which had been relatively stable since the end of the Second World War began to fall. The Governor of the Bank of England placed the blame for distortions in the growth of M3 since 1980 on financial innovation and the deregulation of financial markets (Leigh-Pemberton 1986:500). There was a decline in velocity after 1980 which resulted from the falling away of credit rationing in the case of

households and an increase in inter-company borrowings in the case of firms. Borrowings by both households and firms were not always provided directly by the banking system. These changes to the overall financial system created difficulties in defining the monetary aggregate. Such changes embodied the combining of both transactions and investment features into single new financial instruments. The creation and the use of new financial instruments broadened the range of liquid assets. The liquidity of existing financial instruments also increased because of the development of secondary markets and the fall in transaction costs; the latter as a result of the use of technology.

Financial innovations, specifically the payment of market determined interest rates and the transactional facilities offered on investment type accounts, changed the money-income relationship. This was because depositors' investment and transactional requirements could be accommodated through a single type of account (Pawley 1993:90). Pawley states (1993:99) that "Individuals will no longer feel obliged to hold separate accounts for pure transactions funds and for funds held in readiness for making investments or as part of a financial investment portfolio." The change in the motive for holding liquid funds was responsible for breaking the link between money and income. Because transaction balances are now being held either for expenditure or for investment purposes, increases in the money supply may not lead to an increase in income. This is because this increase may simply represent a wish to hold interest earning balances only as an investment (Pawley 1993:100). He states further (1993:105) that financial innovations which provide substitutes for the traditional functions of money obstruct the process of monetary control.

The problems that were being experienced in monetary control were increasingly being ascribed to changes in the structure of the financial system. The Radcliffe Report had already in 1959 stated that it was impossible to define money because there was no clear criterion as to what assets formed a part of the money supply. If the money supply cannot be defined then it is impossible to attempt to control it. In 1982 the Bank of England (Quarterly Bulletin 1982:6 in Pawley 1993:190) stated that "...the gathering pace of innovation under the spur of competition is leading to new channels of finance and new financial instruments." He maintains further (1993:22) that in the face of rapid financial innovation the use of the traditional instruments of monetary policy may, in fact, be

inadequate.

In the United Kingdom the Competition and Credit Control system and later the "Corset" were abandoned as a result of avoidance and circumvention of these regulations by the financial institutions evidenced by bouts of disintermediation and reintermediation. "The monetary confusion illustrated more conclusively than any academic argument is able to do the distortive and ultimately self-defeating effects of quantitative credit controls" (Dennis 1981:285). That money targeting is impossible to achieve is evidenced by the Bank of England's dropping of M3 as a targeted aggregate in 1987.

4.4 Financial innovations in France

France is one of the countries where financial innovations are of the "public" type (de Boissieu 1987:218), where the authorities either introduce or permit those innovations which they deem will best serve the economy. Raymond (1992:83) states that " The active role played by the authorities in the process of financial innovation and modernisation of the financing of the economy is without doubt one of the most striking features of the experience in France." The French authorities' objectives in taking a direct part in financial innovations was aimed at improving the management of government debt by the creation of markets to handle short-term negotiable securities, the strengthening of financial competition with a view to the better allocation of resources together with a reduction of the cost of intermediation and the creation of a unified capital market.

At the beginning of the 1980s monetary policy in France was effected by way of direct instruments, such as restrictions on bank lending and ceilings on the rate of interest payable on deposits. French banks were *permitted* by the authorities to circumvent these controls if it suited the latter. An example of this was the increase in the issue of bonds, by the banks, as an alternative source of finance. The authorities encouraged this alternative because it permitted them to keep within the agreed monetary growth targets by mopping up excess

liquidity.[27]

In a move toward deregulation, new instruments, such as the use of commercial paper, were permitted from 1985. Control had also been exercised on the maximum rate of interest which could be paid, by banks, on deposit accounts. The authorities permitted these controls to be bypassed through the establishment of short-term mutual funds and short-term open ended unit trusts. Deposits lost by the banks in this manner flowed out of the defined money aggregate and into the equities and securities markets (Raymond 1992:86). These financial innovations prepared the way for the dropping of monetary targeting in 1985.[28] Because bank credit and savings were allowed to compete with non-bank intermediaries the focus shifted to the interest rate. The French experience cannot be equated to that of the United States or the United Kingdom because of the public nature of financial innovations involved. What it does serve to illustrate however, is that financial innovation may be used by the monetary authorities to attempt to direct events in a certain way. The changing structure of the financial system, sanctioned by the authorities, resulted in an intended shift away from bank intermediation and a move from direct credit controls to the use of the interest rate as the major instrument of monetary policy. In this instance the monetary authorities used financial innovation to change the nature of monetary policy, shifting the focus from direct controls to indirect controls based on a competitive approach.

4.5 Financial innovations in Germany

As in the case of France, financial innovation in Germany are also of the "public" type (de Boissieu 1987:218). Dudler (1987:160) states that institutional arrangements in Germany differ from those in what he terms the "Anglo-American" countries, and that these have "...prevented new waves of innovation from reaching the financial markets in Germany." These "institutional arrangements" refer to the structure of the financial system in that

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[27]The growth of this form of finance is evidenced by the fact that bond issues increased from 65,5 million French francs in 1979 to 111,7 million in 1980, 310 million in 1985 and 345 million in 1986 (Raymond 1992:86).

[28]The basis for monetary targeting in France was the M2R aggregate which was made up of cash, cheque deposits and other liquid and other short term liabilities of the banks.

country. This structure has ensured that almost all non-bank financial intermediation, with the exception of the insurance industry, has been eliminated (Dudler 1987:167). There is very little scope for financial disintermediation because of the wide range of services available through the banks. Furthermore supervision and regulation occur through a single regulator. Other features of the financial system have created a preference for the use of cash in day to day payments making the control of the physical money stock easier to achieve. Another feature of the financial system is the relatively limited use of the cheque.[29]

It is the relationship between the German banks and the Bundesbank which allow, as in France, for "public" innovation. This relationship is, according to Dudler (1987:168), "...one of mutual trust...with the Deutsche Bundesbank and (the banks) are reluctant to introduce new instruments or practices into German financial markets if this is likely to provoke raised eyebrows at the central bank."

4.6 CONCLUSION

Up to the end of the 1970s the general monetary policy approach in both the United States and the United Kingdom tended to be of the direct type. This was a result of the widely held view that developed, specifically in the United States, as a consequence of the Depression, that government regulation and supervision were necessary to ensure economic stability (Cargill & Garcia 1985:2). Historically most direct controls date back to the Depression in the 1930s and the Second World War which followed shortly thereafter (1939-45). Davis and Lewis (1992:134) believe that an "...enthusiasm for centralised planning and detailed controls...grew out of wartime emergency powers." An air of caution governed banking activities in the years following the Depression. This subdued the tendency to competition. Competition only came back into its own "...as memories of the crisis faded and a new

[29]The extensive use of cheques for payments in the United States of America and the United Kingdom and to a lesser extent in France, allows for the creation of demand deposits within agreed client overdraft limits by account holders in these countries. Germany has always favoured the Giro system which eliminates the ability of the depositor to "create" his own balances. In 1988 the total value of cheques as a percentage of all cashless transactions was 48% for the United Kingdom, 15% for the United States of America, 9,4% for France and only 3,7% for Germany (Payment Systems Worldwide 1994:17). In South Africa, in 1995, cheques represented 87,7% of all cashless payments (South African Reserve Bank 1996:S13).

generation of bankers came to the fore..." (Davis & Lewis 1992:137).

As economic performance deteriorated during the 1970s regulation and supervision was held responsible for the decline. The tendency in most countries has been to remove direct controls. The most popular type of direct control were restrictions on interest rates and over the extent of consumer credit. The barriers which traditionally existed between banks and other financial institutions have disappeared or been relaxed (Davis & Lewis 1992:131).

Deregulation consists of a move away from a direct or regulatory approach to a market based or competitive approach. Regulators are often loath to surrender their powers resulting in a drawn out deregulatory period according to Davis and Lewis (1992:136). Regulatory controls often perform a number of functions. Liquidity ratios which were imposed for monetary policy purposes were used to increase depositors' confidence in banks. Interest rate ceilings, whose purpose was based upon monetary policy considerations was often used to restrict "excessive" competition for deposits. Restrictions on bank lending, intended to control excessive monetary growth was used as a substitute for a bank's own prudence (Davis & Lewis 1992:137).

Notwithstanding the change to the indirect approach the monetary authority still requires to measure the effectiveness of the instruments used to enable these to be altered as circumstances dictate. While the instrument itself became market driven the reporting requirements of the monetary authorities to monitor its effectiveness retained an element of directness which ensured that circumventive financial innovations remained. This was also true of the targeted monetary aggregate. If it was too narrow it led to apparent wild fluctuations of the money supply as balances shifted from an account type that lay within the defined monetary aggregate to one which lay outside of the definition.

The ability of the target to be effectively reached is also dependent upon its composition. The example is the difference in approach between those used in the United States and the United Kingdom. In the former, M1 was used as the target. This is a narrow aggregate. Changes in the holding of financial assets, which may dramatically reduce the extent of the M1 aggregate (for example where the asset has been included in say the M3 aggregate),

resulted in wide fluctuations in the relationship between M1 and economic activity. In the United Kingdom where the broader M3 was used, changes in asset holdings, while they may well be from M1 to M3 did not really affect the aggregate itself, but only its composition. Here the relationship between the aggregate and economic activity remained more stable. Mayer (1992:25) has suggested the targeting of either M2 or M3 in the United States and believes that financial innovations have strengthened the case for adopting the broader aggregate (1992:29).

In its traditional sense money does not bear a rate of interest, while non-monetary financial assets do (Pawley 1993:89). This non-interest attribute was the key determinant for including non-interest bearing cheque deposits in the definition of money. Financial innovation creates money substitutes. Such substitutes may well, as noted in this chapter, earn interest. However the common feature that non-interest bearing money (and demand deposits) and interest bearing money substitutes possess, is its use in transactions as a medium of exchange. The use of technology to move funds and the development of products which have made for easy interchangeability between demand deposits (transaction balances), and interest bearing deposits (speculative balances) have reduced the costs and the time involved in converting one asset to another (Moses 1983:6). Keynes's three motives for holding money, may be seen to reflect the various monetary aggregates:

(a) transactional balances in the form of cash (fiat or commodity money),

(b) precautionary balances in the form of demand deposits (cheque accounts),

(c) speculative balances in the form of interest bearing deposits or investments (savings accounts, term deposits, bonds).

The creation of money substitutes by financial innovation has rendered this distinction meaningless. The payment of interest on demand transaction type deposits blurs the distinction between transaction and investment balances (Pawley 1993:89).

The various financial innovations that occurred, resulted in the fact that today certain

transactional balances and a large segment of the broadly defined money supply bears interest (Davis & Lewis 1992:140). This represents a fundamental change to monetary theory and its implications for monetary policy. In monetary theory the rate of interest represents the level of market interest on medium and long term deposits, on the one hand, and the difference between the return on money, including demand deposits (which was normally zero) and other forms of assets on the other. If there is an interest rate on money (including demand deposits) and this is flexible, it renders the potential for discretionary monetary policy ineffective. If money has a zero interest rate the entire adjustment to interest rates is channelled to non-monetary assets. If money attracts a flexible interest rate, monetary policy may be rendered ineffective because that rate may neutralise any incentive to move balances into other assets such as savings or bonds. The M1 money aggregate was considered to be the money component (currency and demand or cheque deposits) on which no interest was paid.

As the apparent stability of the relationship between money and economic activity has broken down, more and more countries have given up using monetary aggregate targeting as an instrument of monetary policy. The Federal Reserve Bank stopped using the M2 indicator in favour of interest rates, while the Bank of England stopped using monetary targets in 1985. Only the Germans still appear to retain any faith in the significance of monetary aggregates although they have been criticized for this stance (Chrystal & MacDonnald 1994:73). However this faith has to be seen in the light of public financial innovation, where all changes within the financial system are subject to the approval of the monetary authorities, as opposed to private financial innovation.

The main implications of financial innovation for monetary policy is that it has led to the abandonment of the targeting of the monetary aggregate in favour of targeting the short term interest rate. It appears that deviations in the monetary aggregate are today an accepted consequence of financial innovation.[30] There are also views that the method used in

But what about future

[30]The minutes of the meeting of the Federal Open Market Committee of 28 March 1995 reflect the following (Federal Reserve Bank 1995:692): "M2's weakness in February partially reflected an unwinding of temporary increases in January of its volatile components, including demand deposits, overnight repurchase agreements and overnight Eurodollars; the weakness also appeared to be associated with depositor efforts to obtain higher returns by shifting funds into market instruments."

measuring the monetary aggregate itself is a part of the problem and that a change to these methods could effectively neutralise unanticipated fluctuations in the monetary aggregates.[31]

[31]Chrystal and MacDonnald (1994:106) maintain that "The credibility of the narrow simple sum aggregates has universally been undermined by the spread of financial innovation." They believe that the current "simple sum" method of measuring the monetary aggregate should be replaced by a "weighted" method.

CHAPTER FIVE

FINANCIAL INNOVATION AND MONETARY POLICY : THE SOUTH AFRICAN EXPERIENCE

5.1 OVERVIEW

This chapter commences with a brief examination of the financial system that operates in South Africa followed by an examination of monetary policy in this country since the Second World War. In a broad sense monetary policy in South Africa may be examined in two periods, the division of which occurs in 1985, and the period which is marked by the publication of the De Kock Commission report.

The major financial innovations that have taken place in South Africa during the period under review are then examined. The implications that these had for monetary policy and the effects of monetary policy on financial innovation are also discussed.

The objective of this study had been to understand the implications that financial innovation has for monetary policy in South Africa. In addition future directions that financial innovations in South Africa may take, given the changing face of the global financial system, are examined.

5.2 THE FINANCIAL SYSTEM

In examining the financial system in South Africa the focus will remain on the banking sector because of their ability for deposit expansion by way of bank lending and investment through the credit multiplier. The various types of deposits that banks accept from the public represent a substantial portion of the money supply which is significant from a monetary control and hence monetary policy point of view (Absa Bank Ltd 1995:69). Financial innovation implies changes to the financial system either within or outside of the formal regulated financial structure. Other non-bank intermediaries, whose activities fall outside of the ambit of the banking sector, have also been taken into account where appropriate. While

there is no longer any statutory categorisation of banks they may still be functionally subdivided into commercial banks, merchant banks and general banks.[1]

The history and the development of banking in South Africa has closely followed that of the United Kingdom. The reasons for this were largely political and relate to the growing British dominance in all spheres of political and economic activity in southern Africa during the nineteenth and first half of the twentieth centuries. This was reflected in the dominance of the so-called "Imperial" banks in this country. The banking and financial system developed initially from the requirements of the agricultural sector during the nineteenth century and diversified in time into the mining, commercial and industrial sectors of the economy. Banking soon became concentrated in the hands of a few major, foreign owned, banks with substantial branch banking networks which covered the entire country.[2]

Another major component of the financial sector was the building society movement. Building societies developed from the British concept brought to this country, by settlers from that country during the nineteenth century. It was aimed at assisting its members in acquiring their own homes. Building societies were governed by their own legislation first

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[1]This categorisation relates to the functions that each type of bank performs. The following is a broad overview of these functions. The functions are not specifically limited to individual type of banks but are given as an indicator of their main areas of activity (Goedhuys 1982:51-68).

> Commercial banks are regarded as banks whose main business consists of the acceptance of deposits which are withdrawable by cheque, draft or order. Their main functions consists of accepting deposits, making credit available, handling payments and collections through the clearing system, rendering sundry financial services, dealing in foreign exchange and assisting in the execution of monetary policy.
>
> Merchant banks function in the corporate market where they have specialised in providing corporate finance, investment advice and portfolio management.
>
> General banks specialise in the area of providing finance for hire purchase and leasing.

[2]The first privately owned bank was the Cape of Good Hope Bank which was established in 1837. By 1861 twenty eight similar locally based banks existed, mainly in the Cape Colony. There had been a tendency toward the "unit banking" system similar to that in the United States. 1861 saw the arrival of the first of the London based or "Imperial" banks with the establishment of the London and South African Bank. The Standard Bank of South Africa was established in the following year. The London banks' objective was to take over the small local banks and to develop a network of branches across the country. This they succeeded in doing. By Union in 1910 there were only seven separate commercial banks left (Goedhuys 1982:56-57).

introduced during the 1930s. During the 1980s the building societies gradually moved away from the original concept of being the repository of the "small mans'" savings. Increasingly they became involved with institutional savings. This shift created instability because of the potential sudden withdrawal of major deposits. Because the activities of both banks and building societies had begun to converge, the building societies were permitted, through changes in legislation, to convert from mutual societies to public joint stock companies and were also permitted to do business with other public companies. Banks and building societies were now required to meet the same cash reserve and liquid asset requirements. The only difference that remained was that the building societies held an advantage in the raising of short term funds because of certain tax privileges which applied to these deposits and the fact that their capital requirements differed from the banks. These two differences fell away in 1990: the first by way of the announcement of the phasing out of tax free investments and the second by the introduction of new legislation (Verhoef 1994:89-90).

Banking legislation in South Africa dates from the Currency and Banking Act of 1920. This was subsequently replaced by the Banking Act of 1942 which in turn was replaced by the Banks Act of 1965. Building societies fell under the Building Societies Act of 1986. Today the legal basis for the operation of all financial institutions is vested in the Banks Act of 1990. Under this legislation all financial institutions, including the banks and the building societies, were brought under a single legislative umbrella, the Deposit-taking Institutions Act. This created a standard legal framework for all deposit taking activities.[3]

While the banking system is essentially first world, it has been recognised that the bulk of the population are not. The Mutual Banks Act was created as the statutory framework to accommodate community based banking structures.[4] Informal banking, by way of various

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[3]The name of the legislation was subsequently changed back to the Banks Act (Act 94 of 1990) in 1993 through the Deposit-taking Institutions Amendment Act (Act 9 of 1993). The effect was that the words "deposit-taking institution" were replaced by the word "bank" (South African Reserve Bank 1994b:42). All institutions registered under this legislation are now known as banks.

[4]The Mutual Banks Act, 1993 (Act 124 of 1993) was implemented on 3 January 1994. The Act allows for banks without equity capital to create the opportunities for broader community involvement in the provision of credit and savings mechanisms. The legislation is intended to bridge the gap between the formal and informal financial sectors. It is also intended to furnish the broader community with first world banking

(continued...)

societies and associations, such as the "stokvel", is a popular means of providing accessibility to finance to a large segment of the Black community. The South African Reserve Bank have designated such activities as falling outside of the definition of a bank.[5]

Banking in South Africa is still highly concentrated. The commercial (or clearing) banks of which there are currently eleven[6] are dominated by four majors or the "big four" who essentially control a substantial portion of the market.[7] The banking structure remains essentially oligopolistic notwithstanding the abandonment of any form of price collusion.[8]

5.3 MONETARY POLICY

According to Meijer (1995:363) monetary policy in South Africa has gone through four stages of development since the Second World War. These covered the immediate post war period; the period from the mid-1960s to the end of the 1970s; the 1980s and the present monetary policy regime. Each is dealt with briefly below.

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[4](...continued)
facilities while being directed toward community based activities (South African Reserve Bank 1994b:43). As at the end of 1994 two mutual banks had been registered; Community Bank and GBS Mutual Bank.

[5]In terms of regulations promulgated under the Banks Act (South African Reserve Bank notice 2173 of the 14 December 1994), a stokvel falls within the definition of a group of persons with a common bond. Such groups may undertake certain functions of limited financial intermediation while remaining outside of the ambit of the definition of a bank. The exemption is subject to specific rules and controls.

[6]Although this categorisation no longer exists there are currently eleven banks who permit the withdrawal of demand deposits by cheque. These are; Absa Bank Ltd, Bank of Lisbon International Ltd, Bank of Taiwan (South Africa) Ltd, Boland Bank Ltd, Cape of Good Hope Bank Ltd, First National Bank of Southern Africa Ltd, French Bank of Southern Africa Ltd, Habib Overseas Bank Ltd, Nedcor Bank Ltd, The South African Bank of Athens Ltd and The Standard Bank of South Africa Ltd. As at the end of 1994 there were thirty five finally registered banks and four provisionally registered banks in South Africa (South African Reserve Bank 1995:51-52). These thirty nine banks represent the amalgamation of all the previous bank categories.

[7]The four major banking groups are Amalgamated Banks of South Africa (Absa), First National Bank, Nedcor and the Standard Bank of South Africa. In terms of balance sheet structure these four banks made up 77% of the entire banking sector at the end of 1994 (South African Reserve Bank 1995:26).

[8]Up to 1983 the banks colluded on prices which were recorded in the "Register of Co-operation" (ROCO). This arrangement which started with a "gentleman's agreement" in the 1920s effectively created a cartel which was tolerated by the Reserve Bank (Munro 1988:116). ROCO represented the formal arrangement of the clearing banks' cartel. Under a cartel firms face their own self-imposed internal controls which would tend to stifle any form of competitive innovation.

5.3.1 The post war period (1945-1965)

The period following the war was one in which the world generally followed a "Keynesian" approach which favoured the use of fiscal policies for stabilising the economy. This was specifically evident during the late 1950s and the 1960s (De Kock 1981:322). Inflation, which was low, was not seen as a problem. Additionally little importance was attached to either the money supply or to the level of interest rates as having either any significance or influence on the economy. Rather, a low interest rate was seen to favour the propensity to spend and consequently in maintaining a high level of employment and stable prices. High interest rates were seen by some as inflationary.

In South Africa the banking system was relatively simple. Until the late 1950s this consisted of the South African Reserve Bank and the four dominant commercial banks with which the central bank maintained a close relationship and from whom it enjoyed a high level of co-operation. The banking sector were therefore easily open to influence through "moral suasion". The only other policy instruments used were rare variations of the Bank rate which directly influenced changes in the banking sector's deposit and lending rates. The approach to monetary policy was based on the assumption that "money", defined then as consisting of bank notes, coin and the demand deposits with the commercial banks, was a distinctive form of financial asset. Money played a strategic role in determining the total demand for goods and services. Furthermore only the Reserve Bank in conjunction with the commercial banks could "create" money.

The early 1960s saw the rejection, in South Africa, of the views propounded overseas at that time that money was not a unique asset, but rather one of a series of financial assets. Similarly rejected was the view that commercial banks were not really different from other financial institutions.[9]

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[9]The overseas views had come from Gurley and Shaw in the United States and the Radcliffe Commission in the United Kingdom. The South African rejection came in the "Report of the Technical Committee on Banking and Building Society Legislation." The report was published in 1964 and its recommendations formed the basis for the 1965 Banks Act. The Committee had been appointed in 1961 to advise on complaints about unfair competition between different kinds of banking institutions and the building societies. The Committee recognised for the first time the existence of "near-money". Near-money is deposits or other forms of financial

(continued...)

5.3.2 The mid-1960s to the late 1970s

This period saw a worldwide rise in the level of interest rates together with persistent inflation. Initially inflation rates were low. However these escalated to high levels toward the end of the period being examined. These conditions affected South Africa as well. The authorities intervened heavily in the functioning of the market through a series of direct controls aimed at keeping interest rates below market levels and containing credit expansion. These controls set an upper limit on the rate of interest that could be paid on deposits and the amount of credit that could be granted by each bank, which included specific conditions for consumer credit (Goedhuys 1994:152).[10]

The rise in the level of interest rates created the opportunity for new non-commercial banks or "near-banks" to enter the market, taking interest bearing deposits from the public at large. New demands also arose for various forms of personal finance to meet the requirements of the better-off section of the local population leading to the creation of specialist hire-purchase banks. The ensuing concerns regarding the rise of these "near-banks" and the creation of "near-money" led to these institutions being brought within the ambit of the monetary authorities control and supervisory functions.[11] The building societies were not regarded as being able to create money and were not considered to have any significant "monetary" powers. Monetary policy was exercised on the basis of influencing the banks' total holdings of prescribed liquid assets, whose ratio could be varied by the authorities. Further concern about the effectiveness of the use of liquid asset requirements led to the introduction of direct controls. These were aimed at the ability of the banks to extend credit and to create money.

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[9](...continued)
assets which could be converted rapidly into money. To accommodate this expanded concept of money other deposit-taking institutions such as the merchant banks, discount houses hire-purchase and general banks were brought within the ambit, and direct control of banking legislation (De Kock 1981:324).

[10]The imposition of interest rate control effectively prevented depositors earning a "real" rate on their savings. This encouraged a move to other types of instruments and investments which had the potential to beat inflation, such as unit trusts. Credit ceilings were in force from 1965 to 1972 and then again from 1976 to 1980 (Absa Bank Ltd 1995:73).

[11]These concerns were expressed in the 1964 report of the Technical Committee on Banking and Building Society Legislation (Republic of South Africa 1964). Their findings and recommendations led to the Banks Act and the Building Societies Act (Acts no. 23 and 24 of 1965).

5.3.3 The 1980s

The publication of the De Kock Commission's report in 1985 represents the watershed between the use of direct monetary policy and indirect monetary policy.[12] Up to 1985 monetary policy in South Africa had been very much of the direct control variety. In broad overview, in its final recommendations, the Commission proposed that South Africa adopt a market-orientated monetary strategy rather than one of direct monetary controls. The Commission stated their belief that the ultimate objectives of monetary policy should be:

(a) The relative stability of the price level which they referred to as the primary objective

(b) Equilibrium in the balance of payments

(c) Optimal and stable economic growth

(d) A high and stable level of employment

The Commission pointed out that monetary policy alone could not achieve these objectives, and that fiscal policy also has a part to play. The Commission recommended the adopting of the use of target rates for aggregate monetary growth and recognised the "close interrelationships between money supply, interest rates and exchange rates" (Republic of South Africa 1985:A47).

In terms of a more market related monetary policy the Commission made specific reference and recommendations in four areas:

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[12]The Commission was appointed in 1977 under the Chairmanship of the late Dr G de Kock. As its terms of reference it was required to investigate and make recommendations in respect of both the monetary system and monetary policy in South Africa. The Commission was requested to pay special attention to; the money market, interest rate policy (which includes public debt management and open market operations), credit ceilings, cash reserves and liquid asset requirements, the "grey market", and the interaction between monetary policy and the balance of payments. There were several other issues which included investigating the exchange rate policy and its attendant aspects and also the position of the smaller banks.

(a) Public Debt Management

It was envisaged that the policy of the monetary authority should extend beyond merely ensuring that the State did not borrow excessively to cover deficits, but to actively borrow with the purpose of neutralising any excess liquidity in the market.

(b) Open Market Operations by the Reserve Bank

In similar vein to (a) the Reserve Bank should resort to selling or purchasing financial assets to either mop up or increase liquidity, as the case may be.

(c) Reserve Bank discount and accommodation policy

The discount rate at which the Reserve Bank will extend assistance to the discount houses was an important element in determining the extent to which they were prepared to lend, and in turn the banks are prepared to borrow. The level of this rate had an important effect on the rates at which both the discount houses and, in turn, the banks extended credit. This rate played an important part in containing credit demand and so to having a direct effect on the economy.

(d) Reserve Bank intervention in the spot and forward exchange markets

The commission, while proposing a complete relaxation of exchange controls, still recommended a policy of "managed" floating to stabilise the exchange rate should fluctuations be of a nature which could harm the national interest.

The Commission specifically listed various "direct" or non-market orientated policy instruments of which they were not in favour. These were credit ceilings, deposit rate control and import deposits. They also saw only a limited role for moral suasion. Accordingly the Commission recommended the abolition of virtually all direct control measures and a lowering of reserve requirements "...to levels dictated by normal

consideration of banking prudence" (Meijer 1995:367).

To facilitate the South African Reserve Bank's influence over the interest rate the Commission advocated the use of the "classical" cash reserve system (Meijer 1995:367). Under the "classical" cash reserve system the central bank aims at setting the *cost* of additional reserves instead of trying to control the *amount* of the banks total reserves.[13] This latter system is known as the "American" cash reserve system (Republic of South Africa 1985:182-183). The Commission stressed the need for high interest rates on occasions. In line with the Commission's recommendations low profile monetary targeting was introduced in 1986 for the M3 money aggregate.[14] The target was never regarded as rigid.

There was no sudden transition between the two approaches. Rather the changes that took place should be seen in the context of the phasing-out, over time, of the one approach and the phasing-in of the other.

5.3.4 Present day monetary policy

Current monetary policy in South Africa is centred on the interest rate. In keeping with the policies of most central banks the general level of interest rates forms the operational variable of the Reserve Bank. The Bank's principal policy instrument is its refinancing policy (Meijer

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[13]It must be remembered that the Reserve Bank does not "set" interest rates. It does however influence these rates subject however to the fact that such rates in general are market determined through supply and demand. This influence is carried out through the rate at which the Reserve Bank is prepared to assist or accommodate the banks. This rate is known as the Bank Rate. The Reserve Bank also became active in the money market both in terms of providing assistance through the "discount window".

[14]The broad money supply or M3 is made up of the following components (South African Reserve Bank 1994a:S23):

M1A	-	Coin and banknotes in circulation plus cheque and transmission deposits of the domestic private sector with monetary institutions.
M1	-	M1A plus other demand deposits held by the domestic private sector.
M2	-	M1 plus other short-term and medium-term deposits held by the domestic private sector.
M3	-	M2 plus long-term deposits held by the private sector.

1995:371).[15] The Bank rate is "made effective" through open market operations. This is dependent on the banks' being "locked in", in one way or another to Reserve Bank accommodation, which according to Meijer (1995:372) is the permanent situation in the case of the larger banks.

Monetary targeting, which was introduced in 1986, is still practised, but not in terms of any strict money-growth rule. The targets are today called guidelines which are set annually for the M3 aggregate. The guidelines specify upper and lower limits to the annual percentage growth in the quarterly average of the M3 aggregate in the fourth quarter, in relation to the actual average of the M3 aggregate in the fourth quarter of the previous year.[16] These guidelines are neither a target, a forecast nor a projection for money growth. In the words of Meijer (1995:369) "...the guideline range for growth in M3 should rather be seen as the Reserve Bank's view of the *most appropriate* rate of monetary expansion in the guideline year..." The Reserve Bank has only experienced partial success in achieving its guideline targets. Where they have been achieved this may well have been simply fortuitous (Meijer

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[15]Refinancing policy or discount policy revolves around the Reserve Bank's decisions to extend credit to a limited number of local institutions who have qualified in advance for such facilities. Usually such credit facilities are for the express purpose of enabling the borrower to make good a shortfall in cash reserves, either in the form of reserve balances or "vault-cash" (Meijer 1995:376). The refinancing mechanism used by the Reserve Bank is centred on the Bank rate and changes to this rate. The Bank rate has a major influence over short term interest rates on the South African money market. Changes to the Bank rate may have *direct* and immediate effects on the demand for money which, in turn, will affect the private sector's money holdings. Changes to the Bank rate have a more powerful but more *indirect* effect on the demand for money because of the effect that it has on domestic expenditure; real economic activity and on changes in the level of prices (Meijer 1995:371).

[16]The original concept of money supply "targets" was changed to money supply "guidelines" in 1990. The guidelines and the results for the period 1986 to 1995 are reflected in the table below (South African Reserve Bank 1993:B97, South African Reserve Bank 1994a:14 & Stals 1995:25).

Year	Guideline for M3 growth		Result
	Lower limit	Upper limit	
1986	16 %	20 %	10.1 %
1987	14 %	18 %	15.5 %
1988	12 %	16 %	26.5 %
1989	14 %	18 %	23.5 %
1990	11 %	15 %	12.0 %
1991	8 %	12 %	14.7 %
1992	7 %	10 %	8.8 %
1993	6 %	8 %	5.6 %
1994	6 %	9 %	14.6 %
1995	6 %	10 %	-

1995:370).[17]

In a statement on the money supply guidelines for 1994, the Governor of the South African Reserve Bank has made it clear that since the introduction of money supply targeting in 1986 results have been mixed (Stals 1994:25). This he believes to be a result of the Bank's approach to money targeting being one of using discretion rather than any form of fixed and overriding "money rule".[18] Factors such as interest rates; the exchange rate and the level of foreign reserves all have to be taken into account.

Although the tendency in current South African monetary policy is centred on the use of indirect policy instruments this does not preclude the use, occasionally, of selected direct policy instruments.[19]

5.4 FINANCIAL INNOVATIONS

Financial innovation in South Africa is examined in this section within the framework that has been used in the previous section. In section 5.3 monetary policy has been described in terms of the four stages of development set out by Meijer (1995:363). Furthermore financial innovation is related in this section to the monetary policy approach current during these phases. Whether such financial innovation was circumventive or competitive is also examined.

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[17]Addleson warns of the danger of relying on targeting firstly because this has not proved to be effective in other countries and secondly because targets need to be credible to be effective. He states (1992:52-53) that, "If there is persistent over- and under-shooting of targets they will cease to have any significance."

[18]Discretion and targeting are virtual contradictions in terms (Addleson 1992:53).

[19]On 20 February 1995 the Reserve Bank made certain changes to the monetary policy measures then in force. Among the policy measures involved was the announcement that each banking institution will be supplied individually with quantitative guidelines as to the maximum credit that it should extend to the private sector for the remainder of 1995 (Stals 1995:25-29). The Reserve Bank has also invoked moral suasion by requesting banks to co-operate in complying with these guidelines, failing which it warns that further restrictive measures may become necessary.

While the Reserve Bank states that it "...remains averse to direct controls on the amount of bank credit extended by banking institutions", and that it acknowledges that such controls frustrate the working of the market system and creates distortions, it has seen fit to re-introduce a direct control measure and that individual and presumably confidential guidelines have been set for each bank.

5.4.1 Financial innovation in the post war period (1945-1965)

The Banking Act of 1942 subjected the commercial banks to monetary controls because they were seen as the main intermediaries in the financial system. This gave the non-commercial banks such as hire-purchase and general banks, merchant banks and the building societies an advantage which they used in developing new approaches to finance, such as hire-purchase, leasing, personal loans and later credit card facilities (Munro 1988:122).

It was this period that also saw the gradual development of the money market. Prior to 1949 there was no outlet for short term funds in South Africa. Commercial banks were the main intermediaries between short term lenders and borrowers. Lenders received no interest on short term deposit facilities (current or cheque accounts) while the needs of borrowers was covered by way of overdraft.[20] The commercial banks had large balances of available short term funds which were placed on the London money market. Market conditions were not representative of economic and credit conditions and consequently "...the Reserve Bank had difficulty in influencing monetary and credit conditions." (Absa Bank Ltd 1995:72).

To overcome this difficulty the National Finance Corporation (NFC) was established in 1949 with the objective of creating a South African money market. The NFC provided interest bearing call money facilities. These funds were invested in government and private sector debt. Subsequently the first merchant bank, Union Acceptances Ltd, was established in 1955 to provide acceptance credit facilities which led to the development and use of the bankers' acceptance. In 1957 the Discount House of South Africa Ltd was established, which created a market for the discounting of bills.

The discount houses were a specialised form of bank[21] which were formalised under the

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[20]There was however a swing away from non-interest bearing deposits to those paying interest. Munro (1988:121) states that in 1950 non-interest bearing deposits amounted to 89,1% of the total deposits of the commercial banks. By 1980 this share had dropped to 39,2%. She ascribes this movement to depositors becoming more sophisticated and interest conscious in an inflationary environment.

[21]The discount houses, as a specialised intermediary between the commercial banks and the central bank, were unique to both the United Kingdom and to South Africa. In the United Kingdom the discount houses, who

(continued...)

Banking Act of 1956. A discount house formed a separate category of bank with specific functions. In terms of the act they were restricted to taking deposits from banks, building societies, mining houses and insurance companies. In return the discount houses enjoyed specific privileges which permitted them to discount "eligible" assets at the South African Reserve Bank at an interest rate lower than that charged to the commercial banks. The objective of the discount houses was to create a centralised market to cover the net cash shortfalls and surpluses that had to be accommodated by the South African Reserve Bank (Goedhuys 1994:149-150). The original function of the discount houses, as the link between the Reserve Bank and the banks, has been dispensed with. Today they function as competitors with other financial intermediaries.

The financial instruments which emerged during this period were the use of interest bearing call deposits (1949); the bankers' acceptance (1955) and the negotiable certificate of deposit (NCD) in 1964.[22] This period can be seen as one in which the financial system continued to develop. The innovations introduced were in the main competitive and were aimed at fostering an active market in financial assets. Specific monetary policy controls were not really a feature and consequently there was no need for circumventive financial innovations.

5.4.2 Financial innovation from the mid-1960s to the late 1970s

The link between direct monetary policy and circumventive financial innovation in South Africa has been widely acknowledged (De Kock 1981:328 and 333 and 1985:2; Republic of South Africa 1985:A4-A6; Munro 1988:118-119; Franzsen 1983:121). According the De Kock Commission Report (Republic of South Africa 1985:A5) circumventive financial innovations in the form of disintermediation resulted from four specific direct monetary policy controls. These were:

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[21](...continued)
have been authorised as banks under that countries Banking Act of 1987, still operate. Their function, as was the case in South Africa, is geared to maintaining the liquidity of the British banking system by acting as intermediary between the Bank of England and the banks (Bank for International Settlements 1993 a:414).

[22]NCD's were first issued in South Africa in 1964 (Faure 1995:135). NCD's grew from R3 million in the first quarter of 1965 to R104 million at the end of 1967. They reached R2 billion in the first quarter of 1981, R16 billion at the end of 1989 shrinking to R12 billion at the end of 1993 (Faure 1995:137).

(a) Credit ceilings which forced unsatisfied borrowers to seek alternate sources of short term credit such as seeking loans directly from lenders. These controls were in force between 1965 and 1972 and again between 1976 and 1980.

(b) Deposit rate controls were imposed between March 1965 and July 1966; December 1969 and August 1970 and March 1972 to March 1980. Deposit rates were kept below market rates which diverted deposits to more attractive investments that existed outside of the banking system.

(c) The Bank rate, according to the De Kock Commission Report, had been maintained at too high a level for most of 1979 and 1980. It must be remembered that until February 1982 the prime overdraft rate of the commercial banks was linked directly to the Bank rate. Both borrowers and lenders turned to cheaper forms of credit outside of the banking system. Because banks were subject to credit ceilings their demand for deposits was weak. Similarly lenders were able to find better returns in the non-bank market.

(d) Cash reserve and liquid asset requirements for banks, which had been abnormally high between 1969 and 1982, had seriously reduced the competitiveness of banks because it widened the gap between their deposit and lending rates. Borrowers and lenders could be accommodated at more favourable interest rates outside of the banking system.

These factors resulted in borrowers and lenders being accommodated outside of the formal banking sector, through a variety of means such as direct borrowing and lending, off-shore finance for local borrowers and the placing of investments with and borrowings from non-bank financial intermediaries.

Financial innovation in South Africa during this period was constrained by similar factors to those that were at work in the United Kingdom and which were examined in chapter four. These inhibiting factors included (1) the existence of a banking cartel, which effectively stifled competition and (2) the similarity between bank and building society deposits.

The Banks Act of 1965 recognised bank-like institutions or "near-banks" and brought them under greater control. The new legislation gave the authorities wide powers. The controls imposed by the authorities in terms of the new act were direct. They were imposed by the authorities on the rate of interest that could be paid on deposits, the extension of credit by banks and the necessity for banks to hold liquid assets in a very high ratio to their deposit liabilities. These controls created an imbalance in financial markets.[23] Rising levels of

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[23]The events of this period clearly illustrate Kane's (1981:335) view of the regulatory dialectic that was discussed in chapter two. The actions of the authorities and the circumventive actions that flowed from these during the period under review are illustrated below;

1965 The monetary authorities imposed ceilings on the extension of credit by commercial banks as well as the rates that could be paid on deposits. These ceilings "...(were) circumvented...by increasing their (the banks) investments in the private sector, as opposed to lending." (Munro 1988:118). As borrowers sought alternative accommodation the effectiveness of monetary policy was reduced (de Kock 1985:7).

1966 Deposit rate control lifted.

1967 Further controls were imposed under Proclamation R184 (Government Gazette Extraordinary 1809 of 11 August 1967) which granted wide ranging powers to the Reserve Bank who could "...with the approval of the Minister of Finance by notice in the Gazette to make orders and rules which, directly or indirectly relate to matters which affect or have any bearing upon credit extension by banking institutions." These powers were used to set limits to the expansion of bank credit. The reaction was additional growth in non-monetary financial activities by banks because these fell outside of the ambit of monetary policy.

1968 Although the Limitation and Disclosure of Finance Charges Act (LADOFCA) of 1968 had been intended as an anti-usury measure it effectively became an instrument of monetary policy because it imposed interest rate ceilings.

1969 Deposit rate control re-introduced.

1970 Credit ceilings were extended to all banks. Deposit rate controls were lifted again (August).

1972 Changes to the Banks Act extended direct controls in the form of requiring all banks to maintain cash reserves. The powers of the Reserve Bank to raise both the cash reserve and liquid asset requirements was increased. Deposit rate controls were also re-imposed. Because it had become evident to the authorities that credit ceilings did not work they were abolished in November. The response of the banks was intensive competition amongst themselves for deposits. Excess demand for deposits by the banks against a limited supply of funds led to a rise in interest rates.

1973 Deposit rate controls were tightened yet again. Munro (1988:118) states that this was ineffective as "...once again entrepreneurial banking skills appear to have been applied to exploiting loopholes in the rules and regulations."

1976 Credit ceilings were re-introduced.

1978 "Transmission" accounts were permitted by the authorities. These accounts formally allowed for the

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inflation made deposit rates negative. This led to circumventive innovation in the form of disintermediation as investors took refuge in direct investment with borrowers at rates which were "real" and in investments in the "grey" market where "near-banks" took over the intermediation function.[24] The formal banking sector also took part in disintermediated activities as a means of protecting their business from the effects of the activities of the "near-banks". This took the form of various "off balance sheet" investments and facilities offered to clients. These off-balance sheet instruments took the form of; a bank acting as "unofficial" intermediary between two of its clients; arranging "off-shore" finance; the use of repurchase agreements and the bankers' acceptance.[25] Alternatively other forms of investment became popular such as the growth of the Mutual Fund (also known as Unit Trusts) industry, specifically after the equity market recovered at the end of the 1970s (Standard Bank Fund Managers 1995:110).[26] The first South African Mutual Fund was launched in 1965.

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[23](...continued)
creation of an interest bearing deposit which was withdrawable on demand and which could be used directly to make payments to third parties. This type of deposit was very similar to cheque account except that, unlike the cheque account, interest was payable on credit balances. Prior to that date increasing use had been made of savings accounts as demand deposits because banks were reluctant to impose the seven day notice period required for "large" withdrawals. The creation of transmission accounts was an attempt by the authorities to separate true savings from accounts used for day to day transaction purposes. Effectively the authorities had given legality to a circumventive financial innovation. They had deregulated a specific aspect because they could not control it. Transmission accounts were similar to NOW (negotiable order of withdrawal) accounts in the United States.

1980 Credit ceilings and deposit rate control lifted.

[24]Whenever the difference or the "spread" between bank deposit and lending rates became unusually wide, as a result of high liquid asset requirements or when banks ran up against their credit ceilings or when the administered deposit rate fell below the market rate "disintermediation" would take place. Non bank intermediaries or brokers would, for a fee, undertake various "intermediary" functions. This included putting deposit holders directly in touch with potential borrowers; raising funds for borrowers by selling securities to depositors against an undertaking to repurchase these at an agreed future date and price. Inter-company borrowing and lending also took place outside of the South African banking system.

[25]A distinction must be drawn between disintermediation which does not affect the monetary aggregates, such as when a bank facilitates a direct loan between a borrower and a lender and disintermediation where funds actually leave the banking system or facilities are provided outside of the banking system, such as the arranging of off-shore finance or bankers acceptances.

[26]Initially mutual funds related specifically to the equity market. Mutual funds can, and do, cover a wide range of investments which includes the money and bond markets. In recent years they have also specialised in specific equity sectors such as industrials, gold, mining etc.

Where conditions for disintermediation became unfavourable because interest rates became positive once more or where various restrictions were lifted, the reverse process would occur as funds flowed back into the formal banking sector. This is referred to as re-intermediation. The Reserve Bank responded to disintermediation by making "...repeated efforts through ever more complicated decrees published in the *Government Gazette* in the 1960s and the 1970s to suppress what it termed the grey market or illegal banking, but to no avail." (Goedhuys 1994:152).[27]

From a monetary policy point of view disintermediation resulted in the transaction velocity of money increasing for a given money supply. Re-intermediation on the other hand caused the money supply to increase in the normal manner. This fluctuation between the money supply and the velocity of circulation resulted in distortions in monetary statistics.[28]

Inflation, direct controls by the monetary authorities and disintermediation created a highly competitive market for deposits among financial institutions. To cater for this changing environment commercial banks diversified from the narrowly focused providers of short term credit to comprehensive financial intermediaries. This change was induced by both

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[27]Repurchase agreements were regarded by the Registrar of Banks as an undesirable practice until 1978. It is noteworthy that in their report the De Kock Commission noted that while they were "...aware that such agreements may indeed sometimes be used by banking institutions for the express purpose of circumventing the financial requirements of the Banks Act", they held the view that such agreements were legitimate and useful money market instruments (Republic of South Africa 1985:51-52).

In similar vein a type of off-balance sheet finance, in the form of the guaranteeing of intercompany loans by banks was prohibited in the 1972 amendments to the Banks Act (Republic of South Africa 1985:221).

Bankers' acceptances were not always encouraged. Between 1973 and 1977 these instruments were not acceptable for re-discount and their use by the discount houses was subject to specific limits as well as the proviso that it had to be linked directly to trade finance (Republic of South Africa 1985:21). Today the bankers' acceptance has become an accepted financial instrument despite its specific exclusion as acceptable collateral for Reserve Bank purposes because the latter "...has often felt uncomfortable in the presence of the fact that liquid and not-so-liquid bankers' acceptances can be 'manufactured' by the banks by means of conversions of loans and advances on their lending books." (Meijer 1995:383).

[28]This can be illustrated by using Fisher's quantity equation $MV = PT$ (where M is the quantity of money, V is the velocity of circulation in a given period, P is the level of prices and T is the number of transactions in the same period). For a given value of PT, MV must have the same value. However M and V can be any value as long as their product remains equal to PT. The equation will still hold despite the volatility of both M and V. The effectiveness of monetary targeting is based on the supposition that the velocity (V) is stable over time.

regulatory controls and by increased competition. It took the form of the development of new financial instruments, the provision of other financial services such as leasing, insurance and factoring and the acquisition of interests in businesses outside of the financial sector (Munro 1988:122).

5.4.3 Financial innovation during the 1980s

Deposit rate control as well as ceilings on the granting of credit were abandoned in March and September 1980 respectively. Liquid asset requirements, the ratio of which had gradually been increased during the 1970s, reached a level of 58% of short term deposits in 1980 whereafter it was gradually reduced reaching 22% in 1985 (Goedhuys 1994:152). As direct controls were reduced or abandoned, deposits which had previously moved outside of the banking system began to find their way "back" into the formal financial system. This re-intermediation was chiefly as a result of financial intermediaries becoming more competitive in the interest rates that they were able to offer. The instruments created initially as part of the circumventory innovative process remained, simply becoming a part of the fabric of the enlarged financial structure.

During this period the functioning of the discount houses "...was gradually eroded..." (Goedhuys 1994:150) and was supplanted by the development of an interbank deposit market, or money market. This process was encouraged by the formation of large banking groups and expansion of their respective treasury departments. The banks in effect "internalised" their cash management operations on the money market. This took over the function of the discount houses. The privileged position of the discount houses had long irked the banks and with the creation of their own interbank deposit market they were able to convince the Reserve Bank that the former were no longer necessary (Goedhuys 1994:150).

This development of an interbank market was assisted by changes in the manner in which the Reserve Bank undertook liquidity management. These changes included;

- the expansion of the Reserve Bank's trading in government stock as a means of influencing the cash position of the market

- reducing the liquid asset requirements that the banks had to comply with,

- allowing for the inclusion of vault cash in the calculation of a bank's statutory reserves,

- the granting of overnight loans direct to banks (after 1985)

- the ending of preferential re-discounting facilities to the discount houses.

These deregulatory measures allowed the re-intermediation into the financial system of both investment balances and credit extension which had left it during periods of direct control. However even the move toward a more market orientated approach did not see all disintermediated operations move back into the formal banking sector. Many practices continued or may even have been expanded (Brummerhoff 1986:435-436). The factors contributing to this situation were:

- Continuing variances between market related interest rates and the limitations still imposed under legislation such as LADOFCA, or by the Reserve Bank, where on occasions it was felt that accommodation rates were out of step with the market.

- Changes in liquidity within the financial system which had the effect of forcing holders of surplus units to seek alternative investment opportunities. Where excess liquidity exists market related rates will tend to fall, which, in turn, will result in funds moving out of the market into other investment opportunities which could include disintermediated credit extension offering higher rates (and a higher risk).

- The requirements of the market may better be served by new instruments, procedures and/or practices. The increasing use of derivatives in recent times is an example of this.

- The cost of borrowing can also play a significant part in the development of new practices. As an example large companies may set up their own internal "bank"

which optimises on the source and application of their funding requirements and effectively bypasses the banking sector in the process.

These factors are fully in keeping with the nature of financial innovation that we examined in chapter two.

With the decrease in regulation the financial industry was able, at this time, to give greater focus to competitive innovations. These manifested themselves by increasing competition and the diversification of the financial industry in providing new services rather then staying narrowly focused on taking deposits and making advances. These new services were able to provide new sources of profit to the banks and in this way countered any restrictive effects of monetary policy as well as the high cost of modern technology both of which had the potential to decrease bank profit margins.

One aspect of this period was the intense competition that arose between banks and building societies. The banks began to compete aggressively with the building societies in the area of mortgage lending while the building societies began soliciting deposits from the corporate sector.[29]

5.4.4 Current financial innovations

Current financial innovations have tended to follow the same pattern as may be observed

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[29]During the 1970s building societies became aware of the fact that they could offer similar services to those of the commercial banks but, because of lower reserve requirements, at a lower cost. This competition with the banks led to the building societies over-extending themselves in the fairly liquid conditions that were in evidence between 1978 and 1980. By 1982 the five largest building societies "...showed a loss of almost R300 million over the previous two year period" as a result of tighter liquidity (Munro 1988:127).

Ultimately this situation led to a series of take-overs by banks of building societies as well as various mergers (Absa Bank Ltd 1995:74). The building societies ceased to exist in their traditional form. Their original function had been to promote home ownership through the savings of their members. They enjoyed certain privileges such as the ability to provide tax-free investments, exemption from cash reserve requirements and the need to maintain a lower level of liquid assets than were the banks. During the 1980s the banks and the building societies began to compete in each others "territories". The banks moved aggressively into the home loan market while the building societies began to take deposits from public companies and corporations. The result was that the authorities came to consider both types of institution as one and the same and in terms of the De Kock Commission recommendations their respective controlling legislation were aligned with each other with the building societies privileges slowly being phased out (Goedhuys 1994:150-151).

throughout the rest of the world, specifically as they relate to instruments aimed at reducing risk such as derivatives.[30] In the absence of direct forms of control financial innovations are generally competitive. However circumventive financial innovations still remain, such as those designed to overcome existing forms of direct control.

Direct controls still exist in many forms. By way of illustration two such controls and the circumventive financial innovations used to by-pass them are cited.

- Banks are, in terms of the Banks Act, required to report on all aspects of their activities, on a regular basis to the Registrar of Banks. Banks often use the frequency and the basis on which their reporting figures are extracted to modify their true positions to their own advantage. As an example, where reporting was based on say month end figures, a bank may do as it pleases during the month, as long as its figures on the reporting date are within the required limits. To defeat such circumventive practices reporting is often required on *daily average* figures. Banks may even by-pass these requirements by creating "intra-day" exposures which are brought back in line by the end of the day (Roberds 1993:7).

- Current practice permits South African banks to include their vault cash as part of their minimum reserve balance requirements (Absa Bank Ltd 1995:79). Banks can and do increase their vault cash holdings by installing their own safes on the clients premises. This enables the bank to give its client value for cash deposits on the day of deposit in the safe, even though this may occur after the bank has closed its doors for business. By increasing liquid assets through vault cash, banks free other assets from being tied up in reserves. The increase in the minimum reserve requirement from 1% to 2% early in 1995 has increased the scope for this type of service.

Continuing deregulation has favoured many of the innovations that have come into being in

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[30]As derivatives are aimed at reducing risk they may be seen as a means of enhancing (or maintaining) profits and are therefore regarded as a competitive financial innovation.

the past.[31]

From a technology point of view South African banks followed overseas practice to create new products and services. The 1980s saw the advent of the ATM, and the development by the banks of services which allowed their clients to initiate transactions from home or office. In 1988 there were 3555 automated teller machines (ATMs) operative in South Africa which that year handled 300 million transactions (Strauss 1989:4). Presently South Africa has some 4800 ATMs (Datt 1995:23).[32]

Banks in South Africa have invested heavily in technological infrastructure both within individual organisations and at an industry level. The mechanisation of cheque processing and electronic payments have a long history in South Africa which stretches back to 1975. At the retail level the introduction of ATMs allowed for the automation of virtually all banking transactions. This includes cash withdrawals, deposits, third party payments, inter-account transfers, bank statements and balance enquiries. The sharing of the use of ATMs by the various financial institutions was achieved by the establishment of ATM sharing and switching networks. For the corporate client most banks today offer personal computer based facilities which enables them to make payments, obtain banking information and undertake various cash management functions. Smaller commercial clients are provided with these services on videotext based applications. Most South African banks are members of S.W.I.F.T. (Society for Worldwide Interbank Financial Telecommunication), which allows for the transmission of financial information and payment instructions at both a domestic and international level. The use of technology has increased the range of financial services offered on the one hand, and has helped expand the number of service points or "branches"

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[31]As an example, income tax on dividend earnings was scrapped in 1990 while interest earnings became subject to certain concessions. These concessions serve to favour certain investment mediums whose returns are based on the items subject to the concession, such as equity based Mutual Funds as well as interest bearing deposits. More recently unit trust management companies have been permitted to include derivative instruments in their portfolios (Standard Bank Fund Managers Ltd 1995:117).

[32]Compared with the current use of ATMs in Europe, South Africa would rank sixth out of nineteen countries. Only Germany, Spain, the United Kingdom, France and Italy have more machines available (Payment Systems Worldwide 1995:37-40).

on the other.[33]

The increasing use of technology in banking has led to changes in the manner in which the public make payments. These changes have a direct effect on the various monetary aggregates. The increased availability and use of both ATMs and credit cards has led to a decline in the level of banknotes and coin demanded by the public. This is evidenced by the rise in the income velocity of banknotes and coin between 1990 and 1994. The changing structure of non-cash payments indicates that the volumes of electronic payments has risen by 176% and credit card usage by more than 60% between 1988 and 1994, while cheque volumes have remained basically static (van den Heever and Flint 1994:36-37).[34] The changes in value of various elements of non cash payments is illustrated in table 5.1.

Table 5.1 COMPONENTS OF NON CASH PAYMENTS

(R million)

Year	Credit Card Purchases	Cheques	Electronic Transactions
1991	10,756	4,168,406	184,467
1992	12,185	5,069,969	263,332
1993	13,882	5,565,853	445,061
1994	15,909	5,584,773	593,552
1995	19,230	5,292,930	721,201

Source: South African Reserve Bank 1996:S13

Today banks offer a wide range of financial services which range from demand deposits to sophisticated long term investments. The payment of interest on all account types including

[33]ATMs and terminal located on a client's premises can be effectively regarded as a branch of the financial institution. When compared to the traditional "bricks and mortar" branch such new branches are both inexpensive and highly efficient.

[34]The use of income velocity of circulation as an indicator of structural change in monetary aggregates is discussed in section 5.5.

cheque accounts, has become the norm. Client borrowings are accommodated through overdrafts, fixed term loans, personal loans, revolving credit facilities, bankers acceptances and sophisticated variable leasing arrangements.

5.5 THE IMPLICATIONS FOR MONETARY POLICY

Studies overseas have begun to look at various empirical aspects of financial innovation, specifically its underlying causes. While the evidence often is not conclusive, it is accepted that financial innovation occurs as a result of factors which are not always easy to identify and that the subsequent effects are similarly difficult to measure. The numerous studies, such as those referred to in chapter four make this clear. The basic problem is that, in a dynamic real world situation, it is extremely difficult to separate the numerous factors that are at play in the innovatory process. These factors include regulation, competition and market conditions and the various theoretical variables enumerated in chapter three. In the South African experience there is a lack of any comprehensive empirical study of the perceived causes of financial innovations and their effects on the one hand and the effect of specific financial innovations on velocity and monetary aggregates on the other. This is an area for further research.

Hurn (1991:405-422) has done some work in this field, seeking to find some causality and predictability in the relationship between both money and prices and money and income, given that the rationale of monetary targeting is dependent upon such links. He cautions that his results should be treated with circumspection given the difficulties in identifying cause and effect relationships. De Wet, Jonkergouw and Koekemoer (1995:577-597) have developed a model of monetary policy in South Africa. They have sought to test the effects of policy actions on the money supply, examining such factors as changes to the bank rate, increases in open market operations, changes in public debt management and intervention in the foreign exchange markets. Their work tends to confirm these changes did have the theoretically expected effect on the supply of money.

With the exception of some data on the velocity of circulation, and the recent work of De Wet, Jonkergouw and Koekemoer virtually no empirical research has been undertaken in

South Africa. This is not surprising given the relative "newness" of the subject matter and the acknowledged difficulties in determining direct cause and effect relationships. Given the problems in securing meaningful empirical evidence only two avenues remain open. On the one hand it is possible to look at what evidence velocity figures tend to suggest while on the other on can at least "speculate" about the possible effects.

In earlier sections of this chapter we examined the various monetary policy stances that have been taken in South Africa since the end of the Second World War and also the financial innovations that have come about in terms of their nature and cause. It is clear that the type of monetary policy approach, either direct or indirect, does have an effect on the type of innovations, be they circumventory or competitive, that come about. During the period that direct monetary policy measures were applied in South Africa numerous circumventive financial innovations were introduced. These have generally been referred to as "disintermediation" and have been documented in section 5.4. This section looks at the influence that these financial innovations had on the effectiveness of monetary policy.

Disintermediation is simply the by-passing of the normal intermediary function provided by financial institutions. Where this occurs as a means of getting around regulatory constraints this is "circumventive" financial innovation. Where disintermediation is not a result of regulatory factors it will simply be a "competitive" financial innovation. Because there is a movement of balances out of (and into) the formal banking sector this can be detected in the monetary aggregates which are published by the Reserve Bank.

Sharp and sudden changes to the "velocity of circulation" can be indicative of causes which lie beyond changes to GDP and the money supply. While it is accepted that other factors such as interest rate movements can also play a part in velocity changes, the measurement of sudden changes could be used as a rough indicator of the effects of certain financial innovations.[35]

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[35]It must be noted that where the financial innovation does not result in a change to the monetary aggregate there will be no change to velocity. The technique serves only as a rough guide to the fact that "something" has occurred.

In the deliberations of the De Kock Commission notice was taken of changes in the income velocity of circulation for the various monetary aggregates in use during the period 1960 to 1985. These are reflected in table 5.2 and figure 5.1.

It was noted that while there had been various short-term, cyclical and other variations over the full period those over the preceding ten years had been so volatile so as to create a misleading impression of both the monetary aggregates and of monetary policy. These sharp fluctuations in velocity have been ascribed to disintermediation and re-intermediation over the period. As already noted the causes of disintermediation during this period was the various direct monetary policy instruments in use at the time. However the period covered also witnessed a tremendous rise in the price of gold. The fact that this may have been responsible either fully or in part for changes in velocity can not be discounted.

Between 1976 and 1980 there was a marked increase in the income velocity of the M1, M2 and M3 monetary aggregates. It is argued that this increase was a result of a sudden surge of disintermediation during this period. As we have seen in section 5.3 this period corresponded to the increasing level of circumventive financial innovations that were introduced as a result of the tightening of direct monetary controls. From 1980 to 1985 the velocity of circulation declined sharply and this, it is argued, may be attributed to the transition from the previous reliance on direct policy instruments to the more indirect or market based approach and was indicative of re-intermediation.

Circumventive financial innovations in the form of disintermediation that was evident in South Africa up to approximately 1980 "...greatly reduced the effectiveness of monetary policy" (De Kock 1985:7). Notwithstanding the clear understanding of the consequence of direct monetary policy controls, it is disappointing to note the re-imposition, early in 1995, of such direct controls. These took the form of confidential guidelines to each bank, under threat of further sanctions (Stals 1995a:25-29). Should these controls affect the ability of the banks to conduct their business in a manner which satisfies their shareholders, it will only trigger further circumventive financial innovations.

Financial innovation appears to have wide ranging implications for monetary policy and its

Table 5.2

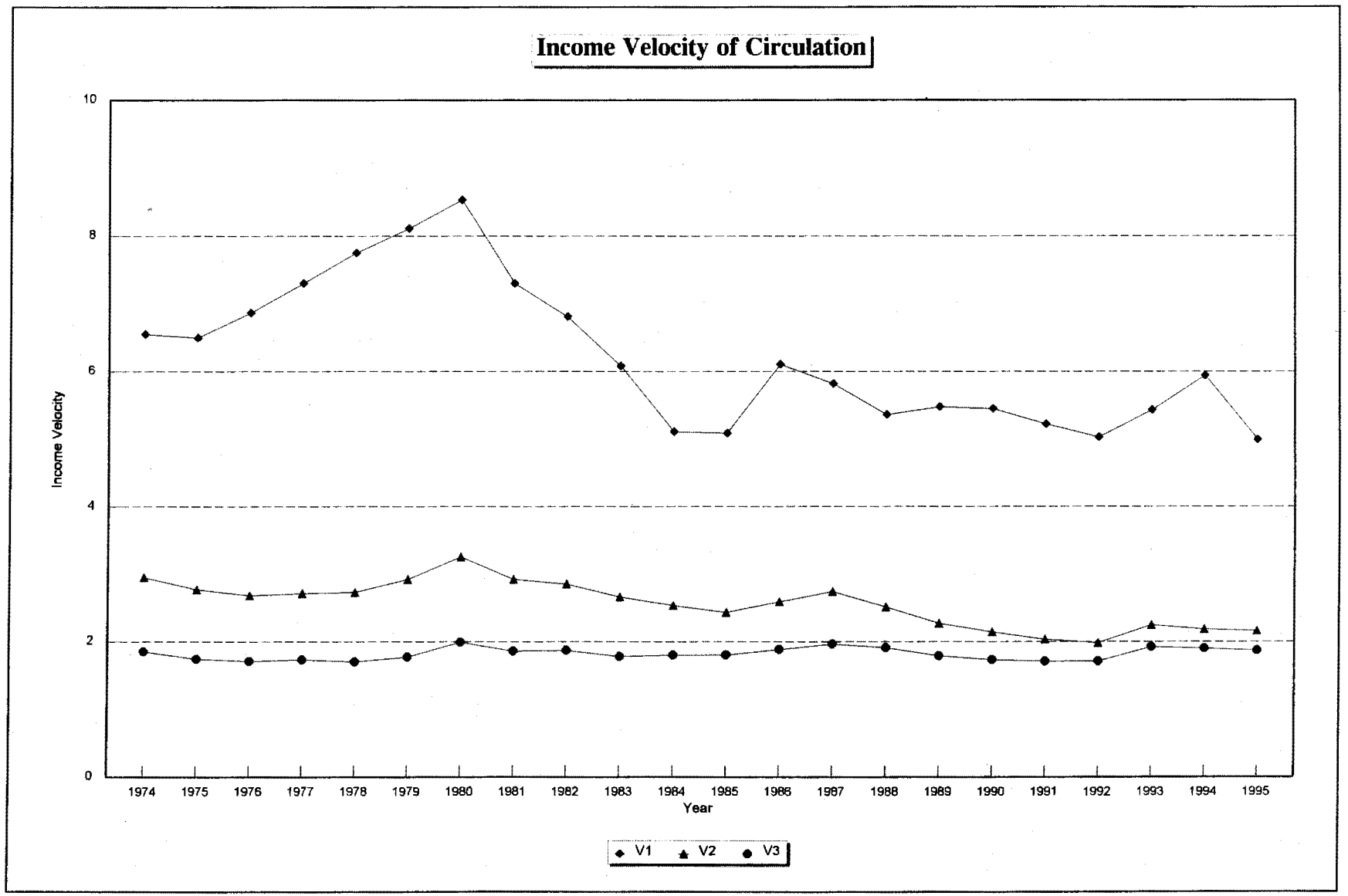
South African income velocity of circulation of money for the period 1974 to 1992 for the M1 (A), M1, M2 and M3 monetary aggregates.

The M1 (A), M1, M2 and M3 monetary aggregates have been designated V1 (A), V1, V2 and V3 respectively.

Year	V1(A)	V1	V2	V3
1974	-	6.55	2.95	1.85
1975	-	6.50	2.77	1.74
1976	-	6.87	2.68	1.71
1977	-	7.30	2.71	1.73
1978	-	7.75	2.73	1.70
1979	-	8.11	2.92	1.77
1980	11.53	8.53	3.25	1.99
1981	10.92	7.30	2.92	1.86
1982	11.61	6.81	2.85	1.87
1983	11.64	6.08	2.66	1.78
1984	11.22	5.11	2.53	1.80
1985	11.78	5.09	2.43	1.80
1986	10.97	6.11	2.59	1.88
1987	10.13	5.82	2.74	1.96
1988	9.85	5.36	2.51	1.91
1989	10.13	5.48	2.27	1.79
1990	10.29	5.45	2.14	1.73
1991	9.69	5.22	2.03	1.71
1992	9.10	5.03	1.98	1.71
1993	9.09	5.43	2.24	1.92
1994	8.26	5.94	2.18	1.90
1995	8.22	4.99	2.16	1.87

Source: South African Reserve Bank 1993: B98 (for period 1974-1992)
South African Reserve Bank 1996:S131 (for period 1993-1995)

Figure 5.1


Income Velocity of Circulation
Income Velocity
10
8
6
4
2
0
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
Year
V1
V2
V3

effectiveness. The following is an overview of some of its actual and possible effects.

5.5.1 Direct control measures results in deregulation

In South Africa the extensive use of direct monetary policy measures led to deregulation. This is evidenced by the plethora of attempts by the authorities to impose and modify various direct controls that were ultimately abandoned (Goedhuys 1994:152) and by the acceptance of the De Kock Commission recommendations and their implementation.

Davis and Lewis (1992:130) maintain that deregulation of financial institutions and markets has come about as a result of validating prohibited activities that the regulators could not control. Circumventive innovations have in effect forced the abandonment or the watering down of financial regulation. In effect all forms of direct controls have either been removed or reduced. With deregulation has also come a more competitive approach in which the interest rate, determined by market forces, has come to play a major role.

Deregulation has also widened the field of financial intermediaries, who need not be banks. Just as banks have moved into the supplying of non-banking services such as insurance and securities trading, non-bank financial institutions as well as retailers have begun offering financial services such as credit cards (Gowland 1991:103-104). The effectiveness of monetary policy may well be negatively affected because these new participants in the financial system fall outside of the purview of the monetary authorities.

Similarly the role of banks as the providers of credit has declined because financial innovations have introduced new types of instruments by which means credit can be obtained. Because of this declining role in credit provision the ability of the monetary authority to influence the economy has been weakened (Thornton & Stone 1992:95).

5.5.2 Money substitutes reduce the demand for transaction deposits

Financial innovation has reduced the demand for transaction deposits by creating money substitutes (Hadjimichalakis 1982:29). The basis under which demand or cheque deposits are

held have undergone major changes in the past few decades. Demand deposits at banks did not attract interest. In the United States this was because of a specific prohibition on the payment of such interest was directed at protecting banks by reducing their costs (Hadjimichalakis 1982:19). Elsewhere, as in the United Kingdom and in South Africa, interest free demand deposits were offered in return for the free transactional services that the banks provided (Pawley 1993:78). In effect these deposits were not free because the banks bore the costs of the transactional service.

Because financial innovation has reduced the distinction between transaction deposits and investment, or speculative deposits it has made it easier for the public to undertake transactions. Transaction and investment deposits can be one and the same so reducing the public's reliance on transaction balances. It will also have the effect of reducing the effectiveness of monetary policy because the balances may be more readily transferred into near-money assets (Moses 1983:5-6). South Africa has also followed this trend and, as noted in this chapter, the payment of interest on cheque accounts and the easy substitutability of transactions and investment balances has become a feature of local financial services.

5.5.3 More efficient banking procedures may increase velocity of circulation

A continuing rise in operating efficiency within financial institutions could result in fewer financial assets being required to maintain a given level of productive activity (Moses 1983:9). This means that while the aggregate value of money could remain static, its velocity increases. In effect money will "go round" faster, which in turn implies that notwithstanding any successful attempts by the monetary authorities to contain money growth, the increased level of transactions may alter the money-income relationship (velocity). Increased operating efficiency specifically through the use of technology has also resulted in a reduction of costs both for holding various financial assets and for transactions in which one asset is exchanged for another (Thornton & Stone 1992:96; van den Heever & Flint 1994:36-37). This cost reduction can increase the pace of financial innovation as further efficiencies are sought.

5.5.4 The effective control over the broad definition of money has been reduced

The development of new financial instruments, which do not form a part of the narrow monetary aggregate, diverts funds away from demand deposits so reducing the demand for them. New financial instruments possess features which unite both transaction and investment qualities into a single asset (Moses 1983:5). This leads to an increase in the liquidity of all financial assets (Gowland 1991:108). The new assets are easily substitutable for the "...traditional 'media of exchange' assets included in M1" (Thornton & Stone 1992:96). Effectively transaction balances are shifted to higher yielding assets which are only accounted for in the broader money aggregates.There is the tendency to target the broadest monetary aggregate, which includes all financial assets. Theoretically this allows for more accurate targeting of the overall money supply. Moses (1983:12) points out that as more and more new institutions and financial instruments fall under the control of the monetary authority so too will effective control become diffused, becoming harder to maintain and less effective in terms of policy control. Because financial innovation increases the liquidity of financial assets by reducing the distinction between transactions and investments, any growth in any measured definition of money diminishes the true growth of that aggregate (Gowland 1991:108). Although the South African monetary authorities still set "guidelines" for M3 growth strong emphasis is placed on the fact that this is not a target (Meijer 1995:369).

5.5.5 Money targeting may be affected

The changing definition of money may make targeting of the money supply harder to achieve. The inclusion of investment (interest bearing) deposits with transaction deposits complicates the targeting exercise further because the aggregate will also be subject to interest rate fluctuations. In turn interest rate fluctuations may deliver inappropriate information to the monetary authorities. As an example a rise in interest rates could be as a result of greater inflationary expectations or an increase in the demand for money or a decrease in the supply of money. While the first two causes may indicate a need to tighten monetary policy the third cause indicates no need for the authorities to take such action (Tamura 1992:102). The South African monetary authorities concede that since the

introduction of money supply targeting in 1986 results have been mixed (Stals 1994:25).

5.6 THE FUTURE DIRECTION OF FINANCIAL INNOVATION

What then of the future? The propensity for new circumventive financial innovations will remain. Requirements of the monetary authority may well trigger new circumventive financial innovations as will the periodic attempts to fine tune monetary policy through specific direct policy measures. Where appropriate financial institutions will continue to initiate circumventive financial innovations to bypass any attempt to limit their objectives of profit maximisation. Circumventive financial innovations will remain as a direct function of direct controls either monetary or regulatory. One may also expect to see a continuance, or even an acceleration, in competitive financial innovations, driven by improving technology and its attendant reduction in operating costs. The general trend in financial systems throughout the world toward the competitive approach is commonly referred to as deregulation. Deregulation implies easy entry into financial markets and it may be expected that as a result of such deregulation, non-bank financial intermediation will increase. This should pose no particular problem to a monetary policy regime based upon indirect controls, aimed at influencing the market rather than trying to direct it.

The Reserve Bank's concerns will also broaden, to embody the need to protect both the public and the financial system, in addition to its monetary policy role. A logical consequence of deregulation may be that future financial innovations could shift from the hitherto focus on financial instruments to financial intermediaries, who may or may not be regulated financial institutions.[36]

5.7 CONCLUSION

Financial innovation and direct monetary policy do not readily mix with each other. By its

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[36]Growing concerns regarding the risks in domestic and international payment systems, and its possible adverse effects on national economies has led to greater involvement by central banks in designing, monitoring and controlling payment systems and financial markets (Bank for International Settlements 1995:211). These issues are also a cause for concern in South Africa, where a national payment system strategy has been produced under the aupices of the Reserve Bank (Stals 1995b:1).

nature financial innovation seeks to upset the order that monetary policy seeks to impose. This immediately creates a dilemma for policy makers which is exacerbated by the pace of financial innovation. The pace of this innovation, be it circumventive or competitive, has increased very rapidly over the past half century.

Theoretical issues such as the inadequacies in defining the monetary base have been accommodated by the rationalisation of legislation which heretofore had only covered banks to embrace all financial intermediaries who deal with the public. This was achieved through the Banks Act of 1990. Although this legislation was aimed at bringing South Africa into line with the Bank for International Settlements risk management requirements (Absa Bank Ltd 1995:76-79), the expansion of the regulatory net which included the building societies led immediately to a more realistic definition of the money supply. The past ten years has seen a dramatic restructuring of the financial system in South Africa (South African Reserve Bank 1993:1). Competitive innovations have been boosted by the process of deregulation which followed the recommendations of the De Kock Commission (Absa Bank Ltd 1995:73-74).

Policy makers are reactive. Only when an innovation has a marked effect on the implementation of monetary policy are steps taken to correct the problem. Invariably this only occurs after a lag. The innovatory process needs to be better understood by policy makers who should be able to respond more quickly to changes.

How banking developed in South Africa since 1965 was both a response and a reaction to monetary policy which had distorted market forces (Munro 1988:113). The events during this period clearly illustrate that direct controls brings about a response from the market which is aimed at their circumvention. The 1965 Banks Act which gave the monetary authorities extensive powers for direct control of most financial intermediaries was by-passed through circumventive actions such as direct inter-company lending and borrowing; the use of repurchase agreements; the extension of acceptance facilities outside of the banking system and the discounting of bank endorsed trade bills. It is telling to recount the comments of the President of the Institute of Bankers, who in speaking on the 1972 changes to the Banks Act noted that "...as long as the volume of bank credit remains restricted whether or not such

restriction is by direct or indirect means, firms and individuals will borrow funds that they cannot obtain from the banks from each other..." As regards interest rate controls he said that "...such controls ought to be removed as soon as circumstances permit, otherwise they will distort the flow of funds and of capital in the economy. What one normally finds is that interest rate controls that are kept for any length of time will in any case be circumvented in one way or another..." Speaking on the issue of competition he remarked that "...the changeover from the credit ceilings to the more indirect form of credit control by means of variable reserve ratios will lead to increased competition amongst the various banking institutions.....The bank that can attract the public's cash will be able to make the advances and so increase its share of the total credit business available." (Morony 1972).

Munro writes (1988:118) that "The banks played a cat and mouse game with the authorities. The bankers argued that under a system of direct controls their ability to lend was determined arbitrarily. Direct controls could never be comprehensive and so distorted the working of the financial system. Careful, strategic monetary planning was lacking and instead the authorities relied on a series of *ad hoc* reactions in response to situations as they arose." and (Munro 1988:119) "Cash and liquid asset reserve requirements adversely affected the cost structure of the banks. The primary responsibility of the banks was to their shareholders, thus continuing profitability and the healthy glow of the balance sheet at the end of each financial year does help to explain why banks sought escape mechanisms through the maize of regulations."

Meijer (1995:367) supports the fact that the relationship between money and national income is altered by financial innovation when he writes, "...deregulation, intensified inter-institutional competition and financial innovation also often meant continuous shifts in the relationship of 'the' money supply to the nominal gross domestic product (i.e, shifts in, and unpredictability of, the income velocity of circulation of 'the' money supply. This contributed to many central banks (but not the Deutsche Bundesbank!) downgrading or abandoning their attempts at formal and explicit monetary targeting." As we have seen earlier Germany presents a special case as a result of both the structure of its financial system and the nature of its financial innovation being public instead of private.

Financial innovation is influenced by the monetary policy approach of the authorities. That this is so is evident form the review undertaken of events not only in South Africa but in other countries as well. Where direct monetary policy is used financial innovations are of the circumventive variety, while the market based or indirect approach allows normal competitive forces to take over in the form of competitive financial innovations.

This study has sought to show that financial innovations which occur for any underlying reason, be it circumventive or competitive, must have an effect on monetary policy. Financial innovation affects the implementation of monetary policy in different ways which are not always easily detectable. Neither are its consequences always as anticipated. In examining financial innovation in the light of monetary policy and the implications of the former on the latter, what is clear is that there is a circular causality. Financial innovations are often born of monetary policy itself such as the direct approach which appears to lead to the genesis of circumventive financial innovations.

Left to its own devises, under a market orientated regime, financial innovation offers the scope to enrich the financial system, making it efficient in the allocation of scarce financial resources, which can only serve to foster economic growth and welfare. However in return for this freedom, monetary policy makers must accept the consequences, such as the distortion of monetary aggregates and the neutralisation of monetary control methods.

This study has demonstrated that financial innovations in South Africa have followed the pattern established elsewhere in the world, both in underlying cause and form. Financial innovation has two implications for monetary policy in South Africa (as indeed for other countries as well).

Firstly, as shown in this study, financial innovation has compelled the monetary authorities to adopt a market based deregulated approach to achieve their monetary policy objectives. From the foregoing study it is clear that financial innovation limits the number of monetary policy instruments that are available to the authorities. Such policy instruments can only be of the indirect variety aimed at influencing either the interest rate or the monetary base to be effective. The preferred instrument appears to be the interest rate because of the

continuing instability of the monetary base as a result of unpredictable velocity changes (Taylor 1995:12). Velocity changes are often an indication of financial innovation at work.

Secondly, because the market based approach seeks to guide and influence the correct borrowing and lending behaviour among financial intermediaries, there will always be the danger of policy makers returning to direct controls to achieve short term objectives, notwithstanding the knowledge that this action may well breed a whole new range of financial innovations.

While it is relatively easy to anticipate circumventive financial innovations, their consequences on monetary policy are not easy to anticipate, save for the fact that they tend to distort the latter's application, often with unanticipated results. That circumventive financial innovations exist has long been established and it is perhaps fitting to end this chapter with the following quotation;

"Non-market-orientated or 'direct' methods of monetary policy, particularly credit ceilings and deposit rate controls, cannot achieve the desired results...This is because they inevitably lead to large scale 'disintermediation' or borrowing and lending outside the banking system, including off-balance sheet lending...These and other similar developments render the direct control methods largely ineffective. They also tend to result in distorted interest rate patterns and in an inefficient allocation of available financial resources thereby harming economic growth and welfare." (De Kock 1981:328)

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