

**POST KEYNESIAN MONETARY THEORY AND ITS IMPLICATIONS FOR
MONETARY POLICY IN SOUTH AFRICA**

by

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ABSTRACT

The theoretical foundations of the Post Keynesian view of money are examined, including the nature of money, role of uncertainty and time, and the use of equilibrium concepts. This provides a backdrop against which the Post Keynesian analysis of interest rates, investment behaviour, inflation and demand determination is presented in a framework of non-neutral money and Keynes' principle of effective demand. A model of the Post Keynesian theory of money is presented, with arguments as to why the IS/LM model of the neoclassical synthesis is considered deficient. The money supply endogeneity view is explored, together with Keynes' finance motive. The open economy case is considered, with emphasis on a small open economy. The monetary policy perspectives of the Post Keynesian camp are examined. The implications for South Africa are considered in respect of money supply targeting, interest rate policy, anti-inflation measures, public debt management, exchange rates and Reserve Bank objectives.

Key terms:

Monetary analysis; nonergodic; endogenous; finance motive; marginal efficiency of capital; monetary equilibrium; principle of effective demand; Post Keynesian; interest rate; exchange rate; monetary policy; Reserve Bank; South Africa.

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INTRODUCTION

Although Keynes' *General Theory* (1936) introduced a new way of viewing the workings of a capitalist economy, many of the insights he developed became diluted in the neoclassical synthesis which became the orthodox economics of textbooks in the 1950s, 1960s and beyond. The rise of monetarism in the 1960s and 1970s, based on the classical quantity theory, fed on the persistent inflationary tendencies exhibited by modern economies, especially since these occurred even in periods of slow economic growth. Mainstream Keynesianism did not seem to have a ready answer to the occurrence of stagflation, and monetarism was able to gain appeal with its relatively simple policy prescriptions of quantitative controls over monetary aggregates through imposition of growth rules. Although various writers (e.g. Kaldor, 1986) have shown that such monetarist prescriptions were not in fact implemented despite the outward support for monetarist principles by the authorities concerned (for instance in America and Britain in the late 1970s and early 1980s), monetarist views continued to have a major influence on economic thinking.

The Post Keynesian school of economic thought arose partly in opposition to monetarist thinking, as well as to neoclassical economics in general and its more recent strands of Rational Expectations and New Classical thinking. It had its roots in the various economic theorists who had continued in the tradition of Keynes (e.g. Joan Robinson, Nicholas Kaldor, Piero Sraffa at Cambridge), but broadened with time to form an increasingly well-defined body of economic theory and insights. Its formal commencement is often placed with the launch of the *Journal of Post Keynesian Economics* in 1978. Economists such as Davidson, Weintraub, Minsky, and Moore have played a formative role in extending and defining the body of Post Keynesian economic theory. They have sought to develop the conceptual framework put forward by Keynes (1936) and to extend its implications to areas of economic endeavour not addressed by Keynes. They have recognised that Keynes' *General Theory* and related writings were obscure in some aspects and open to alternative interpretations. They have adopted views which are at variance with those of Keynes in certain

important respects, for example on the endogeneity of the money supply. They do, however, consider that the central conceptions and insights put forward in the *General Theory* are valid and capture the fundamental interrelationships on which economic theory and analysis of a modern entrepreneur economy needs to be built.

The conceptual framework of Keynes, as further developed and amended by Post Keynesians, has major implications in the field of monetary theory. Keynes' perception of money was one in which monetary variables are integrally involved in determining real economic outcomes; this contrasts directly with classical, neoclassical and monetarist perceptions in which money is regarded as a veil behind which real economic activity takes place, having an impact at most in the short period, but none in the long period. Behind the key role afforded money is the recognition that, in a modern economy, money is best characterised as credit money rather than commodity money, and that the holding of money is closely bound to economic uncertainty and to shifts in the desired timing of expenditure rather than being confined to meeting transaction requirements.

This Post Keynesian conception of money is strengthened by the fact that sophisticated formulations of neoclassical general equilibrium models of the economy have been unable to provide an essential role for money. These models seek to treat money in a similar manner to commodities for which there are interrelated supply and demand curves and for which in principle a price vector can be found such that all commodity markets clear. Money as the n th commodity is typically regarded as the numeraire in terms of which all other commodity prices are expressed. But the end result achieved in general equilibrium remains equivalent to that of a barter economy in which participants have perfect knowledge. Attempts to provide money with an essential role in neoclassical general equilibrium models have led to the curious outcome of money having a restrictive effect on economic activity rather than a facilitating effect.

The difference in thinking on monetary issues between those in the monetarist and neoclassical camp and those in the lineage of Keynes and the Post Keynesians can be traced historically to the Currency School versus Banking School controversy which emerged in the early 1800s. During the nineteenth century, with the expansion of the banking system, there were differing views on whether the quantity of money in circulation needed to be tightly controlled to prevent excessive economic activity leading to inflation, or whether a law of reflux operated whereby any money in excess of requirements would be paid back into the banking system. The latter view was related to a real bills doctrine, in which money is, in general, used to fund the requirements of real economic activity. These historical roots are examined further in Chapter 1 of this dissertation.

Prior to Keynes' writing of the *Treatise on Money* (1930) and the *General Theory* (1936), Wicksell (1898) in particular had put forward a theory of interest rates in which there was an interaction between money rates of interest and underlying rates in the real economy (Wicksell's natural rate). This suggested a connection between monetary variables and the real economy. However, a close examination of the mechanism put forward by Wicksell shows that it is money rates that adjust to the natural rates so that the influence is from the real economy to monetary variables (Rogers, 1989:42). It was primarily with the work of Keynes that a mechanism was put forward in which adjustments in the real economy take place in accordance with monetary variables.

The separation of monetary theories between those in which real economic activities take place without substantive effects by monetary variables in the long run, and those in which monetary variables have a substantive real economy effect in the long as well as short run, are elucidated by the distinction and terms used by Schumpeter (1954) between Real Analysis and Monetary Analysis. Post Keynesian monetary theory is in the tradition of Monetary Analysis, and this is used as the point of departure for examining the theoretical aspects of money in a Post Keynesian framework in Chapter 2 of this dissertation.

A key aspect of Keynes' *General Theory* was the principle of effective demand, through which an economy may operate at a point below full employment, without there being economic forces which draw it toward full employment. The point of effective demand is determined by the interaction of aggregate demand and aggregate supply in which aggregate demand is limited by the wage (and similar) payments made to workers which constitute income. Central to the aggregate demand and supply interaction is the behaviour of entrepreneurs in their hiring, remuneration and investment activities. The interest rate mechanism, operating in conjunction with the marginal efficiency of capital, lies at the core of entrepreneurial investment and expansion decisions in Keynes' framework, and this provides the monetary equilibrium behind the point of effective demand taken forward by Post Keynesian writers.

The credit view of money and principle of effective demand, with economic activity typically below full employment, lead Post Keynesians to a view of inflation in which its underlying causes lie primarily outside the sphere of monetary aggregates. This is one of the respects in which Post Keynesian thinking differs strikingly from that of monetarists, and which has strong implications for monetary policy. The Post Keynesian view of inflation is examined in Chapter 2.

Formal models of macroeconomic theory have been dominated by the IS/LM framework first introduced by Hicks in 1937, which became the essence of the neoclassical synthesis. Although Keynes did not oppose the IS/LM interpretation of his work at the time, most Post Keynesians do not regard the IS/LM framework as providing a suitable basis for depicting a Post Keynesian view. Rogers (1989) sought to adapt an IS/LM model to convey a Post Keynesian view, but other Post Keynesians (e.g. Davidson, 1994) feel that the departure from IS/LM thinking is so fundamental that use of the framework is misleading. In putting forward a simple formal model of the Post Keynesian monetary framework in Chapter 2, the issue of IS/LM analysis is examined.

With Post Keynesians viewing money as primarily endogenous in nature, in contrast to the exogenous view held by monetarists, it is pertinent to examine how the money supply process takes place in the endogenous money view. This is taken up in Chapter 3. Underlying the Post Keynesian view is the notion introduced by Keynes that investment activity, funded by bank credit, is causally prior to saving. Credit advanced for investment is expended by entrepreneurs and becomes income which may be spent on consumption goods or saved. A cash reserve or liquid asset reserve imposed by a central bank is met as a portion of deposit liabilities placed with the central bank through the credit creation process rather than serving as a quantitative restriction on money supply aggregates. Instead, it is interest rates which, as a price in determining liquidity preference and the extent of investment to be undertaken, influence the extension of credit and thereby monetary aggregates.

The finance motive, introduced by Keynes only after the *General Theory* in response to criticism, has been taken up by Davidson (1994) and other Post Keynesians as an important aspect of the money supply process. It is examined in Chapter 3, especially in relation to endogenous monetary expansion and its implications for investment activity. It forms a current aspect of Post Keynesian monetary discussion, as witnessed for example by Carvalho's recent paper on its role in capital formation (Carvalho, 1997). As a motive for holding money to meet planned autonomous (investment) expenditure, it complements Keynes' more widely recognised three motives relating to transactions, precautionary and speculative holdings.

Keynes (1936) was concerned primarily with a closed economy, in order to present his arguments without the additional complexities introduced by international transactions. Writers in the Post Keynesian camp have sought to extend his precepts to open economy issues. Davidson (e.g. 1982, 1994) and Dow (e.g. 1986, 1993) in particular have put forward Post Keynesian analyses relating to international monetary flows. These views of monetary issues relating to an open economy are examined in Chapter 3, focusing on the effects of international flows as well as the implications for exchange rates. The

analysis is extended to the case of a small open economy (SOE) in particular, since the South African economy can be placed in this category.

The Post Keynesian school regards itself as seeking to capture economic realities in its theories and models, and in the tradition of Keynes himself, offers views on economic policy issues and problems. Chapter 4 seeks to bring together some of the main economic policy implications and recommendations arising from Post Keynesian monetary theory. Post Keynesian writers such as Kaldor (1986) were at the forefront of the debate with monetarist exponents (particularly Friedman) during the period in which monetarist policy prescriptions were gaining prominence in many governments. Post Keynesians were firmly opposed to the monetary growth rule approach espoused by monetarists, but were also opposed to the naïve optimism of monetarists in advocating completely flexible exchange rates, and even to their advocacy of unfettered free enterprise with minimal government intervention. Although Post Keynesians are strongly supportive of a free enterprise or entrepreneurial economic system, and give emphasis to the economic role of entrepreneurs, their view that a full employment equilibrium is not automatically attainable, and that the economic world is subject to uncertainty and instability, leads them to advocate an important role for government in monetary as well as fiscal policy in order to improve economic performance.

The Post Keynesian view has implications for the role which a central bank plays in the economy as well as for the manner in which it conducts monetary policy. Whereas a monetarist view implies a strong emphasis on control of monetary aggregates, with the ultimate objective of curbing inflation through monetary policy instruments, the Post Keynesian view implies stronger emphasis on the short-term interest rate as the primary instrument of monetary policy, together with the exchange rate in respect of international flows. The Post Keynesian view also implies a broader set of overall goals for a central bank, since monetary policy instruments are held to have effects on the real economy in both the short and long period.

In the final chapter, the implications of the Post Keynesian theory of money for monetary policy in South Africa are examined. The main features of the South African monetary system, following the recommended approaches and changes presented by the De Kock Commission (1985) and subsequently adopted, are characterised, including more recent changes of policy significance. The De Kock Commission recommendations gave rise to various debates among economists, including that of the extent to which the monetary control mechanism adopted is in a monetarist or Post Keynesian mould. This issue is explored, as is the extent to which the approach to exchange rates accords with Post Keynesian thinking. The implications of the Post Keynesian view for money supply targeting, interest rate policy, public debt management and anti-inflation measures are examined. It is apparent from the examination that Post Keynesian monetary theory has implications not only for the instruments and manner of conducting monetary policy adopted by the Reserve Bank, but also for the broader role of the Reserve Bank in the economy and the ultimate objectives it seeks to attain.

The approach adopted by the Reserve Bank to monetary policy has been deeply influenced by monetarist thinking, as is the case in many industrialised economies, even though monetarist philosophies and policy prescriptions are frequently not taken to their logical conclusions. Use of monetary aggregate guidelines rather than a strict monetary growth rule is an example of this. It is possible that the monetarist perceptions ingrained into economic thinking have led the Reserve Bank to adopt monetary policy approaches which are harsher than necessary towards real economic activity and growth. The Post Keynesian theory of money offers an alternative view in which monetary policy could possibly be used in a more positive manner towards the attainment of broader economic objectives.

CHAPTER 1

BACKGROUND TO POST KEYNESIAN MONETARY THEORY

1.1 Introduction

Post Keynesian economics provides a theory of money alternative to that of monetarist, neoclassical and mainstream Keynesian economics. It is a theory in which money matters in the sense of being integrally involved in determining real economic outcomes in both the short and long run. It is built on a set of assumptions and perceptions concerning the nature of a capitalist economy which its adherents regard as more realistic than those of neoclassical and mainstream Keynesian economics. Post Keynesian economists have been involved in putting forward arguments, developing models and engaging in theoretical and policy debates over a period of over three decades. In spite of the strength of its theoretical roots in the work of Keynes and eminent scholars at Cambridge who continued in his analytical tradition, the Post Keynesian school has not received the prominence in university teaching of economics, or in adoption of economic policies, that has been attained by mainstream Keynesianism, monetarism and broad neoclassical economics. Mainstream Keynesianism appeared to provide sound analyses and policies in the 1950s and 1960s, but these came increasingly into question as inflation persisted in most economies in the 1970s, even in conditions of recession. Monetarism became a favoured and popular alternative, with widespread influence on economic thinking and policy. Neoclassical economics, with its rigorous mathematical approaches based on general equilibrium concepts, continues to proliferate in academic programmes. There are, however, many questions to be raised on the validity of monetarist and neoclassical theories and consequent policy prescriptions. With so many questions and unresolved issues facing conventional economics, especially concerning monetary issues, a critical appraisal of the monetary theory offered by the Post Keynesian school is pertinent. This chapter examines the theoretical foundations and historical origins of Post Keynesian monetary economics to compare it to other leading

schools of economic thought and to differentiate it from allied points of view. Subsequent chapters explore the theoretical issues and policy implications in greater depth.

Post Keynesian economics is by no means a unified body of theory and viewpoints. Although there are many common threads, there is considerable diversity in the approaches and viewpoints of writers who can be broadly classified as Post Keynesian, and this is particularly the case in the field of monetary theory. Although the insights and analytical framework put forward by Keynes provided a foundation stone for development of Post Keynesian thinking and models, there has been continual extension and refinement of the Post Keynesian body of economic theory, with significant departures from Keynes' thinking (for instance in respect of endogeneity of the money supply). It is one of the purposes of this dissertation to examine the views on monetary issues of recognised members of the Post Keynesian group, and thereby to draw together the core elements of the Post Keynesian view of money.

This chapter commences with the distinction between the work of Keynes, subsequent Keynesianism and the later Post Keynesianism. It clarifies the way in which these and related terms are used in this dissertation. The relationship of Post Keynesianism to neo-Ricardian Keynesianism is examined, since the latter shares some common ground with Post Keynesianism. An outline is presented of some of the key precepts which lie behind Post Keynesian economic thinking, to place its monetary theory in context. The historical roots of the major divide between economic thinking in the Post Keynesian and similar moulds, and that of the monetarist and neoclassical persuasion, is traced to the contrasting views of the Banking School and Currency School. Against this backdrop, some of the primary theoretical issues which lead Post Keynesians to adopt their particular view of money are examined. This includes the relation of money to uncertainty and to time, and the implications of the notions of equilibrium adopted. The chapter culminates with the distinction introduced by Schumpeter between theories in a tradition of Real Analysis and Monetary

Analysis, which is found to be a useful taxonomy on which to place the further exposition of Post Keynesian monetary theory in Chapter 2.

1.2 Keynesians, Post Keynesians and neo-Ricardian Keynesians

In publishing the *General Theory*, Keynes regarded himself as presenting a theory which would revolutionise the field of economics. He sought to persuade economists to re-examine certain of their basic assumptions on how an economic system behaves. His arguments were directed in particular at what he referred to as the 'classical' view whereby an economy with unfettered competitive forces has a self-correcting tendency towards a full-employment equilibrium condition. He argued that Say's Law (that production of goods necessarily leads to demand sufficient to absorb all goods produced) does not hold in an entrepreneurial money economy. He put forward a theory whereby aggregate demand and aggregate supply could be in equilibrium at a level below full employment in the economy. (Keynes, 1936:26.)

The *General Theory* did indeed have a major impact on economic thinking over several decades. However, in mainstream professional writings and textbooks, Keynes' theoretical analysis was interpreted in such a manner as to retain the key precepts of neoclassical economics. This led to the neoclassical synthesis, frequently referred to as Keynesianism or Old Keynesianism, which dominated mainstream macroeconomic thinking to the end of the 1970s. The reconciliation with neoclassical precepts commenced soon after publication of the *General Theory*. Hicks (1937) sought to capture the essence of Keynes' view on unemployment equilibrium through the interaction of investment-saving and money supply-demand schedules. The resulting IS/LM analysis has served as the basis for examining these issues in macroeconomic textbooks, in spite of strong criticisms of the extent to which the IS/LM model captures the thinking of the *General Theory* (Weintraub, 1977:46). Hicks himself subsequently recognised that his initial interpretation could be a misleading portrayal of Keynes' view (Davidson, 1994:118). The word Keynesian is usually used to refer to the neoclassical synthesis, in its various strands of Old Keynesian, New

Keynesian and neo-Keynesian. It refers to the varieties of Keynesianism which have re-introduced or accommodated neoclassical assumptions, thereby departing from certain fundamental new insights put forward in the *General Theory*. It is this accommodation of neoclassical assumptions which lies at the heart of its differentiation from Post Keynesianism.

The term Post Keynesian entails views which differ markedly from the neoclassical synthesis interpretation of Keynes' work, and the term is used in full throughout this dissertation to ensure that the distinction from the neoclassical synthesis (and other brands of Keynesianism) is clearly maintained. Although having its roots in the writings of colleagues of Keynes at Cambridge, such as Joan Robinson and Kaldor, Post Keynesian economics became an identifiable school of economic thinking from the late 1970s as efforts were made to develop Keynes' original insights and concepts, in contradistinction with the neoclassical synthesis. Post Keynesians believe that Keynes provided a new way of analysing monetary economies, as well as fundamental insights not captured in the neoclassical synthesis, and that these have important consequences for economic theory and analysis. In spite of the considerable diversity in Post Keynesian views and approaches, Post Keynesians subscribe to certain common propositions which differentiate them from other leading schools of economic thought. These include an emphasis on the role of uncertainty and historical time, a deep scepticism towards economic models of a general equilibrium nature, a preference for partial equilibrium approaches using 'stylised facts', the view that money is integrally involved in determining real economic outcomes and is best viewed as credit-money rather than commodity-money, the view that money aggregates are outside the control of monetary authorities (endogenous), and recognition that institutions, both legal (e.g. contracts) and organisational, play an important role in economics. These issues are taken up further below.

Although Post Keynesian economics has evolved considerably from the original works of Keynes, it is apparent that Keynes' conceptual framework has continued to have a major bearing on Post Keynesian thinking. In a recent

edition of the *Post Keynesian Journal of Economics* (1996), for instance, two papers address specifically the legacy of Keynes in current economic thinking (Davidson, 1996 and Carvalho, 1996), and other papers make frequent reference to the work of Keynes. It appears that part of the reason for the continued centrality of Keynes is that, in the Post Keynesian view, the dominant strands of economics which constitute orthodox or conventional economic thinking in the Keynesian mould still entail a major departure from the conceptual framework which Keynes put forward in the *General Theory*. For instance, Davidson (1996:50) heads a section of his paper, "Why has the mainstream ignored Keynes' revolutionary legacy?" in which he is referring to mainstream Keynesians using the neoclassical synthesis framework, whether Old Keynesian, New Keynesian or neo-Keynesian. Davidson maintains that these Keynesians still seek one or other constraint or imperfection to explain economic equilibrium below full employment, and still subscribe to the neoclassical axioms of gross substitution, ergodicity, and long-run neutral money. Post Keynesians thus continue to emphasise Keynes' fundamental departure from these precepts as well as drawing inspiration from his conception of the interrelationship between investment, income, consumption, saving and monetary variables. Even Keynesians such as Tobin, who have adopted and extended Keynes' liquidity preference theory as well as other aspects of Keynes' work, receive fierce criticism from the Post Keynesian camp for not having made the full conceptual leap (Davidson, 1996:58).

This dissertation concentrates on the monetary views of the Post Keynesian group whose ideas follow in the lineage of Keynes himself. Closely associated with this group, however, are those economists who might more accurately be labelled as neo-Ricardian Keynesians (sometimes referred to as neo-Ricardians). As Torr (1993:401-402) points out, the most prominent exponents of the neo-Ricardian Keynesian view, including Garegnani, are members of the managing board of editors of the *Journal of Post Keynesian Economics*. However, their position on several key issues is different from the more central Post Keynesian viewpoints.

The primary distinguishing point of neo-Ricardian Keynesians relative to Post Keynesians in the Keynes lineage is that the former concentrate on long-period equilibrium positions, and do not incorporate uncertainty and expectations, which they regard as transitory factors, into their formal analysis. Dutt (1992:218) characterises them as "those Keynesians who combine Sraffa's critique of neoclassical theory and Keynes' theory of effective demand to show why unemployment equilibrium exists". The difference is of importance to monetary theory in that Post Keynesians such as Davidson and Moore regard uncertainty as fundamental to the understanding of money in a modern capitalist economy. Neo-Ricardian Keynesians seek to bypass the ambiguity of subjective factors to reach long-period equilibrium conclusions which are more objectively secure. The neo-Ricardian Keynesians do not deny that expectations play a role, but maintain that this is confined to effects on market prices in the short period. They regard transitory factors as having no bearing on the eventual equilibrium. If, however, the long-period equilibrium is path-dependent, as many Post Keynesians would argue, their disregard of transitory factors is open to serious question (Dutt, 1992:222).

Neo-Ricardian Keynesians base their analyses on the concept of a uniform rate of profit to which the economy tends in the long period, hence the reference to Ricardo in their designation. They seek to combine this concept with Keynes' principle of effective demand to analyse the persistent economic forces moving the economy toward long-period equilibrium. They regard this long-period equilibrium as being equilibrium in the sense of a centre of gravitation. The long-period equilibrium entails a set of 'natural' prices corresponding to the uniform rate of profit among industries and individual firms. Adoption of the principle of effective demand entails a long-period equilibrium which may or may not be one of full employment.

Torr (1988:129) confirms the "uneasy alliance between Keynesian and Ricardian elements in the post-Keynesian school". The neo-Ricardians subscribe to Keynes' 'entrepreneur economy' view as better depicting a modern economy than the alternative 'co-operative economy' view in which employment

decisions are characterised as being determined by entrepreneurs and workers jointly. They embrace the notion of an equilibrium determined by the principle of effective demand, rather than through unconstrained forces of supply and demand. However, they regard Keynes' 'bulls and bears equilibrium', in which divergent expectations lead to a price equilibrium in financial markets, as not being an essential feature of Keynes' *General Theory* analysis. This accords with the neo-Ricardians' reluctance to incorporate expectations into their theoretical structure, as well as their view that expectations which are of any economic significance (in the short period) are in any event likely to be convergent. In the latter respect, neo-Ricardians have some similarities with rational expectations theorists in that both see expectations as being tied to a consistent underlying model of reality. "The Ricardians and the rational expectations exponents appear therefore to be in substantial agreement on how to treat expectations. Any disagreement that there may be between the two schools should revolve around just what relevant theory such rational or inescapable expectations are to be associated with." (Torr, 1988:126). The rational expectations exponents, however, adopt an unconstrained demand and supply equilibrium notion operating in a co-operative economy framework: it is the choice of economic theory which leads to widely differing conclusions rather than the treatment of expectations, and this choice places the neo-Ricardians broadly in the Keynesian camp.

The neo-Ricardian Keynesians appear to embrace an ergodic view of the economic world in which "the system will gravitate to a predetermined state of rest, wherever it starts from." Torr (1993). This conflicts with Davidson's emphasis on nonergodicity as fundamental to economic systems. Torr points out that the crucial difference in this respect may lie in whether expectations are assumed to be divergent or convergent; if expectations are accorded a role, convergent expectations suggest an ergodic view of economic reality. Furthermore, if expectations are based on underlying objective realities, they are likely to be convergent. The issue of whether the economic world is ergodic or nonergodic in nature would appear to be a significant difference at a

fundamental theoretical level between neo-Ricardians and the Post Keynesian core.

Post Keynesian views concerning uncertainty, formation of expectations, equilibrium concepts and the treatment of time in theoretical models serve as a point of departure for much of Post Keynesian economic analysis and lie behind many of the arguments and conclusions which differ from other schools of thought. To these theoretical precepts needs to be added the Post Keynesian recognition that economic effects of institutions need to be taken into account in economic analysis (Davidson, 1982:13). A major example is the importance attached to the enforceability of contracts denominated in money terms, especially wage contracts entered into between entrepreneurs and workers in advance of production activity. In the monetary sphere, this concern for institutions translates into focussing on the mechanisms through which credit is provided by the banking system. Recognition is given to the fact that firms need to borrow from the banking system in advance of production occurring, to meet wages and production costs as well as for capital investment purposes, and that such borrowing is undertaken in accordance with their expectations of future sales revenues. The willingness and ability of banks to provide credit in advance of productive activity, and the terms on which it is provided, are therefore regarded as crucial to investment and economic expansion. This contrasts with monetarist and neoclassical thinking in which increases in money supply are regarded as neutral to real economic activity in the long run and in which no significant economic effect is accorded to the nature of institutions. In the Post Keynesian view, *ex ante* (expected) returns on new capital investment relative to the interest rate and repayment terms of credit provided by the banking system are a key determinant of investment behaviour. The Post Keynesian recognition of the importance of institutions extends also to organisational institutions, both government and private sector, and the role which the actions of such institutions can play in determining economic outcomes.

Post Keynesians therefore hold an economic view in which monetary variables are central and in which economic output does not automatically adjust to full employment levels through market forces. Money forms an integral part of the Post Keynesian economic framework, and the theoretical precepts underlying the Post Keynesian view have a major bearing on the monetary theory and monetary policy measures which have been put forward by Post Keynesian writers, as does recognition of the role which institutions play in economic interactions.

1.3 Banking School versus Currency School

Much of the debate and contrary viewpoints which underlie the Post Keynesian position relative to the monetarist, neoclassical, rational expectations and similar frameworks have a historical parallel in the Banking School versus Currency School debates which took place in Britain from the 1820s. Typical issues under dispute were: (1) whether note issues should vary one-to-one with the Bank of England's gold holdings (2) the validity of the Banking School doctrines of real bills, needs of trade and law of reflux (3) the desirability of a monopoly of note issue (4) whether overissue was a problem, and if so its causes (5) the appropriate definition of money (6) why trade cycles occur and (7) whether there should be a central bank (Schwartz, 1990).

The Currency School, mirroring the present-day monetarist camp, advocated regulation to ensure that paper money was kept under strict quantitative control. They favoured a one-to-one correspondence of note issue with Bank of England gold holdings. They saw a rise in price level as a symptom of excessive note issues. They regarded the Bank of England, as well as the Scottish and country banks which were independent at that time, as being prone to over-issue, and saw the solution as creation of a single, regulated monopoly issuer. Although most members of the Currency School attributed trade cycles to non-monetary causes, they regarded inadequately controlled money issue as fuelling and exacerbating cycles. The Currency School favoured a central bank which would be bound by rules in issuing notes; this they considered would stabilise prices

and business cycles. They regarded outflows of gold as having a direct impact on currency in circulation, which could and should be compensated by an increase in paper currency. They held as an objective the achievement of a price level which would be the same whether the money supply were fully metallic or a mixed currency comprising paper notes and metallic currency.

The Banking School, paralleling Post Keynesians and most Keynesians, adopted the principle that deposit liabilities and notes would never be excessive provided that banks restricted their income-earning assets to real bills, and that note circulation should be demand determined (the banking principle). By 'real bills' was meant credit for goods in the process of being produced or in transit, and the associated view became known as the real bills doctrine. The Banking School regarded note issue as being subject to a law of reflux, whereby over-issue could only exist for a limited period, since notes would shortly return to the issuer for repayment of loans. Creation of too large an amount of bank loans and deposits "would lead automatically to their conversion into metallic money, forcing the banks to restrict lending." (Moore, 1988a:5). The Banking School did not make any distinction between the speed of reflux of the Bank of England and for competitive banks in rural areas and Scotland: the latter could well have had longer reflux times. The School saw no need for legislative regulation of the banking system: to them, sound bank management was sufficient. Trade cycles were accorded purely non-monetary causes, and banks were regarded as having no particular role in stabilising or exacerbating cyclical swings. The Banking School was in favour of a central bank with the sole right of note issue, but this was primarily for co-ordination and standardisation reasons rather than money supply regulation.

These debates from the 1820s were not conclusive and neither viewpoint predominated. Sharp controversies raged in the second half of the nineteenth century: the Bank Charter Act of 1844 prevented new banks in England and Wales from gaining the right to issue notes, and restrictions were placed on note issue by existing banks in subsequent Acts. The Banking School objected to these restrictions, and claimed vindication for its viewpoint when restrictions

had to be suspended in 1847, 1857 and 1866. The Currency School maintained that the suspensions were of no great significance. Currency School views prevailed when maximum note issues were set for country banks and provision made for transfer of their circulation to the Bank of England. (Schwartz, 1990.)

Steeped in the Banking School-Currency School divide were the empirical findings of Tooke and subsequently of Gibson which contradicted the quantity theory view held by classical economists, in particular the indirect mechanism put forward by Henry Thornton in 1802. Whereas the direct quantity theory mechanism put forward in the eighteenth century by Hume and Cantillon relied on the spending of an excess accumulation of commodity money (e.g. gold) to increase demand and thereby prices, the indirect mechanism put forward by Thornton was based on the lowering of money interest rates by the banking system in order to lend out excess reserves, inducing businessmen to increase the rate of investment, leading to higher aggregate demand and a consequent increase in price level. Thornton's indirect mechanism would suggest a strong negative correlation between money interest rates and price level increases, especially in the upward phase of a business cycle. Tooke's empirical work, first published in 1838, showed, however, that movements in the general level of commodity prices were positively correlated with interest rates, and with changes in interest rates. The explanation he offered for this was that interest rates form a component of production costs, leading to increasing prices through the aggregate supply curve in its relationship to aggregate demand. This was a forerunner to cost-push explanations of inflation.

Tooke's findings were confirmed by the empirical studies undertaken by Gibson in England, first published in 1923. Keynes referred to this as the "Gibson Paradox", which he addressed in his *Treatise on Money* (1930). Wicksell had addressed the issue in his writings around 1900, and both he and Gibson provided explanations in the saving-investment interaction rather than in money itself (Makinen, 1977:66). These are based on a natural rate of interest which changes due to technological innovation or other source of improved capital productivity. The investment demand curve shifts outwards, as does the

demand for loanable funds. Since bankers do not immediately perceive the change in the natural rate, the money rate of interest remains at a lower level than the natural rate, with additional credit money being issued to meet the higher investment demand, leading to an increase in the price level as equilibrium is approached between the value of aggregate demand and supply. The inflationary process continues for as long as the money rate of interest lies below the natural rate. These explanations are consistent with the empirical findings of Tooke and Gibson.

Makinen (1977:63) regards the issue of exogeneity or endogeneity of the money supply as being at the heart of the Currency School - Banking School debate; "Put quite simply, at stake in this issue is whether the supply of money is exogenous (controllable by the central bank) or endogenous (determined by the individuals in the economic system). To the Currency School, the stock of money was exogenous whereas to the Banking School, it was clearly endogenous." Makinen (1977:66) maintains that both Wicksell and Keynes were assuming an exogenous money supply in the sense that the central bank could control it if it so wished. This would place Keynes in the Currency School, contrary to the view that the Banking School was the forerunner to the monetary analysis of Keynes and the Post Keynesians. Assumption of money supply exogeneity or endogeneity is probably too narrow a criterion, used on its own, by which to place theories in one of the two schools, especially since exogeneity assumptions may be adopted for expositional purposes. As taken up in Chapter 3, Moore (1988a) regards Keynes' treatment of money in the *Treatise* as endogenous, so the matter in respect of Keynes on this criterion is in any event open to debate. It would seem preferable to include additional criteria, such as subscribing to a quantity theory of money, neutrality of real economy effects and a commodity-money view, in placing theories and writers in the Currency rather than Banking School.

1.4 Uncertainty and Expectations

Post Keynesian economics views money as being closely bound to uncertainty. The traditional functions of money are accepted: as a unit of account, a medium of exchange and a store of value. But the question is asked: Why would a rational person hold money as a store of value in a world of perfect certainty and perfect markets? In a neoclassical economy with a Walrasian auctioneer using a tâtonnement process to bring all traders to an equilibrium point before any transactions occur, there is no reason for money to be held as against goods or producible assets as a store of value (Hahn, 1982:31). Holding money yields no utility, since goods essentially exchange for goods at the equilibrium prices and quantities reached through the auctioneer. In a neoclassical world, requirements for goods and available supply are fully matched in the current period, and will be fully matched in the next and all subsequent periods. In the Post Keynesian view, however, it is rational for agents to hold money as a store of value to meet the inherent uncertainties of the economic world. In the words of Keynes (1937a:187): "Our desire to hold money as a store of wealth is a barometer of the degree of distrust of our own calculations and conventions concerning the future the possession of actual money lulls our disquietude."

The uncertainty concept adopted by Post Keynesians is that put forward by Knight (1921) and taken up by Keynes. This can be illustrated by Davidson's (1994:88) distinction of three possible views of the economic environment within which decisions need to be made:

An objective probability environment in which an objective probability distribution based in reality governs past, current and future outcomes. A decision maker is able to analyse past relative frequencies of outcomes in order to calculate statistically reliable probabilities for future prospects.

A subjective probability environment in which decision makers can order or evaluate all possible future outcomes in terms of subjective probabilities. The subjective probabilities may not coincide with the underlying objective

probabilities. Economic agents will make decisions based on their subjectively perceived probabilities, which will eventuate as good or bad decisions depending on the degree to which these correctly reflect the objective probabilities which prevail. A Social Darwinian style selection process would favour those whose subjective probability perceptions are usually correct against those whose probability perceptions differ from the objective probabilities.

An uncertainty environment in which the lapse of time between the moment of decision and the outcome is such that unforeseeable changes can occur, so that reliable information concerning future prospects does not exist in the present.

Post Keynesian writers generally adopt the third category as best reflecting economic reality. This corresponds to their maintaining that economic systems are nonergodic in character.¹ It implies that the future path and state of events cannot be known by economic actors, even in stochastic terms. Economic variables are not characterised by stationary stochastic distributions through which expected values can be obtained using past data. The uncertainty faced by economic actors is distinguished from risk in terms of which outcomes are definable in probabilistic terms. In an uncertainty environment, the future is not calculable, deterministically or stochastically, even if the decision maker has the capacity to perform all the mathematical operations required to calculate probabilities of conditional events based on a full set of relevant information.

The nonergodic viewpoint contrasts directly with a New Classical rational expectations hypothesis (REH) view of economic reality. Under REH, economic outcomes are subject to stochastic distributions and decisions on average are made on the basis of expected values given by the prevailing economic theory: "In situations of risk, the hypothesis of rational behaviour on the part of agents will have usable content so that behaviour may be explainable in terms of economic theory. In such situations expectations are rational in Muth's sense."

¹ As noted in Section 1.2, the neo-Ricardian Keynesians do not share this nonergodic view.

(Lucas, 1977:15). The REH view implies that economic decisions are characterised purely by risk, which is definable in terms of a probability distribution, and outcomes will exhibit a predictable stochastic pattern with a derivable expected value, and hence provide actuarial certainty.

The adoption or rejection of ergodicity as an underlying assumption in economic analysis creates a major theoretical divide at a fundamental level. Neoclassical economists such as Samuelson and Lucas insist that assumption of an ergodic system, with future events being reliably predictable using stochastic analysis, is essential to application of the scientific method in economics: that any analysis involving an uncertainty (nonergodic) environment is methodologically unacceptable. For example, Lucas maintains, "In cases of uncertainty economic reasoning will be of no value." (Lucas, 1977:15). The entire edifice of Rational Expectations and general equilibrium modelling is built on the assumption of stochastically predictable economic events, and its adherents regard any alternative assumption as incompatible with scientific enquiry. The Post Keynesians reject this, regard underlying uncertainty and nonergodicity as a more realistic assumption for modelling real-world economic systems, and maintain that a theoretical structure based on this assumption is (at least) equally valid in scientific terms to one based on the assumption of ergodicity.

The difference in ergodicity assumptions directly affects the manner in which expectations are viewed and modelled. Under ergodic assumptions, both objective and subjective probabilities can be analysed in terms of an expected utility theory and expectations can be modelled in terms of an average or central tendency on the part of a large number of economic agents. In a nonergodic world, expectations may have no such central tendency and need to be modelled in terms of pure uncertainty (ignorance or "unknowledge" to use the term coined by Shackle (1974)) without recourse to stochastic approaches. "One must assume that the people in one's models do not know what is going to happen, and know that they do not know just what is going to happen. As in history." (Hicks, 1979).

Post Keynesians maintain that uncertainty was fundamental in the work of Keynes (e.g. King, 1995:157). They maintain that the 'animal spirits' emphasised by Keynes in entrepreneurial investment decisions are a reflection of uncertainty: entrepreneurs undertake investment in new ventures based on belief and courage, rather than on the basis of a known expected value of the outcome based on statistical probability distributions. The role of uncertainty, as opposed to quantifiable, stochastic risk, is therefore an important factor in examining monetary theories and differentiating between classical, neoclassical and strands of Post Keynesian thought.

1.5 Notions of Time

Post Keynesian writers view the sequential nature of time as an essential ingredient in being able to understand and model economic systems, especially in relation to money. They consider general equilibrium theorists, and most other neoclassical writers, to be abstracting from historical time and thereby to be losing crucial elements on which a theory of money needs to be built. Kaldor expresses this in criticising neoclassical economics (1985a:61), "It seems clear that if we are to get out of the present impasse we must begin by constructing a different kind of abstract model, one that recognises from the beginning that time is a continuing and irreversible process; that it is impossible to assume the constancy of anything *over* time, such as the supply of labor or capital, the psychological preferences for commodities, the nature and number of commodities, or technical knowledge." Moore puts forward the recognition of historical time as a key feature of a new Post Keynesian macroeconomic paradigm (1988a:167). Davidson (1980:157) regards the emphasis on historical time as essential to analysing real-world economies. He points out that real time is asymmetric, since we are able to obtain information about the past but cannot have similar knowledge about the future. He asserts that "Keynes' revolution is in the Marshall tradition of emphasising the presence of time at the center of economic problems." (1980:159). Rogers (1989) discusses the incorporation of historical time in the context of methodological approaches and in particular the realism of underlying assumptions. He argues that, although

heuristic or simplifying assumptions are necessary in constructing theories or models, the truth status or realism of such assumptions is important in any realist methodological approach (as opposed to a purely instrumentalist methodological approach such as adopted for instance by Milton Friedman) (Rogers, 1989:143). He argues that simplifications need to be of such a nature that they can be removed in stages, thereby capturing more of the real-world complexity, without the model becoming invalid. He maintains that logical or mechanistic time does not meet this requirement of a realist methodological approach.

Keynes regarded time as being closely related to money in that "*the importance of money essentially flows from its being a link between the present and the future.*" (1936:293). With expectations being liable to confirmation or disappointment in an uncertain world, "we cannot even begin to discuss the effect of changing expectations on current activities except in monetary terms." (1936:294). Forward commitments in an uncertain world link the holding of money as a store of value to time. Money is held in the present to meet future commitments which are affected by an inherently uncertain world. Davidson (1994:86) uses the term 'time machine' to convey the characteristic of money in which it is able to transfer purchasing power from present to future in a generalised, unspecified form. It should be noted that Davidson is not maintaining that real economic output at macroeconomic level can be shifted in time through this means, which would be contrary to Keynes' principle of effective demand. Lerner (1961:141) uses the term 'time machine' in a different sense to convey the point that such shifts are not possible for a closed economy as a whole: "the borrowing and the repayment do not make a Time Machine. There is no shift of resources or of burdens between different points in time." Davidson is using the term to describe the complex interplay of time-dated purchasing power interchanges between the participants in the economy, which can nevertheless have real economic effects through the maturity structures of debt and the terms on which it is provided.

The view that the economy must be firmly tied to historical time for analysis purposes places Post Keynesians in the tradition of Marx and Hegel in this respect. Marx for instance regarded economics as fundamentally an interplay of historical economic and social forces, leading inexorably to long run structural changes. Keynes and Marx were both critical of the 'classical' view as an interpretation of the functioning of a capitalist economy. Although most of their criticism related to the rejection of Say's Law, it is interesting to note the additional commonality in their view that economics is best seen as a process in historical time.

1.6 Notions of Equilibrium

The historical conception of time has implications for the view of equilibrium taken and how this is deployed in economic analysis. Kaldor (1985a:62) for instance maintains that, "the exogenous variables that determine the nature of equilibrium are independent of history in their most important characteristics." Kaldor is arguing that equilibrium economics is economics without the notion of historical time. This implies that economic analysis must be able to deal with the economy in a state away from either short period or long period equilibrium to be able to incorporate the effects of historical time. It does not necessarily negate the usefulness of equilibrium concepts as states towards which the economic system will tend. It does, however, question the usefulness of model equilibria where it is not clear how the economy moves to such an equilibrium or what factors will come into play thereafter.

The two concepts of macro-equilibrium in economics as identified by Chick (1983:21) are useful in examining the equilibrium concept used by Post Keynesians: (i) macro-equilibrium as a point of rest, in which economic forces which would give rise to change are either absent or in countervailing balance; and (ii) macro-equilibrium as a balance between supply and demand functions. The first concept is broader than the second (the second implies the first but not vice versa) and it is the first rather than the second which is used in Post Keynesian economic theory. The second, on the other hand, is the concept

adopted in general equilibrium analysis which has the implication that the labour market, in addition to commodity markets, clears and gives rise to full employment in long-period equilibrium. Keynes and Ricardo use the first concept; Marshall uses the latter narrower concept in microeconomic analysis.

A great deal of economic theory has been devoted to the mathematical intricacies of general equilibrium models, often referred to as neo-Walrasian models, and general equilibrium assumptions pervade much of neoclassical economics. General equilibrium theorists view economic systems in terms of a comprehensive set of simultaneous equations reflecting supply and demand quantities and prices for each commodity and resource in the economy. Although obtaining the necessary coefficients and pricing data for such specifications is virtually impossible in practice, the theoretical formulation of such general equilibrium models can arguably yield useful insights into the possible workings of the economy. However, Post Keynesian writers take issue with the general equilibrium approach on several grounds.

Post Keynesian writers point out that even the most sophisticated formulations of the general equilibrium framework, that of Arrow and Debreu in the 1950s for instance, cannot provide an essential role for money. The Arrow-Debreu specification consists of a complete set of futures markets for all time-dated commodities, with commodities being defined as contingent on the 'state of nature'. The states of nature cover everything that might affect the usefulness or availability of commodities, and are defined so that only and exactly one state must occur. This enables all decisions to be pre-reconciled at an initial instant in time. Trade then occurs as time unfolds in accordance with the equilibrium established at the outset. In this manner, the problems of uncertainty and expectations are avoided since all future quantities and prices are determined at the initial instant. However, such a system has no clear role for money since all future trades and prices at which they will occur have been determined and can be carried out without the presence of money. In the words of Hahn (1982:1) "A world in which all contingent future contracts are possible neither wants nor needs intrinsically worthless money."

Davidson (1980:173) argues that general equilibrium models have no contribution to make in addressing actual situations and policy issues because of their lack of realistic assumptions. He considers their usefulness to be confined to examining certain categories of theoretical problems only. Moore (1988a:368) takes issue with the general equilibrium approach on similar grounds. In his view, economic processes have no pre-determinable long-run equilibrium position toward which they are tending, and he considers the concept of general equilibrium to be "misleading and unhelpful". His view is that an economy is in a continual state of flux, subject to non-recurring historical forces as well as intrinsic uncertainty. This is close to the 'kaleidic' view of Shackle (1974), and is more extreme than that of most Post Keynesians, who would accept the usefulness of certain concepts of equilibrium in economic theory, albeit not the general equilibrium framework.

Post Keynesian theorists generally accept a partial equilibrium approach to analysis. This is an equilibrium in the tradition of Marshall, but also of Ricardo and Keynes himself. In a Post Keynesian view, the partial equilibrium approach should not be seen as only addressing a particular issue in the economy or as being confined to microeconomics. It should rather be seen as a method by which economic issues are examined using a one-problem-at-a-time, *ceteris paribus* approach, with the results being fed into the economic system as a whole (Chick, 1983:15). The method can be used in a variety of theories; hence there is no contradiction in its use by Ricardo and Marshall as well as by Keynes. The method is useful in its relation to causality, as well as in its interpretation of long-period equilibrium. It makes use of hypothetical thought experiments to examine what would happen as a result of a change in one causal factor, assuming other causal factors remained constant. In this respect, and in its long-period equilibrium application, it is a means to systematic and logical economic analysis, and need not imply that the economy actually attains the equilibrium state.

1.7 Nonergodicity and Hysteresis

Davidson, Moore and Rogers deploy the concept of hysteresis in viewing the nature of the economy and its passage through historical time. The concept is drawn from the physical sciences, in which it refers to the property (e.g. in magnetising iron) whereby the physical state of an object is dependent on the time path of influences as well as the variable magnitudes themselves. They are seeking to capture the notion that the future path of the economy is dependent on the historical path that it has traversed, that the economy cannot be analysed only in terms of its current state at a point in time. The concept also implies that economic variables may not be subject to (ahistorical) market forces that will propel them to their 'natural' levels, but need rather to be seen in terms of a process analysis in which the outcomes at any one point of time become initial conditions in the next (Chick, 1983:16).

An interesting and hard-hitting debate was waged in the *Journal of Post Keynesian Economics*, particularly the issue of Spring 1993, concerning the nature and importance of the hysteresis concept to Post Keynesian economics. Cross (1993) took Davidson to task for not giving due recognition to hysteresis in expressing Post Keynesian views on the nature of economic processes. Cross expresses a hysteresis concept directly analogous to that of physics, in which a change or "shock" in one variable may lead to a changed value of a dependent variable even after the change or shock has been removed. The new dependent variable value remains indefinitely unless a reversing shock is applied. He cites the example of a contractionary shock on unemployment, which could leave a higher unemployment level after the shock has been removed. Cross maintains that hysteresis underpins the notion of uncertainty as used by Keynes and Post Keynesians.

Davidson (1993) does not deny the validity or usefulness of the hysteresis concept. He provides a technical exposition to express the distinction between the hysteresis and nonergodicity concepts. He defines nonergodicity to refer to stochastic processes in which space (cross-sectional) moments (e.g. averages)

do not coincide with time (longitudinal) moments for repeated realisations of the stochastic process. Nonstationarity is a sufficient condition for nonergodicity, though there are cases of stationary processes which are nonergodic (because cross-sectional moments don't coincide with longitudinal moments). Nonergodicity is the broader term. Davidson raises the point that it is difficult to determine what length of time should be used for a shock-induced change to be considered permanent. A change to a dependent variable may be enduring, but may gradually diminish over a period of ten or twenty years. Must one therefore distinguish between true (specific) hysteresis and persistent but temporary (general) hysteresis? Davidson also takes issue with the notion of "shocks" being necessary to change the path of the economy: he considers a more gradualistic unfolding of events which is influenced by changing expectations to be closer to the Post Keynesian view. In all, he considers that the nonergodicity concept better captures the view of uncertainty expressed by Keynes in which there is no scientific or mathematical basis for arriving at firm inferences about the future.

Keynes himself did not make use of either the concept of nonergodicity or hysteresis. Both have been introduced subsequently to clarify and gain additional insights into the nature of the uncertainty which Post Keynesians maintain underpins economic reality. It does appear that both concepts can be embraced by Keynes' more general notion of uncertainty, and that nonergodicity comes closer to describing this notion due to its being the broader concept. Hysteresis, however, is a useful concept in recognising uncertainty due to historical time dependence, especially in its implication of time path dependence, which serves as a basis of criticism toward those such as neo-Ricardians (as well as neoclassical economists) who examine long-period equilibrium positions without consideration of the effects of the previous time path in determining the equilibrium position.

1.8 Real Analysis versus Monetary Analysis

The distinction made by Schumpeter (1954:276) between Real Analysis and Monetary Analysis provides a useful framework against which to examine monetary theories. Schumpeter defines Real Analysis as comprising those theories in which real forces only, and not monetary forces, determine long-period equilibrium positions. Theories in the Real Analysis tradition assume that all essential features of an economy can be understood in terms of real factor inputs, real goods produced and consumed, and real capital being utilised or expanded through investment, with markets responding in terms of real resource allocation. In Monetary Analysis, on the other hand, monetary forces are assumed to play an important role in determination of long-run equilibrium in addition to real forces. Monetary Analysis seeks to integrate real and monetary forces in economic theories. Variables such as money supply aggregates and interest rates are regarded as essential elements of a modern capitalist economy which can influence real magnitudes in the long as well as the short run.

Neoclassical economists and monetarists fall into the Real Analysis stream, since the outcomes of their theories and models (at least in the long run) depend on real economic factors only. Keynes and Post Keynesians fall into the Monetary Analysis stream. There are some economists who can only be classified in terms of this distinction after careful examination of their theories. Wicksell is such an example, since it needs to be shown that his natural rate of interest is determined solely in the real economy before placing his theories in the Real Analysis category. The distinction assists in clarifying the essential nature of the theory in question and in expressing a fundamental characteristic of all Post Keynesian monetary theory.

Rogers (1989), for instance, uses this distinction as the key principle for contrasting monetary theories built on the precepts of Keynes with those arising from a neoclassical, particularly neo-Walrasian, foundation. He uses the Monetary Analysis concept to develop and present a monetary theory which

embraces the Post Keynesian conception of the working of a modern economy. Moore (1988a) endorses the distinction and the classification of Post Keynesian monetary theory in the Monetary Analysis camp. Fundamental to the distinction is the assumption adopted concerning the nature of money. Monetary theories in the tradition of Real Analysis adopt a commodity view of money. This view may well have been valid in the predominantly agricultural economies of two or more centuries ago when use of commodity money was widespread and the banking system at an early stage of development. Theories in the Monetary Analysis tradition regard the nature of money in a modern, capitalist economy to be best characterised as credit money, with very different properties from those of commodity money. Although modern theorists in the Real Analysis tradition recognise the existence of credit, they adopt the tacit assumption that credit behaves or can be made to behave in the same manner as commodity money (Rogers, 1989:4).

The two main streams of neoclassical general equilibrium theory, Wicksellian and neo-Walrasian, can both be shown to fall into the Real Analysis tradition, and to have fundamental defects in providing a theoretical basis for analysing monetary issues. Recognition of money as being credit-money in character provides a basis for development of a theory of monetary equilibrium, which in conjunction with the principle of effective demand propounded by Keynes, leads to economic equilibrium in which monetary variables play an essential role. Monetary forces are able to determine both short-period and long-period equilibrium positions (Rogers, 1989:10). The arguments concerning theories in the Real Analysis tradition, and the development of an alternative Post Keynesian theory in the Monetary Analysis tradition, are taken forward in the next chapter.

1.9 Concluding Remarks

The Post Keynesian theory of money therefore has its roots in the work and insights of Keynes, but has been extended and further developed by economists who can broadly be regarded as in the Post Keynesian mould. Economic work

of this nature was undertaken from the years following Keynes' *General Theory*, by economists such as Joan Robinson and Kaldor, but became more clearly consolidated as a Post Keynesian view in the late 1970s, particularly in response to the rise in monetarism and to dissatisfaction with the neoclassical synthesis as an interpretation of Keynes. Some of the underlying differences in viewing monetary issues can be traced historically to the Currency School - Banking School division from the early 1800s, and more recent differences in conceptual frameworks can be identified, such as those relating to uncertainty, time, the nature of equilibrium and the best characterisation of money in a modern capitalist economy. Also apparent are differences in methodological approaches, with monetarists being inclined to instrumentalist views and Post Keynesians being strongly concerned with realism in assumptions, often drawing on 'stylised facts'. The distinction between Real Analysis and Monetary Analysis provides a useful framework in which to examine the Post Keynesian theory of money, and the Monetary Analysis perspective is used in the next chapter to examine further the theoretical aspects of the Post Keynesian view of money.

CHAPTER 2

THE THEORY OF MONETARY ANALYSIS

2.1 Introduction

In this chapter, the main theoretical aspects underlying a Post Keynesian view of money are examined. The work of four leading Post Keynesian writers is referred to extensively as representative of the Post Keynesian viewpoint: namely Davidson, Moore, Kaldor and Rogers. All four are widely recognised adherents to the Post Keynesian school, and all four have given considerable attention to monetary issues from a Post Keynesian perspective. The views and approaches of other Post Keynesian writers, for instance Minsky concerning financial instability, are drawn on where applicable to give additional viewpoints and comment. Writers from other schools (particularly monetarist and rational expectations) are drawn on to highlight the differences in viewpoints and nature of debates. The main themes which characterise a Post Keynesian view of money, and which differ from alternative views of money, are thereby presented.

The chapter looks at the key issues of Post Keynesian monetary theory under the assumption of a closed economy: the non-neutrality of money with respect to real economic variables, the mechanism through which interest rates are determined, the path through monetary equilibrium to economic equilibrium in terms of the principle of effective demand, the interrelationship between investment behaviour and monetary variables, and the underlying causes of inflation. These strands are drawn together to express the Post Keynesian monetary view in a formal model in Section 2.7. In Section 2.8, an examination is made of why the IS/LM framework does not and cannot adequately portray the Post Keynesian monetary view. The theme running through these issues and models is the close interrelationship of monetary and real sectors, in accordance with the tradition of Monetary Analysis.

2.2 Non-Neutrality of Money

As indicated in Chapter 1, monetary theories can be assessed in terms of the effects envisaged on the real economy as a result of changes in monetary variables. Monetarists, in the classical tradition, adopt the view that monetary aggregates have no effect on the real economy in the long run, with effects being confined to changes in aggregate price levels only. This reflects the classical view that money is a veil behind which the real economy operates, or the oil in the economic machine, necessary for its smooth operation, but without substantive effect. Monetarists therefore fall into Schumpeter's Real Analysis classification, as generally do all economists holding neoclassical views. Post Keynesians believe, on the other hand, that monetary variables have substantive real effects in the long run as well as in the short run and fall squarely into Schumpeter's Monetary Analysis classification.

Marx and Keynes both held the view that the assumptions underlying Say's Law are not applicable to a capitalist economy: that they are applicable only to a barter or co-operative economy. In rejecting Say's Law and introducing the principle of effective demand, Keynes (1936) provided a substantive role for money in the real economy in the tradition of Monetary Analysis. The centrality of the interdependence of the role of money and capitalist production in Keynes' insights is captured by the original title of what was to become the *General Theory*: a '*Monetary Theory of Production*'. Keynes' view of money is one in which it is bound inextricably into the economic system in a capitalist economy, and it is this profound non-neutrality which is adopted by Post Keynesians.

The manner in which money can be introduced into theoretical economic models in such a way that it plays a plausible role has been a longstanding puzzle and source of debate in economic discourse. Proponents of a general equilibrium approach to economic analysis face the barrier that their models cannot explain adequately the existence and behaviour of money. The issues concerning incorporating money into the general equilibrium framework were debated particularly vigorously in the 1960s. The conventional manner of reflecting

money in a general equilibrium model is in the form of a commodity having demand and supply schedules in a similar manner to other commodities. It may be reflected as the n th commodity and serve as the numeraire to indicate its unit of account function, but this does not explain its behaviour as a medium of exchange or store of value. This was of particular concern to Keynesians who wished to combine a non-neutral view of money with a general equilibrium modelling approach. Patinkin (1965) for instance, as a Keynesian in this mould, sought to introduce money into a general equilibrium framework by positing a real-balance effect as the causative channel through which money affects real economic variables. Clower (1967) countered this approach by showing that introduction of money into a general equilibrium model in a logically coherent manner produces results no different from those under assumptions of barter. The arguments of each are outlined below.

Patinkin (1965) highlighted the apparent contradiction arising from the quantity theory in which an equiproportionate increase in prices leaves relative prices unaffected and therefore does not affect real demand and supply of commodities (the homogeneity postulate); and yet the price level increase must have reduced the real purchasing power of the money supply. He put forward a real-balance (wealth) effect of money holding as an equilibrating force which can affect real magnitudes. He argued (as suggested by monetarists) that household durables should be included in considering the asset portfolio preferences of economic actors, rather than including financial assets only, as in Keynes' examination of liquidity preference. This leads to a theory in which real money balances have a direct effect on purchases of durable goods through portfolio rearrangement on the part of economic actors. Patinkin applied this principle in a neo-Walrasian general equilibrium framework to provide a role for money in which it is non-neutral.

Clower (1967) took issue with this portrayal of money in a general equilibrium framework. His argument is based on extension of his dual decision hypothesis (Clower, 1965) which suggests the separation of wage-earning and purchasing decisions as implicitly underlying the breaking of Say's Law in Keynes' principle

of effective demand. He maintains that money in a neo-Walrasian general equilibrium model needs to be reflected as a finance constraint (his term is expenditure constraint) indicating that economic actors need to be in possession of the required amount of money before they can effect an exchange transaction. He paraphrases this as a situation in which money buys goods, goods buy money, but goods cannot buy goods. This gives money its medium of exchange function. The finance constraint is additional to the budget constraint (which he terms the income constraint) which takes account of the total endowments of agents rather than money held. Clower uses a simple exchange model with discrete time periods and market equilibrium being established at the beginning of each period through a tâtonnement process. Agents receive an endowment of commodities at the beginning of each period. Commodities cannot be carried over to subsequent periods, other than money which is the only durable commodity and therefore serves as a store of value between periods. The quantity of money is fixed. Equilibrium prices and quantities once established are irrevocable.

For any one time period, an agent's endowment of each good is denoted as s_{ij} . The initial money holding of each agent is \underline{m}_j . Agents determine their consumption requirement for each good for the period, d_{ij} , and money balances to be carried forward, \bar{m}_j , in accordance with the price vector (reached through tâtonnement), p . The budget constraint, indicating that the value of consumption and money balances carried forward cannot exceed the value of the initial endowment plus initial money balances, can be stated as:

$$\sum_i p d_{ij} + \bar{m}_j \leq \sum_i p s_{ij} + \underline{m}_j$$

The finance constraint, which requires all transactions to be effected through the medium of money, can be stated as:

$$\sum_i p (d_{ij} - s_{ij}) \leq \bar{m}_j$$

m_t represents intra-period money balances held by the agent, consisting of the initial money balance less purchases and plus sales effected during the period.

The result of the finance constraint in Clower's model is that the inclusion of money plays a role only in the restriction of actual trades which are able to take place. It plays no role in the equilibrium set of prices and quantities which is established by the auctioneer at the beginning of the period. The tâtonnement process has already costlessly pre-reconciled all purchase and sale plans with an equilibrium price vector. Clower concludes that in spite of the introduction of the finance constraint, the general equilibrium model remains formally equivalent to one of barter. A model in which money restricts trading rather than improving efficiencies, and plays no part in determining equilibrium values, does not provide an adequate basis for a theory in which money plays an essential role.

Rogers (1989:88) points out that both arguments are technically flawed in certain respects. He maintains that Patinkin's quantity equation addition to a neo-Walrasian model is similar in principle to the finance constraint proposed by Clower (1989:90). He argues that both writers were traversing barren ground, since the crucial characteristic of a neo-Walrasian model as far as monetary theory is concerned is that it is fundamentally a perfect barter model in which money cannot be accorded an essential role.

Attempts have been made to find a role for money in neo-Walrasian models by dropping the assumption of a complete array of contingent futures markets. This gives rise to temporary equilibrium models, with trading occurring at every date. TE or sequence economies allow the introduction of expectations with trading at each TE point being dependent on the expectations of agents concerning prices and quantities at future equilibrium points. It does not, however, resolve how expectations are determined. Two approaches to formation of expectations in TE models have been adopted: the first is to assume that expectations are formed exogenously to the model, the second is to assume that each agent predicts correctly, on average, all future prices and

quantities using the structure of the TE models. Neither of these approaches is able to produce an essential role for money in the model. The first simply leaves expectations unexplained and is unable to move forward in considering monetary issues: most theorists now consider such a treatment as ad hoc and hence unsatisfactory (Rogers,1989:49). The second, which incorporates the Rational Expectations Hypothesis, reduces the TE structure once again to one that is isomorphic to the Arrow-Debreu model - there is still no essential role for money to play.

Rogers finds that in all cases a neo-Walrasian framework is unable to provide a suitable model for money to play an essential role in the economy. He concludes that neo-Walrasian models are fundamentally models of perfect barter and that we need to "resolve the dilemma of neo-Walrasian monetary theory by allowing that theory to disappear." (Rogers, 1989:67). This is one of the foundation stones in development of a Post Keynesian monetary theory: that the integral connection between monetary variables and the real sector cannot be captured through a neo-Walrasian set of equations being brought to equilibrium by a conceptual auctioneer through a price-adjusting tâtonnement process.

In view of the inability of the general equilibrium framework to allow the plausible inclusion of money in a non-neutral role, Post Keynesians believe that any non-neutral monetary theory needs to be built on an alternative theoretical foundation. The theoretical framework they consider provides a suitable basis for a non-neutral monetary theory is that put forward by Keynes, using the principle of effective demand concept and the notion of monetary equilibrium which underpins the equilibrium level at which the economy operates. This framework introduces monetary variables into the causal nexus determining real and monetary magnitudes in such a way that the non-neutrality of money is a fundamental aspect of theoretical models used. At the same time, this framework is able to preserve the notions of uncertainty and historical time which are regarded as important components of a Post Keynesian analysis. This gives rise to a monetary theory which is squarely in the tradition of

Monetary Analysis and of Keynes' *General Theory*, as elaborated on in the remaining sections of this chapter.

2.3 Interest Rate Mechanism

Post Keynesian views on interest rates can best be seen against a backdrop of Wicksellian interest rate theory, together with the liquidity preference approach and marginal efficiency of capital (MEC) introduced by Keynes. Wicksell sought to extend the quantity theory of money to an economy which has moved beyond the use of commodity money to the use of credit and loans. Wicksell, writing his major work at the turn of the century (Wicksell, 1898:77-78), was fully cognisant of the growing importance of credit money and was seeking to develop a monetary theory that took account of the widespread use of credit in the economy. He argued that in:

a pure credit economy, the exchange rate of money and the level of commodity prices must depend on the price at which 'money' (i.e. in this case credit itself) can be obtained, in other words on *the rate of interest on money*. A low rate of interest must lead to rising prices, a high rate to falling prices. And this is in full agreement with the basic principles of the quantity theory, because a surplus of material money would manifest itself, among other ways, in a lower interest on money.

Wicksell put forward the concept of a natural rate of interest, determined by underlying real forces in the economy, in particular the marginal productivity of capital and propensity to save. Wicksell held the classical view of capital as being analysable as stored labour and land inputs. He regarded capital as being *value* capital, or exchange capital, rather than as individual physical machines. This was necessary to his approach in which movements of (value) capital take place in order to equalise returns to capital in the economy. In equilibrium, a single rate of return on capital prevails, and this equates to the natural rate of interest. The market rate may be above or below this natural rate. The effect of the market rate being below the natural rate is price inflation, resulting from the concomitant surplus of money in the economy, operating

through the quantity theory. Similarly, interest rates higher than the natural rate with corresponding restricted money supply lead to price deflation. This adjustment takes place until the inflation or deflation increases/decreases the real value of the money supply to the point where there is no longer a surplus or shortage and the market interest rate returns to being equal to the natural rate. Wicksell emphasised that it is the difference between the market and natural rates that gives rise to price inflation or deflation rather than the nominal value of the market interest rate itself. The natural rate serves as a centre of gravitation of the system, and it is the market rate that adjusts toward the natural rate.

Wicksell preserved the classical notion of loanable funds as being the proximate determinant of the natural rate of interest. This entails the natural interest rate being determined at the point where the demand and supply schedules for loanable funds in the economy intersect. Although the loanable funds are in the form of money or credit, Wicksell "and other classical economists such as Dennis Robertson" adopt the view that the demand and supply of loanable funds continue to reflect the real forces of productivity and thrift (Rogers, 1989:40). Rogers points out that, although it may make sense to talk in terms of real saving and investment in a one-commodity world, for instance using a simple corn model, difficulties arise once capital consists of machines which are produced rather than saved. Real saving is then no longer equivalent to the retention of a produced commodity for use in production in a future period; it is not equivalent to seed corn in a one-commodity corn model. Rather, the money value of desired saving is supplied to the financial markets as loanable funds, and the notion of real saving is not tenable in a world in which capital goods are produced. Similarly, on the demand side, the consequences of the capital debate indicate that capital cannot be treated as real value capital outside a one-commodity model.¹ The determination of a natural rate through the forces of productivity and thrift is thereby lost outside a one-commodity world. The

¹ The capital debate involved extensive discussion in the economic literature over a considerable period. Only the conclusion is mentioned here, since the debate is not central to this discussion.

intersection of demand and supply schedules for loanable funds needs to be interpreted as applying only to financial and monetary flows in the economy, not to real commodities, to avoid the difficulties raised in the capital debate. It could still be logically valid to argue that their intersection determines the market rate of interest, but the natural rate is left without theoretical foundation. For this reason, Rogers (1989:43) argues that the natural rate of interest is "a concept which must be abandoned and the market rate of interest is left hanging by its own bootstraps".

Keynes' liquidity preference theory provided a view of interest rate determination alternative to those based on loanable funds, such as that of Wicksell, and is central to economic analysis in the world of Keynes and the Post Keynesians. Keynes regarded interest as "the reward for parting with liquidity for a specified period" (1936:167). A liquidity preference schedule could be expressed as a smooth curve with the rate of interest falling as the quantity of money is increased (Keynes, 1936:171). The liquidity preference theory is based on the notion that economic actors will adjust their portfolios of financial assets (including money) through trading in such a way as to reach, in equilibrium, equality of money rates of returns on the spread of assets. Keynes expressed the portfolio composition as a combination of money balances and government bonds to simplify the analysis and explanation of money-related liquidity preference effects. The bonds category could, however, be expanded to include a wide range of marketable financial assets. Of the three motives for holding money put forward in the *General Theory*: transactions, precautionary and speculative, the latter is directly dependent on the interest rate level and is determined through the portfolio preference of economic actors between bonds (interest earning assets) and money. With an increase in the interest rate, agents increase their holding of bonds due to the reduction of bond prices, expectation of capital gain, and the higher opportunity cost of non-interest bearing money holding. Monetary effects are traced through this liquidity preference mechanism in Keynes and Keynesian exegesis; but the liquidity preference theory can be seen as comprising a broader base according to which asset prices and therefore returns on capital move towards equilibrium through

portfolio adjustment processes, as developed in particular by Tobin (e.g. Tobin, 1965). However, a concern raised with liquidity preference theory in its broad sense by for instance Moore (1989), is that there are classes of financial assets which are not marketable (e.g. bank loans). These could not form part of a continuous portfolio adjustment process as is applicable to marketable assets.

Also crucial in the work of Keynes and Post Keynesians is the marginal efficiency of capital (MEC), defined by Keynes as the expected future return of a capital asset, equal to the discount rate which equates the future income and cost stream associated with the asset to the present capital cost of the asset (Keynes, 1936:135). The MEC will differ for individual assets; a schedule can be compiled ranking capital investments from highest to lowest, giving rise to a downward sloping MEC curve in return-investment space. It should be noted that the MEC could refer to the holding of existing capital assets as well as investment in new assets; it will be used to refer to the latter unless indicated to the contrary, in which case the abbreviation MEH provides greater clarity.

The crucial contrast to Wicksellian theory that the combination of liquidity preference and the MEC provides in Keynes' and Post Keynesian analyses, is that the interest rate serves to determine the MEC at which capital investment projects become attractive for entrepreneurs to undertake. The Wicksellian mechanism is reversed, with the MEC tending towards the interest rate level, rather than the interest rate tending towards a natural (real) rate. This was a major component of Keynes' theory of investment and output determination, giving rise to a level which could be below full employment:

the significant conclusion is that the output of new investment will be pushed to the point at which the marginal efficiency of capital becomes equal to the rate of interest; and what the schedule of the marginal efficiency of capital tells us, is, not what the rate of interest is, but the point to which the output of new investment will be pushed, given the rate of interest. (Keynes, 1936:184).

The Post Keynesian concept of monetary equilibrium is built on this point of departure.

With the theory that investment would adjust in such a way as to bring the marginal efficiency of capital to equal the interest rate, Keynes (1936, Chapter 17) sought to provide an explanation of why the interest rate would not adjust in the long period so as to bring the economy to full employment. He regarded all assets as having an own rate of interest comprising a yield element (q), a carrying cost (c) and a liquidity premium (l), so that this net rate of return in terms of the asset itself can be expressed as $q-c+l$. As production and deployment of assets having higher own rates of interest is expanded, their returns will diminish due to the demand for their end products being increasingly fulfilled. In the long period, this should bring all own rates towards equality at a level approaching the own rate on money (with differentials to allow for relative risks). Keynes' explanation of why the money rate of interest would remain too high for the economy to reach full employment is not entirely convincing or clear (Chick, 1983:303). It is based on the own rate of interest on money declining less rapidly than that on other assets so that it eventually becomes the highest rate, rendering further investment in other assets unprofitable. The reasons advanced by Keynes for the peculiarity of money in this regard are its negligible elasticity of production and of substitution (Keynes, 1936:230-234). These, together with its being the numeraire in terms of which money wage rates are expressed, and its negligible carrying cost, result in its maintaining a significant own rate (through the liquidity premium) in spite of increases in its quantity. It is thus the very nature of money which causes it eventually to have the highest own rate of interest, so that further expansion of other assets is curtailed at a level below full employment. This somewhat obscure justification by Keynes can be avoided by taking the rate of interest to be determined exogenously, by convention or by the monetary authorities or a combination of the two, which is more in line with the interest rate view taken by Keynes in the *Treatise* and other parts of the *General Theory*. For example (1936:164), he refers to management of the rate of interest as a means to stimulate the appropriate volume of investment. Full employment is then not reached in the long period due to the

exogenously determined interest rate not being at the rate which enables profitable expansion of assets towards full employment equilibrium. The exogenous determination of the interest rate is the view typically taken by Post Keynesians, as elaborated on below.

Moore (1988a:263-270) is very explicit in expressing an exogenous interest rate view. He regards nominal interest rates as being determined by the central bank, as an administered policy variable. This is in accordance with his view of a horizontal short-run nominal money supply function in interest-money space, with the exogeneity being an intrinsic aspect of a credit-money economy. It is the counterpart of his view of strong endogeneity of monetary aggregates. Kaldor likewise clearly holds the view of the interest rate being under the control of the monetary authority, for instance "a given stance of monetary policy is best expressed by a chosen rate of interest, and not by a chosen quantity of credit money in existence; and, whether the elasticity of the demand for money be large or small, the elasticity of supply of money, given the chosen rate of interest, is infinite." (Kaldor & Trevithick, 1981:318). He is expressing a horizontalist view similar to that of Moore. He follows Keynes' view of long-term interest rates being a major determinant of investment levels and through this establishing an output level which may not necessarily be at full employment. He also holds the liquidity preference view of money demand as propounded by Keynes, for instance, "the distribution of wealth between liquid or illiquid assets is a portfolio decision which depends partly on wealth holders' preferences for liquidity and/or their expectation of the behaviour of interest rates in the future." (Kaldor & Trevithick, 1981:323). Rogers likewise stresses the centrality of the exogenous nature of the interest rate, for instance "the fact that the rate of interest is an exogenous or independent variable cannot be overemphasised." (1989:251). Surprisingly, Davidson does not focus significantly on the determination of the interest rate in his major works (e.g. Davidson, 1978,1982,1994). He clearly adopts the liquidity preference theory put forward by Keynes - and devotes considerable attention to supplementing it with a fourth motive for holding money, the finance motive. Although not put forward in the

General Theory, Davidson points out that Keynes recognised this omission shortly after its publication. The finance motive is taken up in Chapter 3.

It is thus apparent that exogenously determined short-term nominal interest rates, under the control of the central bank, are a key feature of a Post Keynesian monetary view, and that this is regarded as an intrinsic feature of a credit-money economy, rather than an ideal or policy preference. The Post Keynesian view recognises, however, that there are limits within which this exogeneity must operate (Moore, 1988a:266). These depend on the economic circumstances faced by the country, as well as structural characteristics such as the size, degree of openness and government regulatory framework. The limits apply in particular to an open economy, since the interest rate has direct consequences for foreign capital inflows or outflows, and this is taken up in Chapter 3. But even in a closed economy, holding of short-term nominal interest rates at too low a level will result in investment projects being undertaken which are not sustainable in the long run, and to an excessive rate of expansion of economic activity with demand-led inflation (Moore, 1988a:269). Too high a rate would conversely have a severe dampening effect on economic activity and employment. In addition to inflationary/deflationary effects, large and frequent changes in the central bank administered rate is likely to cause severe economic disruption and uncertainty since the basis on which entrepreneurs take investment decisions changes significantly and unpredictably. A sound investment decision today may be rendered foolhardy within days or weeks. This similarly applies to transactions in financial asset markets. A central bank is constrained from moving too far from a current interest rate level in too short a time period in order to meet its goal of stability in the financial system.

The interest rate exogeneity view applies, strictly speaking, to short-term nominal rates. However, Post Keynesian writers recognise a fairly strong relationship from short-term rates through the term structure to long-term rates. This is in line with Keynes' view in which long-term rates are determined by expectations of the future path of short-term rates (Moore, 1988a:252). Moore

appears to regard the relation of interest rates across the term spectrum to the short-term rate as fairly direct, based on weighted expectations of future short rates. Rogers (1989:251), on the other hand, describes a transmission mechanism from short to long rates which "is somewhat elastic and manipulations of Bank rate to change long rates may not always be effective." This is more in line with the Radcliffe Report (1959) which regarded the spectrum of financial assets from short to long term, and with different risk and liquidity characteristics, as being complex and subject to multiple influences. Whether more or less direct, the Post Keynesian view is generally one of causality from short to longer term, rather than short rates varying about a norm or convention in respect of long rates, for instance in the nature of a real rate norm as suggested by Fisher (Moore, 1988a:257), but which has been shown empirically not to be valid. Post Keynesian writers, however, recognise a conventional or psychological aspect to interest rates operating in conjunction with central bank determination. Rogers, for instance, maintains that the interest rate "reflects psychological, institutional and other historical factors which cannot be specified *a priori*." (1989:253). He distinguishes between transitory and persistent changes in market rates, with the former being temporary fluctuations which do not affect the long-term rate and through it investment. The long rate then has psychological and institutional factors built into it and the monetary authorities need to ensure ongoing confidence in the rate to avoid deviations which could cause elastic expectations with a destabilising result.

The mechanism through which the money rate of interest plays its role in integrating real and monetary variables can be described using Keynes' concept of an own rate of interest on a commodity or asset. The own rate refers to a forward differential in terms of the commodity or asset itself rather than in terms of money or another commodity/asset (Keynes, 1936:222). It can be expressed as

$$r_w = (Q_f - Q_s) / Q_s$$

where Q_f and Q_s refer to future and present quantities respectively. Using Fisher's notion of the marginal rate of return over cost, which can be expressed as

$$\text{(future value - present value) / present value}$$

the own rate of interest in terms of money can be expressed as

$$r = (P_f Q_f - P_s Q_s) / P_s Q_s$$

where P_f and P_s refer to the forward and present (spot) prices of each.

Keynes (1936:140-141) regarded Fisher's rate of return over cost as identical with his definition of the marginal efficiency of capital. The own rate of interest (return) in terms of money can therefore be viewed as equivalent to Keynes' MEC. Monetary equilibrium is attained when the money rate of interest equals the money rate of return on durable assets, i.e.:

$$i_m = (P_f Q_f - P_s Q_s) / P_s Q_s$$

for all durable assets, where i_m is the money rate of interest. For each asset, j , the money interest rate can be expressed as an own rate of own interest or MEC, r_j , together with an adjustment factor, a_j :

$$i_m = r_j + a_j \quad \forall j, j = 1, \dots, n.$$

For each asset, a_j can then be expressed in terms of spot and forward prices and quantities of the asset as:

$$a_j = \frac{(P_f - P_s)}{P_s} \left(\frac{Q_f}{Q_s} \right)$$

The adjustment process can be examined using a Marshallian distinction between long period, short period and market period. In long-period

equilibrium, the adjustment factors in all cases are zero as spot and forward prices are identical. This means that the marginal efficiencies for all assets are equal, and equal in turn to the market rate of interest:

$$i_m = r_j \quad \forall j, j = 1, \dots, n.$$

The adjustment factors come into play in providing the price signals for adjustment when the economy is outside its long-period equilibrium. If, for instance, the interest rate is increased to i_{m1} , lending money provides a higher return than holding durable assets, and the demand for these assets falls in the Marshallian market period. In market period equilibrium, with positive adjustment factors,

$$i_{m1} = r_j + \frac{(P_{fj} - P_{sj})}{P_{sj}} \left(\frac{Q_{fj}}{Q_{sj}} \right) \quad \forall j, j = 1, \dots, n$$

The fall of spot prices of durable assets below their long-period supply prices means that these assets can no longer be profitably produced, in accordance with Marshallian analysis. The long-period supply price represents the costs of production, including normal profits, and market prices below this imply lower than normal profits, or losses.

The adjustment process in the short period occurs through the reduced production of durable assets, and thereby of output. This in turn tends to reverse the decrease in the spot prices of assets through reduced supply. The adjustment continues towards long-period equilibrium, at which the capital stock is lower than with the initial interest rate, i_m . Long-period equilibrium is re-attained at the higher interest rate since the reduction in the capital stock has caused the marginal efficiencies of assets, the r_j , to rise. The new long-period equilibrium is

$$i_{m1} = r_{1j} \quad \forall j, j = 1, \dots, n$$

where $r_{1j} > r_j$ for each asset.

Neo-Ricardians (e.g. Garegnani) take issue with Keynes' analysis of the rate of interest, and correspondingly with the extension of Keynes' analysis as outlined above, on the grounds that it is simply a restatement of the neoclassical relationship between natural and market interest rates (Rogers, 1989:229-234). They are also concerned that no theory is put forward for determination of the market rate of interest. It should be clear from the above, however, that the neoclassical natural rate of interest, which is determined by the real forces of productivity and thrift in the form of savings and investment in a loanable funds theory, is not equivalent to the marginal efficiencies of capital which are determined by expected future returns of durable assets compared to their initial cost. The second charge is readily answered by pointing out that Keynes regarded the market interest rate as being largely determined by convention, psychological and historical factors, and Post Keynesians generally regard it as exogenously determined by the monetary authorities within limits: there is therefore no requirement for an economic theory to explain the market interest rate level in the Keynes and Post Keynesian view.

2.4 Principle of Effective Demand

Keynes' principle of effective demand specifically refutes Say's Law. In a Say's Law economy, aggregate demand and aggregate supply schedules would be identically equal across their entire length, since supply at all points gives rise to demand sufficient to absorb the supply. In Keynes' theory, aggregate demand and supply curves are separate, intersecting at an equilibrium point (effective demand point) which is not necessarily at full employment of the economy in either the short or long run. Keynes expresses aggregate demand and supply curves as schedules of total proceeds against employment level. The aggregate supply curve is derived from Marshallian microeconomic underpinnings (Davidson, 1994:164). The aggregate demand curve comprises an income-related component (loosely referred to as consumption) and a component not related to income (loosely referred to as investment). The

consumption component is further analysed in terms of the marginal propensity to consume, which is assumed always to be less than one, giving rise to a non-consumption portion of income, defined as saving. The investment component depends on decisions by firms to acquire newly produced capital assets, and these decisions depend on the marginal efficiency of capital (MEC), interest rate and capital goods market conditions. The MEC in turn incorporates expected future demand conditions, expected costs, economic conditions generally, as well as Keynes' animal spirits.

The investment component of aggregate demand is therefore integral to any Post Keynesian theory of money, since it provides the forum in which interest rate variables interact with capital investment markets to determine real economic outputs. Allied to this is Keynes' liquidity preference theory of interest rates through which funds are allocated to liquid assets (money and similar) or financial assets (bonds, equities, etc.). These views contrast strongly with classical and neoclassical theories, in which one or other variant of the loanable funds theory ensures that the supply of loanable funds is balanced with the requirement for funds for investment, by market adjustment of the interest rate, thereby propelling the economy to full employment equilibrium. No such adjustment takes place in Keynes' principle of effective demand.

In the Post Keynesian analysis, monetary equilibrium is directly linked to determination of the point of effective demand, giving the level of output and employment at which the economy operates. This is crucial, since it is through the principle of effective demand that Keynes demonstrated the possibility of the economy operating at less than full employment, without there being forces to move it towards full employment. In accordance with the previous section, the money rate of interest is regarded as an exogenous-type variable, i_m , based on a combination of central bank determination, convention, psychological and historical factors. The exogenous interest rate gives rise to a particular investment level which balances the marginal efficiencies of assets to the interest rate. This level of investment may or may not be such as to employ all resources in the economy. But since the investment rate is established by

monetary equilibrium, which is a long-period equilibrium, there are no further economic forces towards asset price changes, interest rate adjustment or investment which will cause either aggregate demand or aggregate supply curve to shift. The economy is therefore confined to this involuntary unemployment equilibrium unless the interest rate changes. At the equilibrium point, there is no incentive for entrepreneurs to expand production of capital due to there being no profit from doing so beyond Marshallian normal profits. Say's Law is broken since additional supply does not create its own demand if it cannot be sold at a profit.

The Post Keynesian mechanism giving rise to the point of effective demand takes place through pricing of new capital assets in the fixed capital market. As Keynes pointed out (1936:186), the rate of interest does not equate the demand and supply of new capital investment. Instead, it is the prices of capital goods that bring about equality between the stock of capital goods demanded and that offered. The demand price of a capital good depends on the future income yield that it is expected to generate; the price is given by the future yield discounted at the prevailing interest rate. The supply price, on the other hand, is given by the producing firms' cost functions according to Marshallian short- or long-period analysis. It should be noted that the supply refers to completed capital goods placed on the market, not only to the flow-supply of new capital goods produced. The supply of capital goods can be aggregated from representative capital producing and selling firms, to give a combined supply of existing assets (fixed) and newly produced assets (upward sloping), as shown by $S_k + s_k$ in the diagram below (Davidson, 1994:56-62).

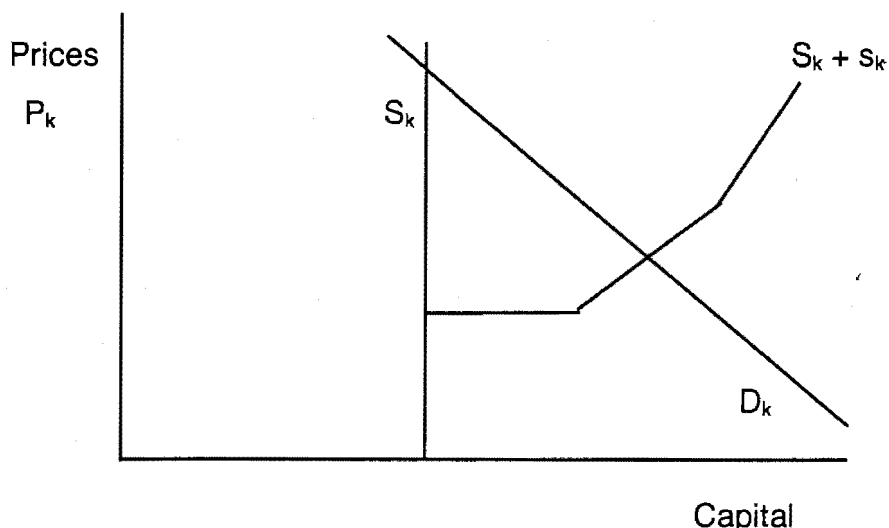


Figure 2.1 Capital goods market

The demand is a downward-sloping curve of functional form:

$$D_k = f(P_k, i, \phi, E)$$

where P_k is the price of capital, i the rate of discount, ϕ the state of expectations about the future profits to be earned, and E the number of entrepreneurs able to obtain the finance required (Rogers, 1989:216). The latter three variables are treated as shift parameters in the price-capital schedule shown. The demand comprises a downward sloping curve, which shifts to the right when the discount rate, i , decreases. Equilibrium is then determined as the intersection of supply and demand curves in the capital goods market, with the interest rate as a parameter rather than an equilibrating variable.

2.5 Investment Behaviour

The marginal efficiency of capital (MEC) schedule of Keynes and the Post Keynesians has expectations and uncertainty built into it. The schedule is not built up from objective or ex post outcomes of capital investment decisions; nor is it based on statistical probability distributions of the likely future income streams of alternative capital investments. Keynes' animal spirits on the part of entrepreneurs therefore affect the MEC directly. Declining entrepreneurial confidence will shift the MEC downwards directly, leading to lower investment at a given interest rate. The schedule also incorporates uncertainty in the

Knightian sense used by Keynes. Entrepreneurs do not know what the outcome of their investment decisions will be, even stochastically in the form of a risk profile, and the MEC is a reflection of what entrepreneurs believe to be the likely outcome in an uncertain environment. Keynes relates uncertainty to the state of confidence, and indicates that, "There are not two separate factors affecting the rate of investment, namely, the schedule of the marginal efficiency of capital and the state of confidence. The state of confidence is relevant because it is one of the major factors determining the former, which is the same thing as the investment demand-schedule." (1936:149).

The rate of investment, i.e. new capital formation, in a Post Keynesian view is a critical determinant of the level of employment in the economy through the principle of effective demand. At the same time, it is subject to the precarious perceptions of the future on the part of entrepreneurs. Keynes devotes eight chapters of the *General Theory* to 'The Inducement to Invest' (Book IV), in which he places great emphasis on the psychological factors involved. The organisation of financial markets in Keynes' view lends itself to speculative gyrations, e.g. : "A conventional valuation which is established as the outcome of the mass psychology of a large number of ignorant individuals is liable to change violently as the result of a sudden fluctuation of opinion due to factors which do not really make much difference to the prospective yield; since there will be no strong roots of conviction to hold it steady." (Keynes, 1936:154). This is the notion taken up by Shackle (1974:42) in coining the term Keynesian kaleidics, i.e. the view that the "expectations, which together with the drive of needs or ambitions make up the 'springs of action', are at all times so insubstantially founded upon data and so mutably suggested by the stream of 'news', that is, of counter-expected or totally unthought-of events, that they can undergo complete transformation in an hour or even a moment, as the patterns in the kaleidoscope dissolve at a touch;".

The work of Minsky (1982,1986,1997) is an important extension of the Keynes and Post Keynesian view of the economic world as being inherently subject to instability. Minsky developed the thesis that instability is bound into the very

nature of a capitalist economy through its financial system. This means that episodes of economic recession or depression will inevitably occur from time to time in a capitalist economy as a result of the interaction of financial variables, and alleviation of such episodes requires suitable government policies and interventions. Minsky's financial instability hypothesis is an example of monetary variables having a major impact on the real economy. It is at complete variance with a neoclassical view that an economy will tend towards a stable equilibrium if market forces are allowed to operate freely and in the absence of continual shocks or disturbances.

Minsky's point of departure is the Post Keynesian recognition that investment is determined in a capital asset market according to the supply price of existing capital assets, the flow-supply price of newly produced assets (investment) and the demand price of capital assets resulting from the expected profit (quasi-rent) stream arising through their productive use. The latter depends on the interest rate which is used to determine the present capitalised value of capital assets. The extent of new investment depends on the relation of demand to supply prices of capital assets: assets with a flow-supply price below the demand price will not be produced, i.e. the investment will not take place. Minsky (1986:191-195) amends the asset supply and demand curves to reflect lenders and borrowers risk. Lenders risk is the risk of default by the investing entrepreneur due to the expected profit stream not being realised. Borrowers risk arises from the possibility that the profit yield from the asset expected by the entrepreneur does not materialise. Lenders risk increases the supply price of capital assets, borrowers risk decreases the demand price. The intersection of the risk adjusted curves gives the price at which capital assets are acquired. Minsky (1986:183-190) distinguishes between internal funds (generated within the enterprise) and external funds (raised from outside parties, typically in the form of bank borrowing). A prevailing combination of interest rates, profit expectations and perceived risks will justify a particular level of external funding by a representative enterprise. To continue the argument, Minsky (1986:206-208) distinguishes between hedge financing, speculative financing and Ponzi financing. Hedge financing is such that expected cash flows from deployment of

the capital asset acquired are sufficient to meet both interest and principal repayments in each period over the duration of the financing. With speculative financing, a shortfall in cash flow yields is expected in some periods, but is expected to be made up in others, so that the financing is fully repayable from yields of the capital asset over the duration of the financing. Under Ponzi financing, yields are insufficient to meet interest and principal payments over the duration of the financing arrangement, so that additional financing will be required at some point to meet the repayment commitments of the initial financing arranged. Whereas entrepreneurs and bankers may enter into financing arrangements on a responsible basis according to the economic circumstances and information available at the time when the financing is provided, these circumstances can and do change over time. Under stable conditions, most financing will fall into the hedge and speculative categories, with Ponzi financing restricted to cases where entrepreneurs mislead bankers, or where investment projects are not adequately assessed. However, an increased interest rate beyond expectations, or other unanticipated adverse economic changes, can lead to hedge financing becoming speculative financing, and speculative financing becoming Ponzi financing. The higher the proportion of Ponzi financing in the economy, the more prone is the financial system to crisis or catastrophe.

Minsky's argument goes further than this susceptibility to adverse economic changes. He argues that fully rational and responsible financing behaviour by bankers and entrepreneurs can build up the conditions for a crisis. This occurs because bankers are reliant on repayment records of the past for determining the terms and extent of financing provided, and profit yield expectations of entrepreneurs are likewise influenced by recent past experience. During relatively stable or growth periods, the risk perceptions of both parties steadily decrease, and the profit yield expectations of entrepreneurs increase, leading to greater leniency in the terms on which financing is provided. As leniency increases, there inevitably comes a time when a significant number of enterprises are not able to meet repayment requirements, even in the absence of other negative changes in the economy, and this can trigger a financial crisis:

enterprises try in vain to obtain additional financing, are placed in liquidation, having negative repercussions for creditors, leading to a downward spiral through reduced confidence on the part of bankers and entrepreneurs for further investment and its financing.

Minsky's hypothesis is one in which the financial system of a capitalist economy carries within itself the seeds of crisis. The source of instability lies in the nature of entrepreneurial investment and its financing by the banking sector. Hart (1992) distinguishes between this view of incipient instability and that of Rogers (1989) which he refers to as potential instability arising from key monetary variables (e.g. interest rates) being conventional rather than determinate in nature. The difference is perhaps more one of emphasis than of theoretical viewpoints, since both regard uncertainty as fundamental and instability as being ever-present. Both regard the instability as arising in the interaction between monetary variables and investment behaviour. For both investment behaviour of entrepreneurs is subject to uncertainty and precarious expectations, as in Keynes, and is closely bound to the monetary sector in such a manner as to result in inherent instability which can lead to crises affecting both monetary and real sectors of the economy. Both consider that this instability needs to be recognised and addressed by adoption of appropriate institutional structures and policy measures.

The investment level in a Post Keynesian framework therefore needs to be seen as precarious and volatile, being dependent on the long-period expectations of entrepreneurs in addition to the market rate of interest and lending terms of the banking sector. The former are subject to a multitude of influences according to the perceptions, assessments and feeling of confidence of the investing entrepreneurs. This view contrasts with a neo-Ricardian view in which the economy moves inexorably toward a long-period equilibrium in which profits (returns) on capital assets are uniform, driven by the investment decisions of entrepreneurs which reflect on average the ex post outcomes and profitability of the investments undertaken. It differs even more fundamentally from a

neoclassical view in which investment by entrepreneurs at or close to an optimal level is virtually assured through market forces.

The Post Keynesian view of investment behaviour also implies that, although the market interest rate is an important variable in moving an economy closer to full employment through the level of investment, it cannot be regarded as a reliable variable in determining the investment level, due to the variety of additional, frequently unpredictable, influences on investment behaviour in a capitalist economy.

2.6 Inflation

The Post Keynesian view of the inflation process contrasts directly with that of monetarists. Monetarists maintain a causal view of the quantity equation in which increases in the price level are directly and causally related to increases in the money stock. Many pages of Post Keynesian writing have been devoted to attacking the tenets of monetarism (e.g. Kaldor, 1986, Moore, 1988a). Post Keynesians place the primary causal mechanisms of inflation outside the money creation process. Representative Post Keynesian expositions of the inflation process can be found in Davidson (1994), Kaldor (1978:214-230), Kaldor & Trevithick (1986), and Moore (1988a:378-381).

Davidson (1994:143) identifies three possible causes of inflation: (1) diminishing returns, (2) increasing profit margins, and (3) increasing money wages relative to productivity improvements.

Diminishing returns inflation refers to the increased costs incurred by firms as output is increased due to the hiring of less-skilled workers and utilisation of older, less efficient capital equipment. The increased marginal costs are passed on in the form of higher prices. Davidson points out that this phenomenon was emphasised by Keynes as "a main reason for rising supply prices before full employment." (1994:143). This form of inflation is unavoidable in the short run if output is increasing under diminishing returns, but may be

offset in the long run through improvements in technology, training programmes and increased capital utilisation per worker.

Profits inflation refers to the increase by entrepreneurs of gross profit margins when market conditions render this possible or even necessary. This is related to the degree of monopoly (versus competition) in the market concerned and in the economy as a whole. It is not necessarily related to changes in aggregate demand, though diminishing price elasticity of demand could lead to rising profit margins with output growth (Davidson, 1994:144). Kaldor (1978:222) associates higher profit margins with higher rates of capital accumulation, and in turn with income re-distribution towards profit recipients and away from wage earners.

Wage inflation refers to increases in money wage rates which are not offset by productivity improvements, and which, with profit margins maintained, are passed on in the form of higher prices. Although it may be easier for workers to obtain greater wage increases when unemployment is decreasing, this source of inflation, in the view of Post Keynesians, is not tied to changes in the level of aggregate output. Wage inflation is rather related primarily to the entire wage negotiation process which takes place in the economy. In this sense, it can be regarded as institutional in origin. Since wage inflation is considered by Post Keynesians to be the primary cause of inflation, the exposition below focusses on the mechanism of this form of inflation.

Kaldor and Trevithick (1981:328) identify the considerations which predominate when unions present their wage demands in the collective bargaining process as: (a) the desire to preserve the wage level of their members in relation to other groups of workers; (b) the desire to appropriate for their members what they consider a fair share of any increases in their companies' profits; (c) to resist any erosion of the standard of living of their members resulting from unfavourable external events such as a rise in the price of fuel or of imported raw materials. (a) in particular plays a strong role in an inflation spiral. In each wage negotiation round, one or a few groups of workers serve as leading groups

due to their favourable bargaining position, which may be the result of rapid productivity growth, profit rises, or increased demand for the skills of the workers concerned. These groups feel entitled to higher wages, and the employers will typically be fairly accommodating to their demands. Other groups, however, perceive the wage differentials between the leading groups and themselves being threatened; they resent the 'leap-frogging' that seems to be taking place. Retaliatory or defensive wage claims are triggered on the part of the other groups. To the extent that wage agreements reached entail wage increases beyond productivity growth, an inflationary process is set in motion.

Kaldor and Trevithick maintain that the above wage negotiation spiral is supplemented by the increased prevalence of oligopolies in modern economies. Owing to their dominance in their markets, oligopolies are not forced to pass on the effects of improved productivity to their customers in the form of lower prices. Leading oligopolies are frequently willing to increase wages in line with their increasing output, in order to enhance labour relations, enable them to select better workers to fill vacancies, and to promote a sense of good will and co-operation in the firm. The wage settlements of leading oligopolies set the standard to which other enterprises are placed under pressure to conform. The objectives of trade unions to increase the real earnings of members, maintain relative wage differentials and obtain a fair share in the value added of their employing firm, are not compatible, and are reconciled to the extent possible through wage-induced inflation. The spiral acquires a momentum due to the differing times and frequencies at which wage settlements take place, together with the discrete intervals at which finished goods prices are adjusted to take account of input costs.

Davidson (1989:149) concurs with the model put forward by Weintraub (1977) which depicts the inflation arising from the struggle over distribution of current income:

$$PQ = kwN$$

where P is price level, Q is real output, w is the money wage rate, N the level of employment and k is a multiple of the wage bill (wN). This can be expressed as:

$$P = k (w/A)$$

where A is the average physical productivity of labour and w/A is unit labour costs of production. k can then be seen to be the gross profit mark-up on unit labour costs. Inflation takes place through rising unit labour cost as a result of the wage bargaining process (as described above) but *also* as a result of increases in the gross profit mark-up attained by firms which is the figure which determines the allocation of income to capital-owners relative to workers. Weintraub is thus extending the income struggle cause of inflation to include the struggle by the owners of capital to maintain or increase their appropriation of the output of productive enterprise relative to labour.

Kaldor (1978) recognises deep-rooted structural trends as a possible additional contributor to inflation. He posits the relative trends of the primary and secondary sectors as a source of creeping inflation, due to the changing relative prices or terms of trade between the two. The primary sector is engaged in production of commodities for which prices are generally demand determined. The secondary sector produces manufactured goods for which prices are generally cost determined. Any imbalance between these two sectors which creates high demand for primary outputs leads to rising commodity prices, and these feed through the secondary sector due to its use of commodity raw materials, with prices being increased in accordance with input costs of commodities. This initially causes an increase in the share of profits in value added, which is counteracted by trade union pressure for increased wages. The terms of trade are swung rapidly back in favour of the secondary sector, but at the expense of inflation. There is an asymmetry in the process due to the different pricing basis of the two sectors, so that a shift in terms of trade away from the primary sector, with reduced commodity prices, does not have an equivalent deflationary effect on secondary sector prices. The process is exacerbated by trade union strength in wage negotiation and by the oligopolistic

nature of competition in the secondary sector, but the underlying source of this form of inflation is the relationship between the two sectors.

It should be noted that money supply increases in the Post Keynesian inflation framework are by and large *accommodatory* only. The only effect of money supply changes is through the indirect route in the case of a restrictive monetary stance, whereby economic activity in general is restricted which in turn leads to a climate in which wage demands are less strident and settlements lower through economic necessity. This view is linked to the endogenous view of credit money, whereby money supply increases beyond credit requirements are simply extinguished through repayment of debt, as taken up in Chapter 3.

2.7 A Formal Model of the Post Keynesian Monetary Framework

As suggested by Rogers (1989), the model put forward by Kaldor (1981) can be used to give a simple formal representation of the Post Keynesian monetary framework. This model makes use of five relationships as follows:

$$PQ = MV \quad (301)$$

$$P = (1 + \lambda) dN/dQ w \quad (302)$$

$$Y = 1/(1 - c) I(i = \underline{r}) \quad (303)$$

$$M = Y/V(i, \underline{j}) \quad (304)$$

$$i = \underline{j} \quad (305)$$

where Q is real output, P the price level, M the money stock, V the velocity of money, N employment, w the money wage rate, λ the percent margin added to direct cost to cover overheads and profits, Y ($\equiv PQ$) is output in monetary terms, c is the marginal propensity to consume, I investment, i the market rate of interest, \underline{j} the exogenously set rate and \underline{r} the MEC.

Equation (301) is the traditional quantity equation which equates the monetary value of output with the money stock times velocity: it does not imply causality in either direction. Equation (302) relates the price level to the level of money wages (w) which is determined exogenously through business-labour negotiations. The price level is determined as a mark-up (λ) over the wage rate

multiplied by the marginal direct labour required per unit of output (dN/dQ , which is the inverse of marginal labour productivity). Although this expression resembles a neoclassical demand for labour function, it should not be interpreted as indicating a causative relation from real wages to employment. It should rather be interpreted as employment determination, based on the point of effective demand given by (303). Expression (303) introduces the principle of effective demand, in which monetary equilibrium, $i = r$, establishes a limit to the profitable expansion of output. Expression (304) is the liquidity preference relation in which the holding of money is dependent on the interest rate (market and exogenously set). Expression (305) sets the market interest rate exogenously equal to i , determined by the central bank and/or by convention.

The exogenous variables in the model are: w , I , i , c and λ ; $Q(N)$ and $V(i,i)$ are behavioural relations. The model has five equations in five independent unknowns and is therefore determinate. The model demonstrates the interaction by which monetary equilibrium leads to an unemployment equilibrium for the economy through monetary equilibrium and the principle of effective demand. The necessary role of expression (304), representing the liquidity preference theory, should be noted. Without this equation, together with (305), the model can be readily incorporated into a neoclassical framework with a loanable funds theory determining the interest rate. Unemployment could then appear as a special, disequilibrium case resulting from wage rigidity or a liquidity trap.

Treating the long-term interest rate, i , as exogenous is consistent with the endogenous money view. Although the quantity equation is present, the quantity theory plays no role. The quantity equation (301) holds at the point of effective demand established by monetary equilibrium, but this is as an identity. Since the neutrality of money and the quantity theory do not apply, the model clearly falls into the category of Monetary Analysis rather than Real Analysis. The operation of the model can be illustrated using an aggregate demand and supply framework, as shown in Figure 2.2.

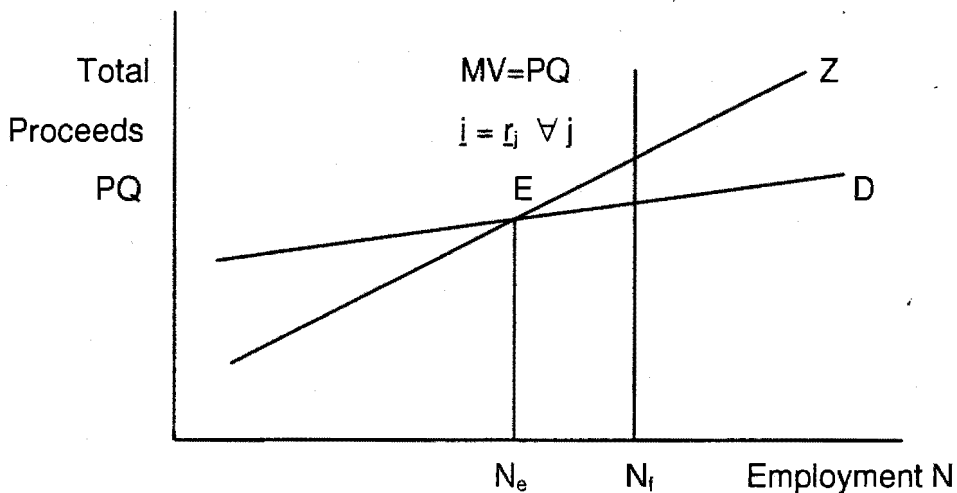


Figure 2.2 Monetary equilibrium : Aggregate demand and supply

Expression (302) can be interpreted as an aggregate supply function, Z , relating expected proceeds, PQ , to employment, N , given the real wage rate, profit mark-up, state of technology and labour productivity. This curve indicates the proceeds at each employment level required to produce normal profits. Expression (303) can be interpreted as an aggregate demand function, D , given the rate of interest, marginal propensity to consume, and long-term expectations. With the long term interest rate i given exogenously, the long period monetary equilibrium, $i = r$, establishes the point of effective demand at E . Competition ensures that this point is reached through the elimination of excess profits as long-period equilibrium is approached. The resulting equilibrium is at employment N_e , lower than full employment N_f . The labour market does not operate as an auction market in which entrepreneurs and workers co-operate to arrive at a market clearing wage rate. On the assumption of an entrepreneur economy, entrepreneurs determine employment in accordance with the expected demand for goods and services. With a point of effective demand established by monetary equilibrium below full employment, there is no rational basis for entrepreneurs to enter into negotiations with workers concerning real wage levels, since they are already earning normal profits. (Rogers, 1989:256.)

2.8 Critique of IS/LM Model

Mainstream Keynesians embraced the IS/LM depiction of Keynes' unemployment equilibrium originally introduced by Hicks and have extended the IS/LM approach to analyse various macroeconomic issues. Post Keynesians are, however, critical of the IS/LM framework on several grounds. The main criticisms raised by Weintraub (1977) are that the framework lacks a price level, the money supply is exogenously determined, and real wage adjustments can lead to full employment. The price level argument is that aggregate demand and income components are expressed in real price terms, whereas Keynes defined and used the wage-unit, approximately equivalent to the average wage, as a key element of his analysis. This gave the IS/LM an inadequate basis for analysing aggregate price changes, leading to its supplementation with the Phillips curve relationship in the 1960s, which was shown to be no longer valid in subsequent stagflation conditions. The role of average wage rates in price level determination could not be incorporated into the IS/LM framework. The money supply exogeneity criticism is clearly in line with the Post Keynesian endogeneity view, but goes some way beyond this in that the construction of the LM curve requires an exogenous (vertical) money supply schedule. The possibility of an endogenous, or partly endogenous, money supply function cannot be accommodated. It is recognised that Keynes treated the money supply as exogenous in the *General Theory*, but Weintraub (1977:53) argues that even he did not envisage that the money supply would remain unaltered as aggregate income and employment increased. An even more fundamental argument is that, in the IS/LM framework, a reduction in the real wage level can drive the model to full employment equilibrium. This is contrary to Keynes' assertion that unemployment equilibrium would persist even under circumstances of fully flexible wages. The IS/LM framework thereby lends itself to the interpretation of Keynes' effective demand below full employment as being due to wage rigidity. Keynes was explicit in rejecting this view (1936:257). The IS/LM framework misses the crucial causal ingredient which gives rise to unemployment equilibrium in spite of full flexibility and adjustment in the labour market.

Patinkin (1990) put forward a defence of the IS/LM framework from a Keynesian perspective. He separated the questions of whether it is a valid representation of the *General Theory*, and whether it is a useful analytical construct. Most of his argument is devoted to the latter, with examples of how the IS/LM framework has been adapted and extended to examine various important economic issues. The usefulness of the framework in analysis under a mainstream Keynesian set of assumptions is, however, not really in dispute by Post Keynesians. It is the former question that is pertinent. Patinkin points out correctly that Keynes himself accepted the IS/LM portrayal put forward by Hicks without protest, and further that Hicks' subsequent distancing from the framework was more on the basis of its being a simplistic and partial portrayal of an aspect of the *General Theory*, rather than denying its validity. The former is not a conclusive argument, since it is widely recognised that there are inconsistencies in the arguments of the *General Theory* and Keynes' perceptions relating to them. As a close colleague and disciple, Joan Robinson herself has commented that Keynes did not always appreciate the full significance of the framework he was putting forward (Coddington, 1976:1262). Further, Post Keynesians are not bound willy nilly to every view and argument put forward by Keynes: the exogenous money assumption is a clear example of Post Keynesian difference from Keynes, amongst others. Post Keynesians do, however, sometimes overemphasise Hicks' criticism of his own IS/LM portrayal. Hicks' distancing is more by way of stressing that the IS/LM portrayal only captures and formalises an important component of the *General Theory*, that it was never intended to be the centrepiece of macroeconomic analysis. This is clear for instance from "... it was never intended as more than a representation of what appeared to be a central part of the Keynes theory. As such, I think it is still defensible." (Hicks, 1974:6). Post Keynesian criticism of the IS/LM framework needs to be seen, therefore, as relating mainly to the inadequacies of the framework for dealing with economic issues and analyses based on a set of Post Keynesian economic assumptions (e.g. partly or fully endogenous money, exogenous short-term interest rates, price inflation being related to wage rates), rather than as being logically or theoretically invalid for all purposes.

Davidson (1994:122-131), for instance, strongly criticises the IS/LM framework as "a failed representation of Keynes", primarily on the grounds that it depicts a separation and independence of real and monetary sectors. He adds the finance motive to develop an alternative IS/LM framework which he considers correctly reflects the interrelationship of real and monetary sectors. He introduces an exogenous government expenditure component to give an ISG equation, and incorporates the finance motive in the form of an additional money demand component negatively related to the interest rate in the LM equation. He demonstrates that this amended IS/LM framework produces results in which any shift in one of the curves produces a shift in the other curve: the real and monetary schedules are interrelated. He uses this framework to illustrate the deficiency of the IS/LM approach, since in any particular analysis the outcome is indeterminate due to both curves shifting. Although not explicitly stated by Davidson, his revised IS/LM framework also clearly entails endogenous determination of the interest rate through the now more complex interaction of IS and LM curves. He does not incorporate a mechanism whereby the interest rate is related to an exogenous rate set by the monetary authorities, and does not take up the issue of the interest rate being exogenously determined. The exercise is nevertheless a demonstration of the difficulties incurred in attempting to use the IS/LM framework with Post Keynesian assumptions.

A revision of the IS/LM framework which accords with an exogenous interest rate view, put forward by Rogers (1989), provides a closer representation of a Post Keynesian view of money using the IS/LM framework. Rogers suggests that, with the introduction of suitable modifications, the IS/LM framework can be used to convey a Post Keynesian point of effective demand equilibrium. He makes use of a model put forward by Meltzer which he considers a suitable basis for a Post Keynesian interpretation, in spite of Meltzer being a monetarist, since Meltzer is seeking to re-interpret the *General Theory* through an IS/LM model. Meltzer's model retains the features of a Say's Law economy, but

Rogers modifies this by appropriate specification of the principle of effective demand.

The model can be expressed as follows:

$$S/w = I/w \quad (311)$$

$$S/w = S(Y/w, \underline{r}) \quad (312)$$

$$I/w = I(\underline{r}, E) \quad (313)$$

$$M/w = L(i, \underline{j}, Y/w) \quad (314)$$

$$Y/w = F(K, N) \quad (315)$$

$$N_d = f(w/P) \quad (316)$$

$$N_s = g(w) \text{ or } g(w, P) \quad (317)$$

$$N = N_d \leq N_s \quad (318)$$

Nominal values are deflated by the money wage rate, w , where appropriate, with S , I , Y , and M having their usual referents of saving, investment, output/income and money stock in nominal terms. K and N refer to capital stock and employed labour respectively. P refers to the price level of goods, E to entrepreneurial income expectations, \underline{r} to natural rates of interest and i to market rates.

This model is Wicksellian in nature, in which the IS curve generates a locus of quasi-natural rates, \underline{r} , while the LM curve generates market rates, i . The adaptation that lends itself to a Post Keynesian interpretation is \underline{j} in (314) which refers to the expected long rate of interest in Meltzer's model, but can be re-interpreted as an exogenous rate set by convention or by the monetary authority. Monetary equilibrium can be illustrated as in Figure 2.3.

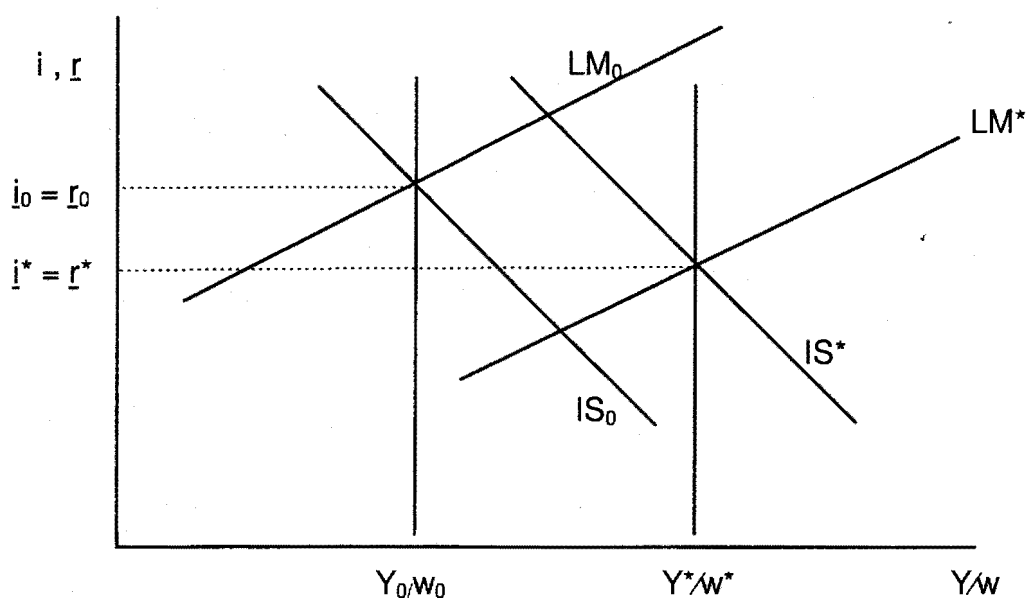


Figure 2.3 Monetary equilibrium : IS/LM

Any improvement in entrepreneurial expectations causes the demand price for capital goods to increase, and the resulting investment reduces the natural rate (MEC), r . However, since i_0 has not changed, the additional investment results in losses, reducing the demand for capital goods, leading to r being restored to equality with i_0 . This process may well occur through cycles of expansion and contraction. If, however, the exogenous interest rate is reduced to i^* , additional capital investments undertaken will generate profits and the IS curve will move out to IS^* . The reduction in the exogenous interest rate will have shifted the LM curve to LM^* . The new equilibrium is therefore at output Y^*/w^* , which could be at full employment with the exogenous interest rate set at its optimal level. Movements along the LM curve represent transitory or short-run disturbances of the money rate around the conventional or exogenous rate; a change in exogenous rate entails a shift in the LM curve.

Use of the IS/LM framework as suggested by Rogers does at least give an indication of the difference between the Post Keynesian view and the neoclassical synthesis view, in terms of the IS/LM framework which is used extensively in the neoclassical synthesis. However, Rogers does not address

the issues of the interdependence of IS and LM curves and resulting indeterminacy raised by Davidson, nor the more fundamental indeterminacy arising from money demand as well as investment being related to expected future levels of interest rate and income, with the expectations being characterised by uncertainty (Shackle, 1974). Even though it may be usable for some purposes, especially to meet the neoclassical synthesis on its own ground, the IS/LM framework does not appear to provide the most appropriate analytical vehicle for Post Keynesian monetary analysis. The IS/LM model is therefore probably best not deployed in Post Keynesian monetary exegesis, which is the view adopted by most Post Keynesian writers.

2.9 Concluding Remarks

There is considerable diversity in the views of Post Keynesian writers on monetary issues: there are also differences in the issues which are emphasised and treated with analytical depth in their respective work. There is, however, a core of common ground which can be regarded as providing a representation of Post Keynesian thinking on monetary issues. Greater clarity of the Post Keynesian monetary view can be obtained through its contrasts with monetarist, neoclassical and Rational Expectations views, as well as its strong criticism of the neoclassical synthesis and related brands of Keynesianism.

The Post Keynesian theory of money is one in which money plays an essential role in determining the level of economic activity at which equilibrium is reached, through the relationship between the marginal efficiency of capital schedule and an interest rate which is determined by convention or by the monetary authorities rather than as an equilibrating variable between the supply and demand of loanable funds. The nature of the interest rate and monetary equilibrium mechanism is such as to produce an equilibrium level of output through the principle of effective demand which will not automatically be at full employment. This remains true to Keynes' original insights of an economy which will not in general move to its full employment level, even though wage rates as well as other prices and markets may be perfectly flexible. The formal

model presented illustrates the Post Keynesian monetary framework which determines the level of aggregate demand, at a point generally below full employment. The critique of the IS/LM model indicates why the orthodox economics of the neoclassical synthesis does not provide a suitable analytical structure for the monetary mechanism put forward by Keynes and the Post Keynesians.

This chapter has sought to bring together the theoretical aspects of the Post Keynesian monetary view under the simplifying assumption of a closed economy. In the next chapter, the issues of how money is created, expanded, contracted and controlled in the Post Keynesian view are examined, and these are taken forward to consider the implications when the assumption of a closed economy is relaxed to allow for international monetary flows between countries and changing exchange rates, especially in the case of a small open economy.

CHAPTER 3

THE MONEY SUPPLY PROCESS AND OPEN ECONOMY ISSUES

3.1 Introduction

This chapter is concerned with the money supply process, first under the assumption of a closed economy, then with international monetary flows taking place. As shown in the previous chapter, monetary variables play a crucial role in determining economic output in the Post Keynesian monetary view, with output not moving to a full employment level through any automatic economic adjustment mechanism. This raises the question whether the monetary authorities are in a position to control monetary variables, and to what extent, especially with a view to moving the economy towards full employment. The monetarist school maintain that the money supply is under the direct control of the monetary authorities, and that they should use this control to apply a steady money supply growth rule to curb inflation. The Post Keynesian view is that, by and large, the authorities cannot control the money supply in a modern-day economy with a private enterprise banking system. This is a crucial difference with fundamental implications for monetary policy.

The next section of this chapter examines the issue of control over the money supply, in terms of its endogeneity or exogeneity. Section 3.3 looks at the implications of the fourth motive introduced by Keynes for the holding of money, the finance motive, on the money supply process. These two sections are based on a closed economy. In Section 3.4 the closed economy assumption is relaxed and the effects of international monetary flows examined. Section 3.5 looks at exchange rate issues under the Post Keynesian view, and Section 3.6 addresses the effects of foreign monetary flows in the case of a small open economy.

This chapter complements Chapter 2 in drawing together a Post Keynesian view of money from a theoretical perspective. It paves the way for examining policy

implications and prescriptions arising from the Post Keynesian view, in Chapters 4 and 5.

3.2 Endogeneity versus Exogeneity

The endogenous view of money creation is a major departure from the conventional wisdom of monetary theory as expressed in text books and mainstream writings and has generated considerable controversy and debate. The conventional wisdom expounded in text books and university teaching over decades has been along the lines of a high-powered monetary base determined directly by the central bank, and a money multiplier dependent on the reserve ratio (set by the monetary authorities) which determines the total size of the money stock. Factors such as preferences by households and firms for holding of physical money (notes and coins) are behavioural parameters which vary only gradually over time. These and other parameters are considered as contributing to a velocity of money (the V in the quantity equation) which is stable over time. According to the conventional explanation, therefore, the central bank is able to exercise tight control over the total money supply through its ability to determine the high-powered base.

The endogenous money view as put forward by Post Keynesians such as Kaldor and Moore holds not only that changes in the velocity of money prevent the central bank from exercising close control over total monetary aggregates, but that the monetary control mechanism itself is such that central banks are unable to control the level of high-powered money. Cottrell (1994a) distinguishes between ways in which money is widely recognised as being endogenous to some degree, and the more deeply held endogeneity view of Post Keynesians. He cites two ways in which money is widely seen as partly endogenous: firstly, where the money supply is regarded as a multiplier times a monetary base, the money multiplier may be recognised as being partly determined by portfolio decisions of private sector actors; secondly, the central bank might be regarded as deliberately choosing to effect control of the money supply indirectly through use of interest rates, rather than through direct control, with money demand by

the private sector accommodating to the interest rate. Implied in the latter deliberate choice is that the central bank has the option to exercise direct quantitative control of the money supply when and to the extent that it wishes. Cottrell characterises a Post Keynesian view as going far beyond these two respects of endogeneity, in which "the central bank simply does not have the option of exercising genuine quantitative control over the stock of money: the accommodation of the private-sector demand for money, at an interest rate of the authorities' choosing, is not a political choice but a structural necessity in a modern credit-money system." (1994a:597).

The endogenous money view has major implications for economic theory. For instance, Moore (1988a:xv) maintains as a consequence:

that the entire literature of monetary control and monetary policy, IS/LM analysis, the Keynesian and the money multiplier, liquidity preference, interest rate determination, the influence of public sector deficits on the level of domestic interest rates, growth theory, and even the theory of inflation must be comprehensively reconsidered and rewritten.

It implies shifting the focus from the magnitude of monetary aggregates to the terms on which money is provided, as well as to the flow of credit in the economy as taken up by Lavoie (1984, 1992) and Rousseas (1986). It implies abandoning the view that increases in monetary aggregates are a major cause of inflation. It implies changes in the monetary policy role of central banks and government treasuries. It also has significant implications for monetary issues in an open economy. These issues are taken up in subsequent sections of this dissertation.

As previously noted, Keynes' own view on the endogeneity issue was unclear and has been subject to debate. In his *Treatise on Money*, and other works, the money supply appears to be treated as endogenous. He treats money as predominantly bank money, with the central bank's lending rate having various indirect effects on the volume of bank money (e.g. Keynes, 1930:194-197). In

the *General Theory*, however, Keynes seems to assume the money supply to be exogenously determined by the monetary authorities. Moore, after examining the evidence in various of Keynes' writings and the development of his views over time (1988a, Ch. 8), concedes Keynes treatment of money as exogenous in the *General Theory*, and offers possible explanations, such as that Keynes wished to provide every possible concession to 'classical' economists, or that this was a lapse in the direction of his thinking. He points out that Keynes introduced the finance motive for holding money into his analysis subsequent to publication of the *General Theory*, and maintains that the finance motive is the conclusive argument for the endogeneity of the money stock. Moore concludes (1988a:199) that, although Keynes did not put forward a clear and consistent endogenous theory of money: "One cannot help but feel confident that with time he would have succeeded in realising his final and full emancipation from the quantity theory".

The view that the supply of money is determined endogenously rather than exogenously is one of the most readily recognised characteristics of the Post Keynesian school, and places its adherents in sharp relief to those of monetarism. Long and intense debates took place over a numbers of years in the seventies and eighties between economists who became leading representatives of Post Keynesianism (such as Kaldor and Davidson) and leading monetarists, especially Milton Friedman, with the endogeneity/exogeneity issue being one of the primary points of contention. The title of Kaldor's book, *The Scourge of Monetarism* (1986), reflects the depth of difference between the two schools. The endogeneity view is closely tied to the perception of money as being primarily credit (rather than commodity) money. In terms of representation of money supply and demand curves in interest-money space, the endogenous money view entails an elastic money supply function. Post Keynesians such as Moore (1988a) regard the function as necessarily infinitely elastic at the interest rate set by the central bank, but others, for example Minsky, regard the function as upward sloping in a stepwise manner, albeit highly elastic (King, 1995:66). In a similar graphical representation, an exogenous view of money implies an inelastic money supply

function. Complete exogeneity would be represented by a perfectly inelastic or vertical money supply function. Moore coined the terms Horizontalist and Verticalist to depict these two contrasting views, which form the title of his book examining these issues (Moore, 1988a). It is the Verticalist view that is adopted by monetarists as well as in the neoclassical synthesis (Moore, 1988a:x-xi).

The Post Keynesian endogeneity argument arises largely from the institutional nature of the provision of credit money. Commercial banks provide loans at a mark-up over cost to borrowers who in most cases have pre-arranged facilities (e.g. overdraft facilities). Borrowers are able to draw loan funds at their initiative up to their facility ceilings. The central bank has a lender-of-last-resort function and, although it can institute higher prices and penalties for commercial bank borrowing from its discount window, it cannot in the final instance refuse to provide funds to the banking system without imperilling the system. Open market operations (at least in the United States and South Africa) have the effect of reducing non-borrowed reserves of the banks, thus driving them to the discount window (directly or indirectly through the market for state bonds, Eurodollars and similar). The banks have neither the ability nor the incentive to call in or reduce their commercial loans, but bid for any funds needed to meet their liquidity requirements, ultimately from the discount window if necessary.

Moore, reminiscent of the Banking School real bills doctrine, argues that credit money can never be in excess supply since any excess would simply be used to repay credit balances outstanding. The quantity of nominal money demanded is thus always and necessarily equal to the quantity of money supplied (1988a: pxiii). Moore examines the workings of the banking system, particularly that of the United States, to substantiate his contention that central banks cannot and do not control monetary aggregate quantitative variables directly. He draws on empirical evidence or stylised facts, partly of an institutional nature, in support of this claim, including the manner in which the monetary base, multiplier, bank lending and central bank actions and policies are determined. He uses evidence from econometric studies to refute the monetarist proposition that a causal relationship exists from money supply aggregates to nominal income. He

argues that the endogeneity of money is not merely the consequence of a flexible monetary multiplier applied to an exogenous monetary base: he regards the base itself as endogenous. He considers central banks to be faced with an asymmetrical situation: "Central banks always possess the ability to *increase* the base, so as to support any increased nominal volume of bank intermediation. But they in general do not have the same ability to *reduce* the base, and with it restrict the nominal volume of bank intermediation." (1988a:15).

Kaldor (1986:24) maintains that: "In the case of credit money the proper representation should be a *horizontal* 'supply curve' of money not a vertical one. Monetary policy is represented *not* by a given quantity of money stock but by a *given rate of interest*; and the amount of money in existence will be demand-determined." He goes on to argue that the central bank cannot, even in principle, control the quantity of money directly, nor the monetary base. "The Central Bank cannot close the 'discount window' without endangering the solvency of the banking system; they must maintain their function as a 'lender of last resort'." (1986:25). His views on endogeneity are therefore similar to the Horizontalist views put forward by Moore as described above.

Davidson places less emphasis on the endogeneity issue than Moore or Kaldor, but his view is clearly one of endogenous money: for instance, "... under the income generating-finance process, an increase in the demand for money induces an endogenous increase in supply *if bankers are willing and able to expand under the rules of the game* that regulate banking operations." (1994:136). He refers to the monetary authority being able to initiate action to increase the money supply, e.g. "the Monetary Authority can exogenously initiate action (open-market operations) to induce the public to hold more or less money balances. By bidding up the price of outstanding government debt (lowering the rate of interest), the Monetary Authority makes it profitable for bondholders to sell some government securities and substitute additional bank deposits as an alternative liquid store of value" (1994:136). This appears to be in line with Moore's view of asymmetry in the monetary authorities' actions,

whereby they can initiate an increase but not a reduction in money supply through open market operations. Davidson does not, however, spell this out clearly.

Rogers (1985:243) asserts that, "In Post Keynesian analysis the monetary base does not determine but *is determined by the money supply*. In other words banks can always get the necessary reserves to support whatever level of liabilities they have incurred. The only influence that the central bank has on this process is to alter the price at which these reserves are obtained." (1985:243). He contrasts this with the monetarist view of the direction of causality. He argues that monetary targeting could still be contemplated, primarily through the indirect means of adjusting interest rates, but that such actions could have unpredictable consequences due to money and credit multipliers not being stable. It is clear, however, from the above that Rogers regards the monetary base itself as being endogenously determined.

The contrast between the Post Keynesian endogenous view and that of money supply exogeneity held by monetarists can be portrayed by the direction of causality in a Quantity Theory equation. Monetarists maintain that causality operates from the monetary base set by the authorities to the money supply:

$$\begin{array}{c} \leftarrow \\ M = mB \end{array}$$

where M is the money supply, B the monetary base and m the money multiplier (Rogers, 1985:244). Post Keynesians maintain that causality operates from the money supply determined by entrepreneurial demand to the monetary base:

$$\begin{array}{c} \leftarrow \\ B = (1/m) M \end{array}$$

Post Keynesians accept the empirical results of the Chicago monetarist analyses, which showed strong correlation between monetary aggregates and money income, but with causality running from planned output to money stock rather than vice versa. Post Keynesians regard increases in monetary

aggregates in advance of economic activity as explainable by the accumulation of funds to meet planned expenditures in the expansion of production. The Post Keynesian view of money creation is bound to the role which credit money plays in the production process. The nature of the money creation process as viewed by Post Keynesians described below is drawn primarily from Moore (1989).

Moore's point of departure is to characterise commercial banks as essentially "retailers in the business of selling credit" (1989), seeking to maximise their profits through the interest rate spread between their average cost of funds (with funds being mainly in the form of bank deposits) and their average lending rate on bank loans provided. Banks seek to set their average lending rates at a mark-up to wholesale fund rates, and their average deposit rates paid as some mark-down to wholesale rates, so as to achieve a target spread on their total volume of intermediation which will generate their required rate of return on the bank's equity. Moore recognises the additional activities of banks, such as holding of marketable securities as assets, but considers the above to be the essential nature of commercial bank activity in view of its accounting for the bulk of bank transactions. Banks can then be regarded as two input, two output firms: with the two inputs being retail and wholesale deposits, and the two outputs retail and wholesale loans. Using the deposit and lending rates set through their mark-up and mark-down to wholesale rates, banks accept all cash and deposits supplied, and meet customer loan requests, provided that these comply with their minimum collateral and risk requirements (with credit ceilings being specified for each loan or facility). The result is that, once each bank has set its retail deposit and lending rates, the volume of deposits and lending is effectively demand-determined by bank customers rather than being directly determined by the bank.

In the case of wholesale deposits and borrowing by the banks, individual banks are price takers and quantity setters in a wholesale funds market. Banks use the wholesale market to manage or balance their liquid asset and liability position. Wholesale assets are used to provide a defensive margin to enable banks to meet cash and reserve requirements arising from high deposit

withdrawals or demand for loans. Banks have a variety of options in adjusting their wholesale funds position: they can draw down deposits in other banks, present Treasury Bills for cash instead of for new Bills, borrow on collateral of eligible securities, sell NCDs, Treasury Bills and other term deposits, or borrow central bank funds. Wholesale assets and liabilities are generally readily substitutable between the various forms, enabling banks to actively manage their wholesale funds position on an ongoing basis.

Moore (1989:22) illustrates the workings of the model diagrammatically as follows:

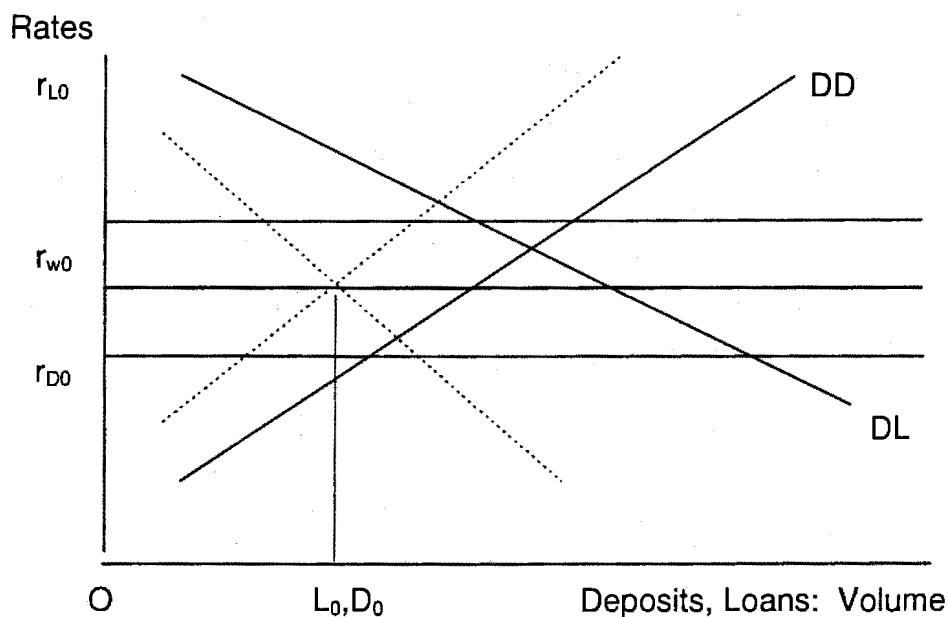


Figure 3.1 Moore's bank intermediation model

He characterises a bank's balance sheet relationship as:

$$R + L + B = D + NW$$

where R = Reserves, L = Loans, B = Net wholesale assets, D = Deposits and NW = Net worth. The demand for bank loans in the diagram is represented by DL , the demand for deposits by DD . The banks set their lending (r_{L0}) and deposit (r_{D0}) rates, and the supply curves become the horizontal lines r_{L0} and r_{D0} respectively.

The marginal cost of bank funds is determined in the wholesale market, shown as the wholesale rate r_{w0} . As banks are price takers in the wholesale market, the supply curve for wholesale funds is given by the horizontal line r_{w0} . Profit-maximising banks will seek to set their rates in each market such that marginal revenue is equal to the marginal cost of funds. For profit maximisation, the marginal revenue of providing loans must be equal to the marginal cost of obtaining deposits, and in turn be equal to the market interest rate on wholesale funds. This gives the profit maximising equilibrium in the diagram at which loans and deposit volumes are $L_0 = D_0$.

Within this framework, Moore maintains that the volume of bank loans or credit is determined by demand at the rate (price) set by the banks. Deposits in turn arise from the additional transactions resulting from the loans and credit advanced. The demand for loans and deposits are interdependent. This interdependence is enhanced by the practice of liability management, in which deposit vehicles are created or expanded as needed, and on suitable terms, to attract the volume of deposits required to meet the volume of loans and credit advanced. Also reinforcing the demand-driven nature of credit money is the extensive use of overdraft facilities. These entail banks allocating credit limits to their clients which at any one time are only partially utilised. Moore gives evidence (1988a:16) that the volume of overdraft credit allocated but not utilised at any time is of the order of 50% of the total overdraft credit available in the United States and the United Kingdom. This means that bank clients are able to draw down additional credit on demand in accordance with their requirements without reference to the banks. Banks cannot summarily terminate overdraft facilities or call in overdraft advances in order to reduce their total volume of lending.

The role that Moore ascribes to the central bank in this model is primarily that of determining the wholesale funds rate. The central bank is not able to reduce or restrict the reserves placed with it by commercial banks in terms of reserve ratio requirements. The reason for this is that the central bank is ultimately responsible for the stability of the financial and banking system of the country. If

it were to refuse to meet requirements by commercial banks for borrowed reserves, this would be likely to cause a liquidity crisis in the applicant bank, and this could readily have a domino effect on other banks, leading to a major banking crisis. In practice, Moore argues, central banks apply penalties and interest rate premiums to discourage commercial bank borrowing, but will always provide borrowed funds at some price to stave off a liquidity crisis. This then reinforces their price control role through the interest rate and any premiums or penalty costs applied to borrowing through the discount window. In this way, it is not only the broader money supply aggregates but the high-powered base that is endogenous.

Moore concedes an exception to this monetary base endogeneity in the case of a severe economic slump when interest rates have decreased to very low levels. Under these circumstances, banks may voluntarily hold substantial excess reserves since the marginal cost of doing so lies below the marginal cost of obtaining deposits. This situation prevailed in the United States in the late 1930s. Under these circumstances, the money multiplier decreases, reflecting the higher ratio of base to money stock, but the base itself could be regarded as exogenously determined by the monetary authority. Moore also regards central banks as being able to initiate large increases in the monetary base during boom conditions. Commercial banks will readily absorb base funds through open market purchase by the central bank of government bills, since this will enable them to expand their lending activities. These are, however, the exact conditions under which the central bank needs to restrict growth of the monetary base. The central bank is therefore not able to set the monetary base exogenously in a way appropriate to the economic circumstances prevailing.

The money supply in the above exposition could be either M1 (notes, coins and demand deposits) or a broader aggregate such as M3 (which includes in addition time deposits of short and long duration). The arguments apply similarly in both cases. Less clear is the situation of the narrow component of money comprising notes and coins only. It would seem that Moore regards notes and coins in similar vein to the rest of the M1 or M3 aggregate. Notes and

coins form part of the high-powered monetary base. It is clear that the central bank can exercise direct control over notes and coins available in the sense that their physical issue and replacement is under the control of the central bank. Notes and coins, however, generally constitute only a small component by value of the M1 money supply (around 10%), and a lower proportion of M3. Even if the central bank were to exercise strict control over this component, it would not negate the endogeneity argument in respect of the M1 or M3 money supply as a whole. In practice, a central bank may allow the issue of notes and coins to be determined by the technical demand to meet transactions and cash holding requirements, even if it is seeking to exert control over the broader money supply, on the basis that notes and coins are a relatively small and stable component. Thus even a monetarist might concede that the notes and coins component of the money supply is frequently endogenous in practice, but this would not affect the substance of the argument in either direction concerning the broader monetary aggregates.

As indicated, Moore's analysis entails a relatively strong view of money supply endogeneity within the Post Keynesian camp: some Post Keynesians (e.g. Davidson, Rousseas) regard the money supply as being partly exogenous, partly endogenous, with the fiat money component in particular being exogenously determined. These issues have been the subject of ongoing debate within the Post Keynesian camp: e.g. the mini-symposium held in 1989, as covered in *Journal of Post Keynesian Economics*, 1989, Vol 11 No 3. It is, however, a characteristic view of Post Keynesians in general that the broad money supply aggregates are not and cannot be directly controlled by the monetary authority, owing to the nature of credit money. The Post Keynesian view is that broad money supply aggregates can only be controlled indirectly through the price mechanism of interest rates, with some additional influence through moral suasion and institutional factors.

3.3 The Finance Motive

Keynes introduced the notion of a finance motive, as an additional cause for the holding of money balances over and above the transaction, precautionary and speculative motives, only after publication of the *General Theory* and in response to criticisms received of his theory of interest. He put forward the notion in three short articles in 1937 and 1938 (Azimakopolous, 1991:109). It appears that, in Keynes' mind, the finance motive was a relatively minor amendment to his liquidity preference theory. Certain Post Keynesian writers, however, regard the finance motive as a crucial link in the analysis of money holding when investment levels are changing, and in explaining the creation of credit independently from saving. Davidson in particular regards the money demand function as being miss-specified without the autonomous component provided by a finance motive (e.g. 1994:124). Rousseas (1986) and Moore (1988a) treat the finance motive as an essential element of a Post Keynesian monetary theory.

The finance motive refers to the liquidity-preference of entrepreneurs with a view to meeting planned business activity. It relates to the liquidity required in advance of entering into forward contracts for new production or for the acquisition of new capital goods to be produced. The finance motive becomes crucial when the general level of economic activity is increasing or decreasing (Davidson, 1994:122). If output is unchanging over time, the requirement for liquidity to meet ex-ante business activity will be provided by the release of liquidity as payments are effected for previously planned business activity. The business activity referred to covers investment in particular, but may also include any other forms of autonomous expenditure (Keynes, 1937b). The increased demand for liquidity to meet the finance motive occurs prior to the additional employment and income being generated. Keynes saw his initial omission of the finance motive as a deficiency in not taking into account the effect of ex-ante output on money demand, as against the effect of ex-post, realised output.

Davidson considers the inclusion of the finance motive to be of material significance because it renders the demand for money no longer directly proportional to output, but dependent in a more complex way as "a function of a function of current output" (1994:125). A demand for money function relative to output would need to be drawn with a positive intercept on the money axis, rather than as a 45° line through the origin, showing dependence on the autonomous component of ex-ante expenditure. This implies an income elasticity for money balances of less than unity along the entire money demand function, contrary to the monetarist assumption of unitary elasticity. It offers a ready explanation for the empirical finding that short-run income elasticities of money demand are less than unity, as an alternative to the permanent income hypothesis put forward by monetarists. It also underpins the interdependence of the real and monetary sectors of the economy, which can be shown with an IS/LM curve analysis in which the (re-specified) LM curve shifts when the IS curve shifts so that the final outcome of a movement of either curve is not readily apparent (Davidson, 1994:129).

The finance motive provides a counter to any empirical evidence that the monetarist school may offer that money supply increases have occurred prior in time to output increases, thereby implying a causal relationship from money to output. The finance motive implies that money supply increases can occur in advance of output increases without being the cause of the latter. It is rather entrepreneurial expectations, together with ex-ante decisions to invest and produce in accordance with the expectations, that can cause an increased money supply in advance of economic activity.

The finance motive, and whether the financial system meets liquidity demands arising from the finance motive, is a crucial issue in considering economic expansion. Any increase in economic activity forming part of the expansion process must be preceded by an increased demand for money in terms of the finance motive. But is this demand immediately and fully met by the financial system, or could expansion be constrained by insufficient provision of liquidity? Keynes was certainly of the view that the banking system could serve as a

constraint in this way. He referred to a "stringency" or "congestion" in the money market resulting from the increased demand for liquid resources, with upward pressure on interest rates (1937b). Post Keynesians have taken this view forward with differences in the degree of emphasis placed on the constraining role of the banking system. Dow (1993:168) maintains that there is evidence of credit rationing by the banking system at both the micro level and in respect of international financing. Rousseas (1986:45) regards the restrictive effect of banks as a short-run phenomenon that comes into play under exceptional circumstances, partly because much of ex-ante demand for money by business enterprises is met from internal funds, partly because additional saving resulting from new investment expenditure soon contributes to meeting the demand for money. He places greater blame for monetary restriction on central banks, owing to their (mistaken) belief that money expansion is the cause of inflation. Davidson (1994:124) appears to concur fully with Keynes' view of possible congestion in the money market, with finance motive requirements either not being fully met at the prevailing interest rate or restriction leading to an increase in the interest rate. He does not see this as contradictory to an endogenous view of money creation, since it is the commercial banks that are applying the restriction, if any, and not the central bank asserting control over the money supply. Moore (1988a:199), on the other hand, regards the finance motive as "the conclusive argument" for the endogeneity of the money stock in that it is the mechanism through which the banking system provides the additional money required to move to a higher level of economic activity, without a necessary role by the central bank.

Keynes (1930:217) made the distinction between Industrial and Financial circulations, the former referring to bank deposits used to meet physical investment and business activity, the latter to those used to meet acquisition of financial instruments. The liquidity demands within the two circulations need not be closely related and the financial circulation could be far more volatile due to speculative movements in the holding of financial instruments. The finance motive, however, applies to both circulations. This has the implication that increased speculative activity in financial markets could be met through the

banking system accommodating the finance motive of speculators in much the same ways as for increased physical investment and business activity. If the banking system is such as to readily accommodate the liquidity needs of expanding (real) economic activity, it may equally serve to fuel speculative activity.

Perhaps the most vital characteristic of the finance motive is that it represents a fully autonomous increase in demand for money based on future expectations rather than any change in current economic variables. The fact that such an autonomous increase in money demand can, in the Post Keynesian view, be met by the banking system without necessary recourse to the central bank implies that the banks can play a major role in expanding the money supply without this being subject to control by the monetary authorities. The provision of money is separated from saving, either current or resulting from the additional business activity being financed. The finance motive appears to go further than Keynes' original intention to reinforce his argument that interest rates are determined by liquidity preference effects rather than as a price equilibrating supply and demand of loanable funds. It supports money supply endogeneity arguments, at least in the banking system portion of the monetary chain, as well as having implications for the financing of economic expansion and for the fuelling of speculative financial activity. The ready availability of unutilised overdrafts in the banking system, as referred to by Keynes and emphasised by Post Keynesians (e.g. Moore, 1988a), enables the finance motive requirement of entrepreneurs to be more easily and rapidly met, and reinforces the endogeneity and related credit-money provision views.

3.4 The Impact of International Flows

Davidson (1982,1994) and Dow (1986,1993) have sought to put forward a Post Keynesian monetary theory concerning international financial flows. This serves as a counter view to the "global monetarism" which is prevalent in the neoclassical synthesis (Dow, 1986:237). It emphasises the impact of monetary variables on the real domestic economy at any stage of the business cycle.

Whereas a monetarist view maintains a sharp dichotomy between fixed and flexible exchange rate regimes, with flexible rates enabling exogenous money supply determination by the domestic central bank, the Post Keynesian view finds little difference in end result across the fixed-flexible exchange rate spectrum. The Post Keynesian view finds international flows generally to be a contributor to economic instability in the domestic economy.

Davidson (1982:97) identifies three adjustment mechanisms which are put forward in orthodox trade theory as tending to correct trade imbalances. They are (1) the real wealth mechanism, with the monetary approach to the balance of payments being a variation of this (2) the neoclassical relative price mechanism and (3) the 'Keynesian' foreign trade income multiplier mechanism. The real wealth or monetary approach, put forward by monetarists, postulates that trade deficits are always and only the result of an excess in real monetary balances in the domestic economy. They assume that there always exists a price vector which ensures simultaneous clearing of all markets, and hence that relative price movements between exports and imports will lead to a re-balancing of the two, thereby eliminating the trade deficit. Equivalent reasoning is applied to a trade surplus. The relative price movements have the effect of increasing the real wealth held by the (temporarily) surplus country at the expense of the deficit country, but with total international wealth unchanged. Adjustments according to this view therefore take place through relative pricing without any significant effect on (overall) real economic variables, with the proviso that exchange rates are fully flexible to allow price movements through market forces.

The neoclassical relative price mechanism relies on a variant of the 'price specie flow mechanism' of classical writers whereby an outflow of specie (gold) or international reserve assets from deficit to surplus country results in relative price adjustments, either directly or through devaluation by the deficit country of its currency. Provided the Marshall-Lerner condition, in which the sum of elasticities of demand for imports and exports of the trading partners exceeds

unity, is met, the relative price adjustments would eliminate the trade deficit without reducing the combined real national income of the two countries.

The Keynesian foreign trade multiplier mechanism assumes an income effect in the surplus country resulting from the increase in imports of the deficit country. Provided that the marginal propensity to import is equal to or greater than the marginal propensity to consume in each country, the income effect in the surplus country will result in an increase in its imports which will at least offset the original increase in imports of the deficit country. The interaction of these marginal propensities to spend in the two trading partners would have an equilibrating effect on the trade balance between them.

Post Keynesians are critical of all three orthodox mechanisms as being based on unrealistic assumptions. The monetary approach *assumes* that excessive domestic money supply creation is the sole underlying cause of the trade deficit, and that the imbalance can always be resolved through flexible prices and exchange rates. The neoclassical relative price mechanism takes no account of income effects of exchange rate changes and *assumes* that there is strong cross substitution between goods across trading partners; it does not take into account the high proportion of goods in most economies which are not internationally tradable. The foreign trade multiplier mechanism *assumes* that marginal propensities to consume and import in each trading partner are such as to create offsetting trade balance effects. This is unlikely in two trading partners, and even less likely in a multinational trading environment. It is also possible that marginal propensities to spend are endogenous variables which are affected by trade imbalances and could have a destabilising rather than stabilising effect on the trade imbalance. The mechanism simply *assumes* that the magnitudes of propensities are such as to have a stabilising and equilibrating effect.

The Post Keynesian view of international flows extends Keynes' concept of liquidity preference to the open economy and allows effects of monetary variables on real economy magnitudes. The exposition below covers fixed

exchange rate and flexible exchange rate cases separately before drawing together the strands of both. It is of course recognised that exchange rate regimes lie along a continuum of which fixed and flexible rates are the extremes. The exposition draws primarily from Dow (1986,1993) and Davidson(1982).

In an open economy with fixed exchange rates, the provision of finance in the domestic economy is enhanced by an overall balance of payments surplus and diminished by a deficit, unless countervailing action is taken by the monetary authorities. If expectations of income and profitability growth in the domestic economy are high relative to the rest of the world, both domestic and foreign investors will buy additional domestic financial and real assets and sell foreign assets. This increases the supply of credit in the domestic economy as well as the elasticity of supply relative to the expected returns. Domestic borrowers are not constrained by the financial capacity of the domestic banking system, as in the case of a closed economy. Funding for investment can be met by reducing foreign asset holdings as well as by decreasing idle balances of domestic money. These changes in asset holdings from foreign to domestic are undertaken without significant financial risk since the central banker serves as market maker at the specified fixed exchange rate. Assets can once again be converted from domestic to foreign at the same exchange rate at any future date that the asset holder chooses. The interaction between liquidity and productive asset acquisition operates in a manner similar to that in the closed economy, but with provision of financing, and liquidity preferences, occurring across international borders. This implies a vastly greater pool of funding being potentially available to finance asset acquisition in the case of favourable relative returns as well as wider alternatives for the holding of liquid funds (money or idle balances). It also implies the availability of credit in the domestic economy being outside the control of the monetary authorities (if indeed they are able to exercise any control over credit in the closed economy case). Foreign funding inflows will tend to supplement domestic funding during upswings in the business cycle, where perceived marginal efficiencies of capital on real investments are greater than prevailing domestic interest rates. This will have the greatest effect at the end of the upswing when financing is becoming

constrained (markets congested), serving to extend or prolong the final stages of the upswing. Conversely, foreign funding outflows during the downswing of a business cycle will tend to extend and prolong the lowest portion of the cycle since the removal of liquid funds from the domestic economy delays the point at which short-term interest rates have fallen sufficiently for investment once again to start rising as a result of the MEC being above the interest rate.

The above effects will be dampened by measures which the domestic monetary authority takes when foreign reserves fall to unacceptably low levels or increase excessively. Monetary authorities will seek to alleviate low foreign reserves through increasing domestic interest rates to attract short-term foreign capital or through direct arrangement or encouragement of foreign borrowing. This excludes, of course, the more drastic actions of foreign exchange controls which would need to be separately considered. The analysis could be extended by treating the effect of the trade balance, short-term capital and long-term capital flows separately. Short-term capital flows are influenced primarily by interest rates, whereas long-term capital flows are influenced primarily by expected returns on physical investment (the MEC). This can result in short-term and long-term capital flows partially offsetting one another over certain stages of the business cycle. The MEC may improve through a positive trade balance increasing actual and expected returns on physical assets, in the form of greater export earnings, especially relative to import costs.

In the case of purely flexible exchange rates, the balance of payments has no direct effect on the nominal money supply, since net international financial flows are assumed to be fully eliminated through the immediate adjustment of the exchange rate. The real value of the money supply is, however, affected through appreciation or depreciation of import prices through exchange rate changes. Domestic liquidity is also affected through differences in maturities of assets which are being bought or sold by foreigners: purchase of domestic long-term assets by foreigners with contemporaneous sale of short-term assets, or purchases by domestic residents of foreign bank deposits, would leave the overall balance of payments (and exchange rate) unaffected, but would affect

the domestic liquidity structure. These two indirect effects on the domestic money supply are strongly influenced by expectations of exchange rate appreciation or depreciation. It is money demand that is primarily affected, rather than supply as in the case of fixed exchange rates.

Expectations of expansion in the domestic economy encourage purchase by foreigners of domestic medium- and long-term assets, which results in appreciation of the exchange rate. Anticipated further exchange rate gains lead to further purchases of the domestic currency, to be held speculatively or for conversion to domestic longer-term assets. The indirect effect of increasing the real value of the money supply contributes to this process being pro-cyclical. When the domestic economy is close to its expected peak, sale of longer-term assets for currency results in increased monetary demand. The currency appreciation and its attendant indirect effects are thereby extended. As the currency is sold for a foreign currency, however, downward pressure is exerted on the exchange rate. With a reverse process occurring for the purchase of longer-term assets as the economy draws out of a trough, exchange rate depreciation is extended. Over the course of a business cycle, this view of international currency effects indicates an accentuation of the cyclical movements, with sharper upswings and declines.

Dow (1993:67) maintains that, in the case of a largely self-sufficient economy, the trade and short-term capital flows tend to offset long-term capital flows over the course of the cycle. The rise in nominal short-term interest rates in the later stages of the upswing, lasting through to near the middle of the downswing, is likely to attract short-term capital inflows and encourage a continuation of exchange rate appreciation. Similarly, low interest rates prevailing well into the upswing will result in short-term capital outflows to practically offset longer-term inflows. This leads Dow to the view that there is no inherent tendency towards major instability in the exchange rate, even though international flows under flexible exchange rates increase the scope for instability across the business cycle.

The Post Keynesian view therefore finds that international monetary flows tend to increase instability in the domestic economy, with this being the case under a fixed or flexible exchange rate regime, and by implication any dispensation between the two. In both cases, international funding flows tend to be restricted when most needed in the domestic economy, and readily available when least needed. Although Post Keynesians generally view the money supply as already substantially or entirely endogenous in the case of a closed economy, the Post Keynesian analysis of the open economy case indicates additional sources of domestic monetary expansion or contraction outside the control of the monetary authorities. If any partial exogeneity view is held in the closed economy case, this is eroded to the extent that the economy is open, through international monetary flows, under fixed or flexible exchange rate regimes. The international monetary flows, as with domestic money, have significant and enduring effects on the real domestic economy.

3.5 The Exchange Rate and Foreign Reserves

Post Keynesians are generally supportive of exchange rate systems towards the fixed end of the flexible-fixed spectrum, typically favouring a strongly managed or fixed but adjustable exchange rate regime. Davidson and Dow have examined international monetary issues extensively from a Post Keynesian perspective, while other leading Post Keynesian writers such as Moore, Kaldor and Rogers comment on international flows in broader terms. The portrayal of a Post Keynesian view of exchange rates and international flows below draws mainly on Davidson (1982,1993,1994) and Dow (1986,1993), incorporating views of Rogers (1989) as well as the debates at the Mini-symposium on Reforming the World's Monetary System, as covered in the *Journal of Post Keynesian Economics* of Winter 1992-1993.

Monetarists maintain that exchange rates are price-signal variables which tend to equilibrium values through the operation of market forces. They are therefore strong advocates of flexible exchange rates, a position enhanced by their view that flexible exchange rates are necessary for national monetary authorities to

exercise full control over the domestic money supply. Post Keynesians are sceptical of the assumption that exchange rates tend towards equilibrium values in a stable manner, and some (e.g. Rogers, 1989:287) argue that exchange rates, if allowed free rein, are inherently unstable.

Davidson (1982,1994) distinguishes between Unionised Monetary Systems (UMS) and Non-Unionised Monetary Systems (NUMS). A UMS is a monetary system in which spot or forward transactions are denominated in the same nominal unit, or in different nominal units with fixed conversion rates and negligible conversion costs, and in which the conversion rates are expected to remain unchanged over the life of contractual arrangements. Any regional monetary system within a single country is generally a UMS, but more pertinently it refers to an idealised system of fully fixed exchange rates between a group of international trading partners. A NUMS in contrast refers to a monetary system in which there are differing monetary units with varying conversion rates between them. This corresponds to the case of flexible exchange rates between trading partners. In similar fashion to measures of the degree of openness of an economy, Davidson suggests that there could be a measure of the degree to which a monetary system is non-unionised based on the variability of exchange rates between trading partners, though conceding that this could be an ex-post measure only, not taking into account expected variability. The UMS/NUMS distinction is essentially an abstraction of the contrast between fixed and flexible exchange rate systems, which Davidson uses to provide clarity to the characteristics of each. The terms emphasise the systemic nature of international monetary regimes across groups of trading countries, whereas the terms fixed and flexible exchange rate may be construed as relating to a single economy trading with the world. The latter terms are used below because of their wide acceptance.

Davidson draws a parallel between the motives for holding money put forward by Keynes for a closed economy, and the requirements for meeting international transactions. He emphasises the essential role of uncertainty in an international as well as domestic monetary context. Foreign reserves provide a means for

meeting transactions requirements which are characterised by uncertainty. Contrary to the monetarist view that flexible exchange rates reduce the need for foreign exchange holding by central banks to a negligible level, the Post Keynesian view anticipates that foreign reserve holdings are required under flexible exchange rates to much the same extent as with fixed exchange rates due to the uncertainty in rates and volumes of foreign transactions.

Post Keynesians view flexible exchange rates as being a source of increased instability rather than stability compared to fixed rates. If the exchange rate of a currency changes, transactors have no basis on which to tell whether the currency will move further from its original rate, or whether the change will be reversed towards its original level. This renders exchange rate expectations elastic, and provides opportunities for speculators. Speculation can drive exchange rates far from any Purchasing Power Parity or similar equivalence. The Post Keynesian view is that there is no natural or equilibrium value to which exchange rates will tend. Changes in exchange rates relative to expected future values induce portfolio shifts, with consequent purchases or sale of foreign currencies, and price changes through these transactions, which may reinforce the initial exchange rate change.

Post Keynesians counteract the monetarist view that flexible exchange rates enable the monetary authorities of a country to pursue a monetary policy independently of occurrences in trading partner countries. Monetarists assume implicitly that domestic residents do not view foreign currencies as a substitute for the local currency for holding of liquidity. This assumption implies that monetary authority actions such as open market operations will affect the holding of domestic currency only, without a secondary effect on foreign currency holding. In this view, the flexible exchange rates provide a price vector such that there are no net movements in foreign currency holdings by residents in response to domestic monetary policy measures. Post Keynesians argue, however, that economic agents will hold expectations of relative movements of foreign and local currency values and may well acquire or dispose of foreign currency holdings in response to monetary circumstances in the economy,

including those which are consequences of monetary policy actions. There is thus no insulation mechanism between domestic and foreign money supplies, even with purely flexible exchange rates. For instance, if there are expectations that the foreign currency will have greater stability in purchasing power than the local currency, then residents will place a greater proportion of their liquid funds in the foreign currency as a store of value, pending the future time period in which contractual payments will fall due. This will create downward pressure on the domestic exchange rate, reducing imports and the corresponding exports of the foreign country, which may be alleviated by the foreign central bank through its creation of additional currency to meet the demand for its currency, thus increasing its money supply. If the foreign central bank does not respond by allowing an increase in its money supply, the upward pressure on its exchange rate will continue, with consequent reduction in its exports and increased unemployment. Monetary policy actions in the domestic economy will thereby have been translated into an increase in the foreign country's money supply and contraction in the domestic money supply, even though this may not have been the policy intent of the domestic monetary authorities.

With fixed exchange rates, since alternative currencies are near-perfect substitutes for each other for purposes of a store of value (barring convenience and relatively small conversion costs), portfolio compositions between domestic and foreign currencies will be far less affected by monetary policy measures and changes in expectations, according to the Post Keynesian view. Currency holdings will be predominantly determined by transaction flows. The Post Keynesian view recognises that the central bank is not able to pursue an independent monetary policy under a fixed exchange rate regime, but maintains that monetary policy independence is also not achievable under flexible rates, and considers the flows under fixed exchange rates to be less volatile. For this reason, a near-fixed or strongly managed exchange rate regime is regarded as preferable. However, the implication of interdependence of monetary flows and hence of monetary policies, is that monetary authorities need to recognise this interdependence and seek monetary policy co-ordination between countries having extensive trade relationships.

Dow (1986) illustrates the international flows occurring in an open economy under fixed exchange rates. Expected income or profitability growth relative to the rest of the world encourages domestic and foreign investors to sell foreign assets and purchase domestic assets, which increases the domestic supply of finance. With domestic firms having direct access to foreign creditors, they are not constrained by the expansion capacity of the domestic banking system. In the case of a contraction, the reduced supply of money due to capital outflows is offset by a reduced demand for domestic balances as foreign financial assets are substituted. But the effect of this in reducing foreign exchange reserves forces implementation of measures aimed at restraining income, which worsens the contraction. All in all, the effect of the openness of the economy relative to a closed economy is that cyclical expansions and contractions tend to be amplified. The same applies to supply shocks and any other spurious changes: openness renders the economy less stable and exchange rate mechanisms need to be such as to achieve the greatest possible degree of stability.

Davidson (1993:153) maintains that the flexible exchange rate system, set up from 1973 after the Bretton Woods international payments system was abandoned, has not served the global economy well, and was "sold to the public and the politicians under false advertising claims." Whereas monetarists favoured the complete flexibility of exchange rates on the grounds that this would lead to efficient resource allocation through the pricing mechanism, the Post Keynesian viewpoint is that the inherent instability of financial markets and expectations renders such a system subject to large speculative flows and exchange rate changes which are not based on underlying economic realities. Rogers (1989:291) maintains that, "Under these conditions foreign exchange markets attract speculators who can exploit the elasticity of expectations to make gains. The volatility of interest and exchange rates under these conditions serves no useful purpose in promoting capital accumulation and growth - if anything it discourages it." Rogers' argument implies that there is no natural rate that can be objectively determined to which actual exchange rates will adjust. Unbridled flexibility brings to the fore the indeterminacy of

Shackle's kaleidic world, or the shifting equilibrium in the classification of Kregel (1976).

The view taken on the exchange rate mechanism stems from the underlying theoretical view of economic reality held by Post Keynesians. With the economic world being characterised by uncertainty and nonergodicity, "there need not exist any simultaneous internal and external equilibrium to which the economy can converge." (Davidson, 1993:171). This implies that a Purchasing Power Parity system as suggested for instance by McKinnon (1990), in which exchange rates are calculated according to PPP rates in the respective countries and money supplies adjusted to maintain these rates, would not be sustainable due to the large speculative flows which would take place. Post Keynesians advocate, rather, what amounts to exogenous determination of exchange rates. This implies setting or targeting of exchange rates by monetary authorities, but with adjustments made according to economic circumstances.

Davidson (1993) points out that in the post-Bretton Woods flexible exchange rate system, the onus is placed on the debtor country to adopt adjustment measures when its currency is weakening and foreign reserves running low. He quotes Keynes in support of shifting this burden to creditor countries, rather than "on the country which is (in this context) by hypothesis the weaker and above all smaller in comparison with the other side of the scales which (for this purpose) is the rest of the world." (Davidson, 1993:155). These issues are taken up in Chapters 4 and 5.

The Post Keynesian view is thus broadly in favour of a fixed but adjustable, or strongly managed, exchange rate system, with the onus placed on surplus trading nations to initiate corrections to payments imbalances, without relieving the deficit trading nations of all discipline to restore balance.

3.6 Monetary Effects of Flows on a Small Open Economy

As noted by Hawkins (1995), various views and definitions have been expounded as to the characteristics which categorise an economy as "small and open", focusing on both the size and openness aspects. The alternative definitions are not central to this dissertation. The concern for the small open economy situation lies with the possibility that the South African economy is best examined using this characterisation when considering international trade and monetary issues. For this purpose, the analytic approach and classification of a small open economy is most pertinent. According to this classification, an economy is small and open if its international trade relations are best characterised as price-taking (due to relative smallness in the world economy), with the world economy not significantly affected by its actions, but with international trade forming a large enough proportion of economic activity to have a material impact on the domestic economy (Hawkins, 1995:51).

This classification forms a parallel to the individual firm of microeconomics in an environment of perfect competition. It is similarly a device to allow systematic analysis under a set of assumptions rather than a rigid classification system. With this approach, the degree of openness is a more important consideration than absolute size (whether measured by GDP, population, or another aggregate), and an economy is typically taken to be 'open' if the ratio of imports to Gross Domestic Expenditure, or exports to Gross Domestic Product, is greater than 20% (e.g. Mohr & Rogers, 1991). On this criterion, the South African economy could certainly be classified as 'open' with a ratio of around 30% in 1996. Its classification as 'small' can be argued on the grounds, using the analytic approach, that it is generally a price-taker in world markets with a relatively small effect on the world economy.

The implications of a Small Open Economy (SOE) classification for international monetary flows and effects lie in its heavy dependence on international trade flows, at prices over which it has minimal control. An typical characteristic of a SOE is a bias towards capital and intermediate goods in its imports, due to the

domestic capital equipment production sector being relatively smaller than in large economies. These characteristics do not change the general Post Keynesian open economy analysis in respect of monetary issues as presented above, but do have some specific implications.

The price-taker characteristic of a SOE, together with the large component of imported goods in the economy, has the effect of transferring price changes in the rest of the world into the domestic economy. This is exacerbated by the imported products for the most part not having close substitutes in the domestic economy. Imports therefore tend to be price inelastic. A consequence of this is that an exchange rate appreciation has little effect in reducing import volumes but is fully reflected in increased import value through the price effect. Monetary authorities are therefore frequently forced to adopt deflationary measures in the domestic economy in order to reduce import demand. This affects the investment component of domestic aggregate demand in particular, since this is the component with the strongest propensity to import. Under flexible exchange rates, rather than a rapid correction of import volumes through exchange rate changes as would be predicted by the monetarist approach to the balance of payments, a higher exchange rate is likely to cause higher domestic prices (contributing to inflation) without improvement in the trade balance until domestic economic activity is dampened sufficiently to reduce import values. This renders domestic monetary policy strongly subject to exchange rate movements rather than being under independent control of the domestic authorities. Contrary to the monetarist view, this implies reduced control over monetary aggregates by the monetary authorities rather than leading to money supply exogeneity. It does, however, also restrict the latitude of the monetary authorities in determining interest rates. Under fixed exchange rates, greater stability is achievable since import values are affected only by import volumes and price effects occur only through relative price movements in domestic and trading partner economies. Balance of payments correction can be effected through volume adjustments in the domestic economy, for example through export promotion or through a strong interest rate to dampen new investment, without the price and value effects of exchange rate movements.

The above situation under flexible exchange rates is exacerbated by the fact that SOEs typically use net foreign inflows on the capital account of the balance of payments to finance a deficit on current account. Within limits, this is an appropriate policy for an SOE to adopt, since the foreign capital inflows are financing imports of real capital equipment, enabling the domestic economy to expand. Fluctuations in international perceptions and expectations can, however, lead to rapid changes in the willingness of foreigners to provide financial capital, with corresponding changes in the exchange rate, and slow changes in import volumes even with policy intervention. The SOE is therefore tied further to having its domestic monetary, and fiscal, policies strongly affected by international perceptions of the domestic economy.

Given the 'small' aspect of the SOE classification, the feedback effects of the domestic economy via the world economies is negligible. An increase in import value of the domestic economy, for instance, implies a higher value of exports from its trading partners, which, without the 'small' assumption, could result in increased export demand for products of the domestic economy. Under the 'small' assumption, this mechanism, however, provides no alleviation for a deficit on the balance of payments current account. Measures to depreciate the currency in order to stem imports have no easing effect on foreign prices resulting from the reduction in demand for imported goods. The price inelasticity of imports implies significant depreciation of the domestic currency to achieve a required reduction in import value. The export-promoting effect of the currency depreciation may be constrained as a consequence of the curbing of imports, both through reducing capital equipment imported, which is needed to expand production for exports, and through the increased price effect of imported materials and equipment which forms part of the cost of production of exported products. The combination of these effects gives rise to a situation in which balance of payments issues are a major factor in domestic economic policy and progress in a small open economy, and may be the limiting factor to the rate of economic growth, as argued by Thirlwall (1978, 1997).

3.7 Concluding Remarks

The money supply process in a Post Keynesian world entails primarily endogenous money creation through financial credit extension in a closed economy, with money holding being dependent on the motives of transactions, precautionary, speculative and finance. The addition of the finance motive in meeting new expenditure funding plays an important role in the Post Keynesian framework, and contributes to the argument that money is created endogenously through the banking system. Extending the analysis to the case of an open economy provides further sources of money creation to meet the above four motives, with the introduction of possible destabilising forces on the domestic economy, especially under a regime of flexible exchange rates. A fixed exchange rate regime, or a Unionised Monetary System, is shown to be theoretically preferable in a Post Keynesian analysis due to the greater stability afforded through the effects of international monetary flows. This translates into a strongly managed exchange rate regime, rather than flexible rates, in practice. The Small Open Economy exhibits features which make effects of flexible exchange rates in the Post Keynesian analysis even more deleterious to the domestic economy. The conclusions of the Post Keynesian analysis are strongly at variance with those of the global monetarist view, or the monetary approach to the balance of payments, in which the independence of domestic monetary policy can be attained through perfectly flexible exchange rates.

Likewise, the implications for monetary policy of the Post Keynesian view of money are in many respects diametrically opposed to the policy prescriptions of monetarism. In the following chapter, the implications of Post Keynesian monetary theory for monetary policy in general is explored, before examining the implications for South Africa specifically in Chapter 5.

CHAPTER 4

MONETARY POLICY IMPLICATIONS

4.1 Introduction

The Post Keynesian view of money has significant implications for monetary policy, arising both from its theoretical analyses and from its precepts concerning the nature and functioning of a capitalist economic system. Many Post Keynesians have followed in the tradition of Keynes, who was active in considering economic policy issues as well as contributing to the advancement of economic theory. Contributions on policy issues are further supported by the commitment in the Post Keynesian camp to examination of real-world economic behaviour, to the use of stylised facts from economic experience, and to taking into account the role of economic institutions. Post Keynesian writings on policy issues have been particularly strongly addressed to counteracting the views and policy prescriptions put forward by the monetarist and similar groupings, but include a broad set of policy aspects which follow logically from the school's theoretical precepts. Although views on monetary policy expressed by adherents to a Post Keynesian view share much common ground, there is again considerable variety in specific views and policy prescriptions advocated. There are also aspects of monetary policy in which little has been put forward by writers who are clearly identifiable as Post Keynesians.

This chapter seeks to draw together Post Keynesian work concerning monetary policy issues, supplemented where necessary with implications drawn from the Post Keynesian monetary theory as put forward in the previous chapters. The chapter looks at the policy variables regarded as important in a Post Keynesian view, the role of interest rates in monetary policy, implications of the endogenous view for money supply and credit extension policies, the combating of inflation, exchange rates and foreign flows. It concludes with issues concerning the role of the central bank in monetary policy, and the effects which the investment and deficit financing activities of the central government can

have on monetary policy. The chapter concerns itself with policy implications of Post Keynesian monetary theory in general, prior to the examination of implications for South Africa in particular which are taken up in Chapter 5.

4.2 Policy Variables

The implication of an endogenous theory of money, together with an interest rate determined by convention or exogenously by the monetary authorities, is a reversal of the key policy variables as viewed by monetarists and neoclassical economists. The money supply or money stock (by any defined aggregate) is no longer the key monetary variable over which close scrutiny and control by the central bank is imperative, as in the monetarist view. Whereas monetarists see growth of monetary aggregates as directly causally connected to inflation (through time lags) as well as a potential source of economic instability, Post Keynesians view monetary aggregates as passively adjusting to the demand for money and credit according to interest rate levels, investment activity and income. The level and growth of monetary aggregates are thus taken off centre stage in a Post Keynesian policy view as being neither controllable by the authorities nor crucial in any economic causal chain. This should not, however, be seen as diminishing the importance of money in the Post Keynesian scheme: the existence and attributes of money remain crucial. It is simply that other aspects of money are regarded as most appropriate for policy intervention purposes. In Post Keynesian monetary policy analyses, the interest rate takes centre stage as being both controllable by the monetary authorities and a key determinant of the level of investment activity through which, in terms of the principle of effective demand, the economy can be brought closer to full employment. The central bank is regarded as exercising monetary policy primarily through the level of interest rates, using as its instrument variable the discount rate, and any penalty premiums applied, at which the banking system can obtain borrowed reserves (taking account of foreign reserve issues, especially in the case of a small open economy). This operates in conjunction with the reserve requirement placed on commercial banks, as well as open market operations which have some impact on interest rates at the margin. The

central bank has its primary effect on short-term rates through the discount window structure, but can also have an effect on the interest rate structure (yield curve) through open market operations and other financial market activities.

Post Keynesians deny the causal validity of the quantity theory and place virtually no role with monetary aggregates in combating inflation: With inflation regarded as an institutional phenomenon through the money-wage contracting process, anti-inflation measures are not considered a key component of central bank policies. Combating inflation instead becomes the primary responsibility of executive government (the Treasury or Ministry of Finance, with co-operation from other ministries). This places Post Keynesians in direct opposition to monetarists in respect of policy prescriptions for combating inflation.

The principle of effective demand, together with the view of entrepreneurial expectations as being subject to a variety of influences under conditions of uncertainty and therefore unpredictable, places investment as an important policy variable in the Post Keynesian framework. This raises the possibility of state involvement either to stabilise investment, or to adopt measures to bring the level of investment closer to a full employment level. Keynes referred to the 'socialisation of investment' as a policy option which he favoured (Keynes, 1936:378). This should not be seen as a socialistic stance, as taken up further in Section 4.8 below.

Although the money supply as a whole, whether broad (M3) or narrow (M1), is not an important policy variable in the Post Keynesian framework, importance is accorded to the extension of domestic credit to the private sector. This is not regarded as a control variable, being demand driven, but serves as an indicator of new credit generation in the economy. It is a variable to be monitored, through which monetary policy measures can then be determined.

Also contrary to the monetarist view, the exchange rate of the country's currency is regarded as a policy variable in a Post Keynesian framework. The typical monetarist view is that the exchange rate is best left to find its own market level

under a freely floating exchange rate system. The Post Keynesian view is that the exchange rate should be either set, and adjusted when necessary, under a fixed exchange rate system, or strongly managed, with the level and adjustments to it being determined by appropriate monetary policy for the circumstances of the economy, and in support of other economic policy measures. The exchange rate is therefore regarded as an important monetary policy instrument under the control or influence of the central bank, in conjunction with other aspects of monetary policy.

4.3 Interest Rates

As shown in Chapter 2, Post Keynesians by and large adopt the liquidity preference theory of interest rates, rather than a loanable funds view in which interest rates are market determined through equilibrium between demand and supply of credit. The central bank plays a crucial role in interest rate determination: in the words of Moore (1988a:258) "Credit money is not supplied according to some production function, with a real resource cost and a rising supply price. Rather it is supplied on demand by the central bank as the residual provider of system liquidity, at a supply price determined exogenously within wide limits as a policy variable by the central bank itself.". This is the Horizontalist view whereby, whenever the central bank adjusts its discount rate (alternatively referred to as bank rate or minimum lending rate), the money supply function, which is horizontal in interest-money space, shifts vertically upwards or downwards.

It is the nominal interest rate which is being adjusted by the central bank. However, when it comes to the determination of investment and therefore the demand for credit, it is ex ante real rates which entrepreneurs are relating to the marginal efficiency of capital on alternative investments (Moore, 1988a:264). Inflation and inflation expectations therefore play a role in the credit demand process.

Central banks are subject to several factors which limit the range over which they can set the discount rate. A zero nominal rate provides a technical limitation, since bank depositors can always maintain their deposits in the form of money, with a zero interest rate. But even in a deflationary environment in which a zero nominal rate may be a significantly positive rate in real terms, central banks cannot set a rate substantially below the rate of inflation without risking excessive credit-driven money growth which could lead to high inflation and even hyperinflation. Setting the rate too high, conversely, will discourage potential borrowers due to the high ex ante real costs of borrowing, relative to expected investment returns. Aggregate demand growth will fall below its potential, with rising unemployment and falling capacity utilisation.

Thus the interest rate is a monetary policy instrument which the central bank can use to exercise an expansionary or restrictive credit policy. This bears some resemblance to the expansionary or restrictive monetary policy in a monetarist framework, with the crucial difference that here the effect on credit and the money aggregates is occurring indirectly through changes in the interest rate. The interest rate gives rise to higher or lower monetary aggregates through its effect on the demand for credit; there is no direct influence by the central bank on the monetary aggregates. The monetary aggregates are regarded as only a minor contributing factor in the inflation process, as against being the sole or primary ultimate factor as in monetarism. Increases in monetary aggregates are regarded as a consequence of additional credit extension and expenditure rather than a cause of increased expenditure.

Although the clear-cut implication of the Post Keynesian view is that central banks need to focus their attention on the interest rate as the primary monetary policy variable, the issue of what constitutes the appropriate interest rate level under any given economic circumstances is far more complex. With complete knowledge of economic variables and a closed economy, central banks should be striving for that interest rate which draws forth the maximum investment rate which the economy's consumption demand, and its growth, can sustain. However, the authorities generally do not have full knowledge of the linkages

between consumption demand and investment requirements, and in any event the investment function is subject to the vagaries of expectations of entrepreneurs. Added to this are the complications of too low a rate contributing to increased inflation, and, once the openness of the economy is taken into account, of interest rate differentials relative to other countries and the effects these have on the exchange rate and foreign reserves. The setting of the discount rate by the central bank therefore becomes a matter of fine judgement, using the information which the bank does have together with its understanding of likely effects of rate changes according to its conceptual framework and the priorities of objectives to which it is committed.

Post Keynesians generally take the view that it is the entire spectrum of liquid assets that is important to economic policy rather than a particular money supply aggregate, however defined. This accords with the Radcliffe Committee view, following its investigation into the monetary system of the United Kingdom completed in 1959 : "Our view is different. Though we do not regard the supply of money as an unimportant quantity, we view it as only part of a wider structure of liquidity in the economy . . . *It is the whole liquidity position* that is relevant to spending decisions and our interest in the supply of money is due to its significance in the whole liquidity picture The decision to spend thus depends upon liquidity in the broad sense, not upon immediate access to the money": (Radcliffe report, 1959:132). The relative proportions of funds held in alternative financial assets influences economic behaviour, given that each has differing degrees of liquidity, risk and return. The spectrum of liquid assets has a range of interrelated interest rates; although the discount rate as a short-term marginal rate to banks has a dominant influence, the central bank is able to exercise influence over the interest rate structure, from short to long rate, through open market operations and reserve asset policies. The Radcliffe Committee regarded debt management policies covering the spectrum of interest-bearing, marketable financial assets as the fundamental domestic task of the central bank in which it seeks to "provide various types of debt in the amounts and proportions in which the public desires to hold them - subject to the Bank's powers to influence the public's preferences by altering the relative

yield on various types of debt." (Kaldor, 1986:13). The Radcliffe view, supported by Kaldor, is that the central bank should have a positive policy concerning interest rates from short to long term and the relationship between them.

With the prominence of monetarist views in the late 1970s and the adoption of outward monetarist targets and terminology, the question has been raised by Post Keynesians as to whether the behaviour of central banks was in fact monetarist in accordance with their rhetoric. Kaldor (1985b) points to the episode, from May 1979, when Britain's Conservative government adopted outwardly monetarist policies. Money supply targets were set, using Sterling M3, with the initial target set at 7-11%. Actual money supply grew by 22%. With re-based targets the following year, money supply growth was again far in excess of the target. The attempts to restrict money supply growth were accompanied by increases in the Bank's minimum lending rate, and a severe recession ensued. The question arises as to why, if it was exerting control over an exogenous money supply, the Bank could not achieve the target set even within a broad margin for error. Did this not indicate that it was in fact using the interest rate as the policy instrument, with only an indirect influence on the money supply? Kaldor cites a similar episode for the United States, covering its adoption of an outwardly monetarist policy stance over approximately the same period. Rogers (1985a:245) also quotes from a senior official of the South African central bank on how monetary measures are actually effected (as in 1984/85) to show that these are effected through interest rates, e.g. "Realisation of the monetary targets is to be effected by the authorities' operating on the level of interest rates rather than on the amount of banks' cash reserve holdings. The banks' cash reserve holdings in fact, will continue to be a derived quantity..." (Meijer, 1984:12). There is thus considerable evidence for the proposition that central banks use the interest rate as the primary policy instrument even when they are adopting an avowedly monetarist policy of money supply control.

4.4 Money Supply and Credit

The endogenous view of money adopted by Post Keynesians implies that the monetary aggregates cannot be used directly as an instrument of monetary policy by the central bank. At most, monetary aggregates can be used as an indicator variable of credit activity in the economy from which a policy stance using other instruments can be adopted. Lavoie (1984) makes the point that it is new credit extension to the private sector which is the more important indicator variable for monitoring expansionary economic activity: for example, "the decisive factor according to the post Keynesian view is the flow of credits. In talking of the 'stock of money', we are yielding to convention and habit of mind. The money stock is in fact the resulting factor of the expansion of credit." (1984:775). This stems from recognition that money is introduced into the economy through the embarking on new productive activity on the part of entrepreneurs. New credit extension is therefore a forerunner to expanded economic output.

Post Keynesians do not deny that central banks can and do set reserve requirements with which commercial banks must comply. However, they maintain that the textbook base-multiplier causality process does not occur in practice because central banks always provide a lender-of-last-resort function, through which banks can supplement their reserves with borrowed reserves, at a price equal or related to the discount rate. Post Keynesians are not necessarily advocating a change to the reserve requirement system itself; simply a recognition that it does not serve as a quantity control device over the money stock.

Post Keynesians do, however, advocate some degree of control over the spectrum of marketable financial assets in the banking system. Rousseas (1986:103) for instance feels that the Radcliffe Committee was on the right track with:

It might be supposed that we should substitute for the traditional control of the money supply a complex of controls over that wide range of financial institutions. Such a prospect would be unwelcome *except as a last resort*, not mainly because of its administrative burdens, but because *the further growth of new financial institutions would allow the situation continually to slip from the grip of the authorities*. (Radcliffe report, 1959:134).

The concern which the Committee expresses here is that the financial system is so innovative as to be able to introduce new credit vehicles to circumvent any controls placed on existing vehicles. The Radcliffe Committee recommended instead that interest rates, including the term structure applicable across different financial assets, should be used as an indirect means of changing the liquidity composition in the banking system. Rousseas (1986:106) maintains that the very attempts by authorities to exert direct control over the money supply have resulted in an ever-expanding plethora of money market instruments (CDs, NCDs, sweep accounts, NOW accounts, Super NOW accounts, etc.) which have made the money supply concept less and less clearly definable and open market operations more and more difficult to undertake effectively. With this background, Rousseas proposes direct, selective controls on financial assets to influence the allocation of credit between forms of economic activity. This could be in favour of new investment activity in preference to financial speculation, or could be in favour of certain economic sectors the expansion of which would be economically beneficial to the country.

Although Rousseas may be going further than most Post Keynesians would venture concerning direct liquid asset controls by monetary authorities, such a view is a logical extension to the widely held Post Keynesian view that the monetary authorities should be engaged in the financial asset market in order to influence the extent and direction of credit flows. This in turn is a consequence of the Post Keynesian view that the level of activity in the economy is determined by the principle of effective demand, which will not ensure full

employment, necessitating appropriate intervention by the state to bring the economy closer to its full potential.

Two other money/credit related policy interventions which find favour with Post Keynesians are the use of supplementary reserves in over-full employment circumstances and the use of an asset related reserve requirement. The first requires banking institutions to hold a certain proportion of their deposit liabilities in specified government securities, in addition to the normal reserve requirement. The so-called 'corset' operative in Britain in the 1970s is an example of this. The second entails basing reserve requirements on assets held by banking institutions rather than their deposit liabilities. The advantage of this approach is that it would give the monetary authority control over the liquid asset structure of the banking system, enabling it to influence the flow of credit in the economy. Differentiation of reserve requirements for different classes of assets would enable the monetary authority to exercise its influence over the forms of credit which need to be expanded or restricted according to the circumstances of the economy.

The softer endogeneity view of money adopted for example by Davidson and Rousseas allows for an exogenous component of the money supply. Davidson (1989:489) identifies two money supply increase processes: (1) the "income-generating finance process" involving planned increases in expenditure relating to future income generation, and (2) the "portfolio change process" whereby bank deposit liabilities are provided in exchange for other financial assets. Davidson regards the former as endogenous, the latter as exogenous. He is thus allowing for the possibility that the central bank could maintain control of a portion of the money supply through the base-multiplier, reserve asset process. This may be of little significance to monetary policy since the overall money supply generated by the two processes would be indistinguishable between the two. The monetary authority would still not have a definable magnitude which it could monitor and control, and a major portion of the combined money aggregate would be endogenously determined. This is tantamount to recognising the money supply as endogenous for monetary policy purposes.

4.5 Combating Inflation

With the Post Keynesian view of the inflation process as being primarily in the money-wage negotiation sphere and economic institutional structure, the emphasis moves from the control of money supply aggregates by the central bank (in a monetarist framework) to a broader range of policies and initiatives on the part of executive government. Central bank measures need to support government anti-inflation policies, but are not the primary weapon for addressing inflation. In the words of Rousseas, "The solution to the problem of maintaining a stable price level is not to be found in monetary policy, but 'in the realm of wage negotiations.' In short, an *incomes policy* is a prerequisite for price stability." (1986:101).

Post Keynesians have proposed several incomes-type policies to reduce inflation, of which the Tax-based Incomes Policy (TIP) (which Davidson attributes to Weintraub) is perhaps the best known (Davidson, 1994:149). The philosophy of this policy is that wage increases in excess of productivity growth are harmful to society as a whole, and therefore justify a tax in a similar way to taxes imposed on firms for contributing to environmental pollution. The proposed tax would operate through the corporate tax structure and be applied to firms awarding wage increases above a specified norm based on average labour productivity increases. To counteract the additional administrative burden of such a tax, Weintraub recommended that it be applied only to firms above a specified size: in the case of the United States, he recommended the largest (approximately) 2000 firms, which account for over 50% of GDP. This would cover sufficient of the firms playing a lead role in wage setting to be effective through the economy as a whole. The administrative burden would not be great for large corporates, which already maintain the record-keeping required for such a tax. Small enterprises, which would be negatively affected by the administrative requirements, would be entirely exempt from the tax. To counteract any deflationary effects of the additional tax, Weintraub recommended that TIP taxes collected be re-channelled back to firms in the

form of tax reductions, with a net benefit to those firms not awarding inflationary wage increases.

Incomes policies could be of various forms, from voluntary agreements by major representative bodies, to reward based or penalty based (tax) variations. Post Keynesians generally regard some form of incomes policy to be necessary to counteract the incipient inflation-generating wage bargaining tendencies in the economy. They furthermore maintain that such a policy needs to be established as a permanent institution if inflation rates are to be curtailed on an ongoing basis, since relaxation will allow self-interest and the struggle over income distribution to ignite the inflation process. Post Keynesians regard an incomes policy as preferable by far to a monetarist policy which "can fight inflation only if it indiscriminately reduces aggregate demand sufficiently to inflict widespread economic losses to convince entrepreneurs that they must fight workers' wage demands for they will not be able to pass along inflationary wage demands." (Davidson, 1994:150).

In placing incomes policies at the forefront of inflation control, Post Keynesians are not denying a role for monetary policy entirely. It is, however, a role in the context of an endogenous money supply with focus on credit flows, instruments, and interest rates. Rousseas (1986:116) concedes that Post Keynesian monetary theory has not addressed flow of credit issues adequately: "The problem of controlling the paths it takes by controlling the flow of credit through the economy remains - a problem most Post Keynesian monetary theorists have ignored. Post Keynesian theory must therefore move in the direction of combining selective credit controls with a permanent incomes policy." Moore (1988a:264) accords an inflation-related role for monetary policy via interest rates, for instance, "It follows that nominal interest rates should not be administered by central banks substantially below the expected inflation rate, in order to prevent excessive credit-driven monetary growth and the possibility of hyperinflation." He is implicitly recognising that excessive credit creation can lead to demand inflation: this is apparent for instance from, "In a closed economy the growth rate of potential output imposes a somewhat flexible ceiling

on the rate at which real output can expand, after which any excessive growth of aggregate demand financed by bank credit must become inflationary." (1988a:267). But interest rates are clearly the key policy control variable. Moore also makes the point that, under inflation, in order to have the same effect on the level of planned net deficit spending and so on the growth rate of real aggregate demand, nominal interest rates established by the monetary authorities must be proportionately higher than they would be if prices were stable (1988a:387). This means that aggregate output achievable under inflation is lower than that achievable with stable prices due to the higher real interest rate required. Inflation control through an incomes policy enables a more expansionist monetary policy to be pursued, leading to higher aggregate output growth.

The Post Keynesian view fully recognises import prices as a contributing cause of inflation, and advocates policies to ameliorate import price effects. This is contrary to the monetarist view in which import price increases constitute relative price changes only, unless the money supply is increased to accommodate them. Under a fixed exchange rate system, any price increases in a foreign country translate into higher import prices in the domestic country when goods from it are imported. A general price inflation in a foreign country is transmitted to the domestic economy to the extent that goods are imported from it. Under a flexible exchange rate system, there may be a degree of compensation for inflation rate differentials through adjustments to exchange rates, though Post Keynesians are sceptical of this in view of the degree of speculation in foreign currency transactions. Post Keynesians maintain that inflation could be transmitted under either exchange rate regime, and that the domestic economy cannot be insulated through flexible interest rates. They advocate targeting of the country's exchange rate, under a fixed but adjustable, or strongly managed, exchange rate system, as the preferable policy alternative relative to flexible rates. Foreign country price increases and inflation differentials can then be accommodated as best possible through an appropriate domestic currency exchange rate, without being subject to speculative swings. It is recognised that management of the exchange rate is

complex, needing to take account of interest rate differentials between countries as well as financial flows. Exchange rate policy is covered separately below.

4.6 Exchange Rates and Foreign Flows

In support of their preference for a fixed but adjustable, or strongly managed, exchange rate mechanism, Post Keynesians cite the stronger world trade performance in the Bretton Woods period from 1947 to 1973 than either prior or subsequent periods. For instance, after considering average growth and inflation figures, Davidson (1993:154) asserts: "The free world's economic performance in terms of both real growth and price level stability during the Bretton Woods period was unprecedented. Moreover, even the record during the earlier gold standard-fixed exchange rate period was better than the experience during the 1973-1991 period of flexible exchange rates."

Davidson (1993) puts forward a proposed world monetary system in accordance with Post Keynesian monetary views. The main components of such a system are: (1) Creation of an international unit of account and reserve asset (referred to below as the IMCU) held only by central banks. (2) Guaranteed convertibility by each central bank of IMCUs to its domestic currency, with international transactions ultimately clearing via an international clearing institution (ICI). The IMCUs would provide an international reserve with no leakages since it would be held only by central banks. (3) Initial exchange rates for each currency would be set by the central bank concerned, probably based on prevailing rates. (4) Private contracts would be denominated in a domestic currency agreed by the parties involved. (5) Provision by the ICI of advances to central banks on agreed terms. (6) A mechanism to encourage creditor countries to spend excess credit balances on imports, direct investment or foreign aid. (7) A system to stabilise the purchasing power of domestic currencies relative to the IMCU. This would be based on fixed exchange rates with adjustments to reflect 'permanent' changes to efficiency wages. (8) A mechanism, by agreement, to adjust the exchange rate (relative to the IMCU) of a country in increments where it incurs persistent deficits or surpluses on its

current account. This would (systematically) adjust the terms of trade and overall standard of living of the country.

Key aspects of such an approach are the fixed exchange rate system, with incremental adjustments to reflect underlying economic variables, and the onus placed on creditor (rather than debtor) countries to address ongoing surplus accumulations. In arguing against flexible rates, Post Keynesians maintain that, rather than allowing countries to pursue independent monetary policies, they have forced linkages of money supply and interest rate policies between trading countries. Flexible rates have also been subject to major speculative pressures, often requiring joint remedial action by central banks to alleviate the adverse trends, supporting the Post Keynesian view that such markets are inherently subject to elastic expectations and volatility.

The Post Keynesian model can be contrasted with two proposals submitted by neoclassical economists, McKinnon (1990) and Williamson (1987). These seek to address the difficulties experienced in international currency flows under flexible exchange rates, but implicitly assume the (long-run) neutrality of money and a quantity theory of inflation causation.

McKinnon's proposal can be characterised as a fixed nominal purchasing power parity system, and Williamson's as a target zone fixed real rate system. McKinnon (1990) recommends a system in which central banks announce targeted fixed nominal exchange rates set at approximately sustainable purchasing power parities. Once set, central banks would adjust their domestic money supplies to maintain these nominal exchange rates, and consequently, the domestic inflation rate in internationally traded goods relative to the country's trading partners. Williamson (1987) recommends a system in which countries negotiate mutually consistent targets for real exchange rates and nominal domestic demand growth such as to achieve internal and external balance in the medium run. Internal balance is associated with the non-accelerating inflation rate of unemployment (NAIRU) concept, external balance with a sustainable current account balance. Under the arrangement, exchange

rates would be permitted to fluctuate within a broad range (approximately 10%) around the target 'fundamental equilibrium exchange rate' (FEER). This is regarded as a buffer zone within which countries would not be required to take adjustive action.

Along the continuum between fully flexible and fully fixed systems, both proposals involve substantial shifts towards the fixed end, relative to previous monetarist proposals and the existing post-Bretton Woods system. The proposals do recognise the need for a greater role by central banks in managing exchange rates, based on underlying economic variables. Both proposals, however, are based on the premises that money is neutral in the long run, inflation is determined by money supply growth under the control of monetary authorities and that markets produce stable outcomes. It is only under money neutrality that McKinnon's nominal exchange rates based on purchasing power parity could remain applicable: the process relies on monetary policy adjustments by central banks to maintain the rates, but if these measures are non-neutral, the resulting changes in the real economy would necessitate a different set of PPP-based exchange rates. Similarly, Williamson is assuming that monetary authorities can achieve internal balance through monetary policy to control inflation, without affecting the long-run NAIRU of the economy. If monetary policy effects are non-neutral, economies may move ineluctably beyond the buffer zone. Williamson's system would also be susceptible to sustained speculative pressures: he concedes the proviso for operation of the system that speculative changes do not lead to prolonged and substantial movements away from equilibrium.

Although Post Keynesians would no doubt support the shift towards fixed exchange rate systems on the part of monetarist and neoclassical economists, the crucial policy proposal differences therefore lie in the role accorded monetary policy in the respective domestic economies. The monetarist-aligned proposals accord central banks the role of inflation control via an exogenous money supply, as a means to achieve stable parities between exchange rates. The Post Keynesian approach entails a direct mechanism of exchange rate

adjustment, based on changes in relative real costs of production between trading countries, inflation rate differentials, and on excessive surpluses or deficits built up by particular countries. The Post Keynesian approach caters to the possibility of speculative pressures by enabling countries to exercise control over capital flows and through having an international reserve currency of stable value, held by all central banks.

Moore (1988a:271) focuses on the interaction between interest rates and exchange rate in an economy, particularly if it is in the 'small open' category. In free capital markets, arbitrage adjusts the differential between domestic and foreign interest rates to be equal to the expected capital gain or loss through changes in the exchange rate over a period, given by the spot-forward exchange rate differential. With free capital movements, a change in domestic interest rates provides the opportunity for domestic borrowers to source funds from foreign countries with lower interest rates, or foreign countries to source funds from the domestic economy at lower interest rates, leading to large flows through the foreign reserves market. This can cause significant increases or reductions in the country's exchange rate. Although Moore advocates that the exchange rate be treated as a policy variable by the monetary authority, he is recognising that there are limitations on the range over which the exchange rate can be varied due to the necessity to maintain foreign reserves at an adequate level, and that the authority's interest rate policy needs to be co-ordinated with its exchange rate policy. He suggests the possibility of some degree of interest rate co-ordination between central banks of trading partners to enable exchange rates to be better co-ordinated, but recognises the difficulties of having central banks co-ordinate measures which are primarily their domestic preserve.

4.7 The Role of the Central Bank

The Post Keynesian monetary view has major implications for the economic policy role to be filled by central banks. The monetarist influence has led to the role of central banks in many countries being more narrowly defined in recent years, with an overriding focus being given to the stability of the country's

currency both domestically and in terms of foreign trade. Allied to this has been vehement monetarist appeals for independence of the central bank, in which their primary concern is to ensure that central banks can maintain a strict growth rule on monetary aggregates in order to minimise inflation, without being subject to wider government economic policies or political pressures. The monetarists recognise that a strict monetary growth rule will in most cases involve economic restriction and hardship in the short run, which is likely to be politically unpopular, leading to pressures on executive government to alleviate the monetary policy stringency. The arguments concerning central bank independence need to be examined against the backdrop of this monetarist influence.

The institutional framework adopted in New Zealand for conduct of monetary policy from 1989 is a leading example of practical implementation of the narrow overall goal and independence of the central bank in accordance with monetarist-inspired thinking. Inflation targets of long duration are agreed between Government and the Reserve Bank, with the Governor of the Reserve Bank being held accountable for meeting the targets, to the extent that the incumbent may be dismissed from his position if the targets are not met. The Reserve Bank is accorded the sole overall objective of price stability; real economic objectives are explicitly excluded from its ambit (Archer, 1997). Within this restricted framework, it is free to use any monetary instruments and measures to attain the inflation targets set. Archer regards this as a formal rule system at the ultimate target level, with the Reserve Bank having discretion at the instrument and intermediate target level. The rule system is clearly and explicitly intended to remove any possible political influence from Reserve Bank measures to combat inflation. At the same time, the monetarist persuasion of the system is evident from its presumption that the Reserve Bank's monetary policy is the sole or primary determinant of inflation and that its monetary policy has no significant effect on real economic magnitudes.

With the Post Keynesian view that the primary causes of inflation lie in the money-wage negotiation process and institutions, rather than money supply

growth, domestic stability of the country's currency cannot be regarded as the major goal of the central bank. At most, the central bank would play a support role in combating inflation, with executive government playing the primary role in initiating incomes policies, promotion of business competition, and other anti-inflationary policies. In the Post Keynesian framework, the intermediate targets of the central bank relate to interest rates, exchange rates and the composition of credit instruments in the financial system. The goals of its monetary policy measures relate to the enhancement of sustainable investment and economic expansion as well as currency and financial stability. The objectives of the central bank therefore need to be defined more broadly, and differently, compared to those under a monetarist persuasion.

In a Post Keynesian dispensation, the central bank is, by the very nature of monetary policy actions, concerned with national economic growth and investment issues. These cannot be readily divorced from government economic objectives, and pursuit of differing objectives on the part of executive government and the central bank would be disruptive and counter-productive. This implies that the central bank needs to pursue its monetary policy objectives within overall economic growth objectives and policies set by executive government. In such a dispensation, the central bank could not be considered goal independent. It could, however, maintain operational independence, i.e. freedom to implement monetary policy measures in the most effective possible manner, within overall economic policy objectives agreed with executive government.

Some Post Keynesian adherents have put forward the possibility that central banks do not need to be institutionally separated from executive government, and could form a parallel structure to the Treasury under a single Minister of Economic Affairs/Finance (see *Journal of Post Keynesian Economics*, Winter 1995-96). Although this may be an extreme view, it indicates the inevitable relationship between monetary policy and broader economic issues in the Post Keynesian framework.

4.8 Government and Free Markets

As can be seen from some of the preceding policy implications, Post Keynesian views do entail certain forms of intervention by governments in the operation of the economy, as against a laissez faire, free market view of the economy. This, however, does not have at its roots a socialistic political and economic world view. Post Keynesian views are generally in favour of free enterprise, open markets and a high degree of economic competition in a capitalist economy. There is considerable focus on entrepreneurial decision making and its importance in investment levels and therefore economic growth. The government policy intervention recommendations of Post Keynesians stem rather from their belief that the invisible hand of free markets does not necessarily draw the activities of the economy steadfastly towards an optimum arrangement for the participants. This results from the principle of effective demand as put forward by Keynes, together with the view that markets are inherently subject to uncertainty, divergent expectations and hysteresis, and may therefore be volatile and unstable. It is to cater for this perceived economic reality that Post Keynesians explore and propose government policy measures which can best move the economy towards fulfilment of its productive potential under conditions of stability and distributional fairness amongst participants.

Government policy and intervention relating to investment in the economy needs to be seen in this light. Keynes was concerned with the fragility of entrepreneurial expectations, which led to large swings in the propensity to invest, with the economy operating far below full employment for long periods, as in the Great Depression of the 1930s. It was to address this situation that he regarded a degree of 'socialisation of investment' as being necessary:

I conceive, therefore, that a somewhat comprehensive socialization of investment will prove the only means of securing an approximation to full employment; though this need not exclude all manners of compromises and of devices by which public authority will cooperate with private initiative. But beyond this no obvious case is made out for a system of State Socialism. It is not the instruments of production which is important for

the State to assume. If the state is able to determine the aggregate amount of resources to augment the instruments and the basic reward to those who own them, it will have accomplished all that is necessary. (Keynes, 1936:378).

It is clear that Keynes does not have a socialistic production system in mind, and is advocating supportive intervention by government to reduce the defects arising from a laissez-faire economic system. His ideological support of a free enterprise, entrepreneurial economy is apparent from:

But, above all, individualism, if it can be purged of its defects and its abuses, is the best safeguard of personal liberty in the sense that, compared with any other system, it greatly widens the field for the exercise of personal choice. It is also the best safeguard of the variety of life, which emerges precisely from this extended field of personal choice, and the loss of which is the greatest of all the losses of the homogenous or totalitarian state. (Keynes, 1936:380).

Davidson (1991) elaborates on the nature of government intervention envisaged in the Post Keynesian approach. He regards the role of government as being to foster conditions which reduce uncertainties in financial matters, to provide financial incentives when entrepreneurial animal spirits are flagging in order to generate more investment and hiring of personnel, and to use fiscal means to curb the rate of investment when it becomes excessive relative to a sustainable level. He expresses it in forthright terms:

All civilised governments must assume the obligation to assure that:

- (a) current aggregate demand is sufficient to encourage business firms to create productive employment for all those who wish to work; and
- (b) guarantee that future effective demand will be sufficient to reward entrepreneurs who develop new plant and equipment to improve worker productivity. (1991:77).

It is clear that Keynes and Post Keynesians envisage direct investment by government as well as incentive or disincentive measures as being an important government policy component. Keynes advocated a proportion of investment

being in the hands of government, the size of which can be varied according to the level of investment being undertaken by private sector entrepreneurs. He advocated public sector investment programmes (e.g. public works programmes) in times of significant and widespread unemployment. Post Keynesians likewise generally support this view in varying forms: for example, Rousseas (1986:114) suggests that similar effects could be produced through selective controls over the flow of private sector credit in the economy.

Such policy prescriptions inevitably entail deficit funding by the government to stimulate demand without increasing taxation commensurately. The views on the effects of government deficit funding on the economy differ sharply between Post Keynesians and neoclassical economists. Since the neoclassical view of the economy is predicated on its being in a condition of full employment, other than through minor and temporary disturbances, it follows that additional aggregate demand created through government deficit spending is at the expense of private sector spending. Mainstream Keynesians are typically more in favour of deficit financing, but still on the basis that it is a measure to alleviate the recessionary phase of a business cycle: it is a matter of stabilisation, with a compensating budget surplus occurring during the expansionary phase of the cycle. A less than compensatory budget surplus is expected to have inflationary consequences: balanced government budgets over the business cycle are regarded as a necessary condition for eliminating inflation. (Davidson, 1991:80). In the Post Keynesian view, on the other hand, government deficit spending can be maintained as long as there are idle resources in the economy. It is one of the means to increase the level of effective demand determined by the principle of effective demand, which is a secular rather than cyclical phenomenon. Chick (1983:338) nevertheless views the sustained use of government stimulatory expenditure as a possible cause of the incipient inflation during the 1960s and 1970s. She regards Keynes' policy prescription as intended to address particular unemployment situations, and to be inappropriate for application over a long period.

4.9 Deficit Financing and Crowding Out

The issue of crowding out became prominent in the 1970s in debates between monetarists and mainstream Keynesians (Davidson, 1994:132). The monetarists claimed that any attempt by government to stimulate the economy through additional expenditure financed by a budget deficit would simply have the effect of reducing private sector investment by the amount of the borrowings. Higher government investment (or other) expenditure would crowd out private sector investment from the market for loans, rendering the stimulatory policy ineffective. The mainstream Keynesians denied that such crowding out would occur, or maintained that it would occur only partly, so that the overall impact of the deficit-financed government expenditure would still be positive. In conventional IS/LM analysis, the debate appeared to revolve around the slope of the LM curve. If regarded as vertical, an outward shift in the IS curve would result in a higher interest rate with aggregate output unchanged. With a horizontal LM curve, output would be increased with interest rates unchanged. An upward-sloping LM curve would produce some increase in output ameliorated by an increase in interest rates. Friedman maintained that the crowding out effect could be avoided by an outward shift in the LM curve, i.e. an increase in the money supply - but that a once-off shift in the IS curve would require continuous outward shifts in the LM curve to avoid crowding out, with dire consequences for inflation. These would be likely to nullify the government expenditure stimulus.

The Post Keynesian view on crowding out is based on Keynes' finance motive (Davidson, 1994:135). It regards any crowding out effect as taking place through stringency in the provision of new finance by the banking system. This means that crowding out will only occur to the extent that there is excessive pressure in the money market which the banking system is unwilling to meet in full in accordance with its prudential lending assessments. In the event of recessionary conditions, with finance motive liquidity requirements of the private sector for investment purposes being low, the crowding out effect of (moderate) government borrowing is unlikely to be significant. In IS/LM terms, the initial

outward shift in the IS curve due to the deficit-financed government expenditure is accompanied by an *inward* shift in the LM curve through the interrelationship between the two curves (see Chapter 3, Section 3.3). If the government debt is monetised, the increase in money supply may only partly restore the LM curve to its previous position, implying little effect on interest rates. The end result will depend on the marginal propensity to purchase securities out of saving on the part of the private sector. A low propensity gives rise to higher money balances, a high propensity conversely, but in general the outward shift in the LM curve will not continue indefinitely.

The Post Keynesian policy viewpoint concerning government deficit financing is therefore far more accommodating than the monetarist or neoclassical view. Whereas monetarists and neoclassical economists virtually rule out the benefits of government deficit financing by assumption, since the presumption that the economy is operating at full resource utilisation implies that any transfer of activity to the government sector must be at the expense of the private sector, the Post Keynesian framework allows a beneficial role for deficit financing without necessarily creating negative effects through money supply expansion or through crowding out of private sector investment expenditure. The extent to which it is prudent to undertake government expenditure using deficit financing will depend on the level of economic activity relative to full employment and on money market propensities.

The monetarist, mainstream Keynesian and Post Keynesian views can be characterised in terms of the IS/LM framework as follows. The monetarists seek to stabilise the economy by fixing the money supply, i.e. stabilising the LM curve. Price and wage flexibility are then expected to ensure continued full employment over the long period. Mainstream Keynesians adopt a similar framework, but consider that the adjustment process through prices and wages is slow, justifying government intervention to speed up the adjustment to long-period full employment. For this purpose they favour fiscal policy measures, including built-in (automatic) stabilisers as well as revenue and expenditure adjustments in the government budget. Post Keynesians, on the other hand,

view private investment as being the most volatile component of aggregate demand, being subject to expectations of yields and uncertainty, and seek to stabilise the level of investment through supplementing private sector investment with compensating government investment, at the same time moving the level of aggregate demand towards full employment. This entails 'socialisation of investment' as put forward by Keynes in respect of a portion of total investment sufficient for government to exercise this stabilising and stimulatory role. As Rogers (1989:289) points out, this does not imply a highly active countercyclical fiscal or monetary policy, and Keynes himself did not regard government budget deficits as a necessary component of such a policy. The emphasis is on increasing stability rather than on meeting economic shocks with countervailing economic shocks which may themselves be destabilising.

In the Post Keynesian view, monetarist policies of seeking to fix the level of the money supply are likely to be destabilising. The reason for this lies in the effect on interest rates of efforts to restrict the money supply. Interest rates may increase markedly as a result, seriously affecting the monetary equilibrium at which new investment projects are being undertaken, with decrease in investment levels both as a result of the high interest rate relative to marginal efficiency of capital and the additional uncertainty introduced by a rapidly changing interest rate. This would take the economy further away from its full employment level. Contrary to the monetarist view, which assumes a natural rate of interest and of unemployment, interest rates are not regarded as bound to a firm underlying value, and their rapid change can unsettle any expected or conventional level and lead to severe instability with consequent increased levels of unemployment.

4.10 Concluding Remarks

The Post Keynesian view implies a focus on interest rates as the primary instrument variable of monetary policy, together with a managed exchange rate in accordance with domestic economic circumstances. Money supply aggregates are regarded as no more than indicator variables, useful for

monitoring purposes. These views contrast starkly with monetarist growth rules for money supply variables and a fully flexible exchange rate. Anti-inflationary policies are regarded as mainly in the domain of executive government, with a consequently differing view of the role of the central bank in pursuing broader economic goals. The Post Keynesian view entails a greater perceived effect of executive government activities on monetary aspects of the economy, and hence a greater responsibility of executive government towards certain aspects of monetary policy (in addition to the role played by the central bank). The Post Keynesian view is not, however, socialistic in that the interventions by government advocated are limited in extent and have the aim of assisting the economy towards full employment as well as improving economic stability through which private sector economic activity is enhanced. A positive role is envisaged for government investment which is not regarded as necessarily being to the detriment of private sector investment.

This examination of policy implications of the Post Keynesian view of money in general provides the basis for considering the implications for monetary policy in South Africa in particular, which is taken up in the next chapter.

CHAPTER 5

IMPLICATIONS FOR MONETARY POLICY IN SOUTH AFRICA

5.1 Introduction

This chapter examines the implications of the Post Keynesian view of money, as developed in the preceding chapters, and of Post Keynesian monetary policy prescriptions, for monetary policy in South Africa. It first of all considers and characterises the nature of the South African monetary system as it currently operates, and looks at the extent to which monetary policy can already be regarded as Post Keynesian as opposed to monetarist or neoclassical. The implications of a Post Keynesian view are then examined for specific elements and spheres of monetary policy (interest rates, exchange rates, money supply, open market operations, inflation) as well as of the management of the public sector funding debt and deficit (budget deficit). These strands are drawn together to examine the implications for the role played by the Reserve Bank in conducting monetary policy.

A major influencing factor leading to the current structure of the South African monetary system was the *Commission of enquiry into the monetary system and monetary policy in South Africa*, conducted under the chairmanship of Dr G. de Kock, then Governor of the Reserve Bank. The Commission commenced its work in 1977 and issued its final report in 1985. The recommendations of this Commission were substantially adopted by the South African government and implemented, in some cases while the Commission was still in progress. The work of the Commission is fully documented and serves as a reference point for the rationale and philosophies underlying the current South African monetary system. Although various changes have been made to the monetary system since implementation of the De Kock report recommendations, these have not been so wide-ranging as to change the essential nature of the system.

5.2 The South African Monetary System

The Treasury arm of government and the central bank are fully separated in South Africa, with the former being part of the government Department of Finance and the latter a parastatal institution established by statute in 1921 (in terms of the Currency and Banking Act of 1920) and having its own legal persona. The Bank was established in response to the need to co-ordinate banking activities in the then four provinces of South Africa, each of which had its own banking laws and ability to issue currency, as well as to counteract the effects on the banking system of large illegal outflows of gold from South Africa after the abandonment of the fixed sterling-dollar exchange rate which applied during the first world war (Falkena, Fourie & Kok, 1995:62). The Bank was given the exclusive right to issue currency in South Africa as well as to engage in financial transactions through which it could carry out monetary policy measures. The powers of the Bank were extended and consolidated in the Reserve Bank Act of 1944, and changes to provide for greater flexibility and freedom in its operations combined into the Reserve Bank Act of 1989. The latter act brought together the main institutional changes arising from the De Kock Commission Report and remains the primary governing act, although certain amendments have since been introduced. The Reserve Bank is managed by a board of 14 directors, including a full time Governor and three Deputy Governors, with these members and a further three being appointed by government and the remaining seven being elected by the Bank's stockholders to represent stockholder constituencies. The stockholders comprise some 700 companies and individuals, with stock being quoted and traded on the Johannesburg Stock Exchange, so that appointments to its controlling board can be considered to be determined by government and private sector parties in approximately equal numbers, though with government determining full time executive appointments.

A major theme of the De Kock Commission and its 1985 final report was an emphasis on market-oriented monetary policies working through freely-operating, efficient financial markets. This led accordingly to the abolition of

virtually all direct control measures and forms of intervention by the Reserve Bank during the course of the 1980s. The Commission recommended a cash-reserve control system of the 'classical' variety in which the central bank exerts control over bank credit creation through setting the cost of cash reserves obtainable at its discount window rather than seeking to control the volume of reserve assets directly. This system was implemented from the early 1980s with step-wise reduction in reserve asset requirements of banks to a level approximately in accordance with banks' prudential and operating requirements for liquid assets. Banks ceased to be constrained by the volume of liquid assets available, but faced instead the demand constraint for credit arising from the interest rates applicable (Meijer, 1995:368). This is essentially the system presently in force¹. The Reserve Bank determines the interest rate (Bank Rate) at which overnight borrowing or discounting by commercial banks can take place. A somewhat higher penalty rate applies to a second-tier of (less liquid) reserves assets in the event of a bank having insufficient first-tier liquid assets available to meet its discount window borrowing requirement. The system relies on the Reserve Bank maintaining a money market shortage situation, i.e. with commercial banks permanently holding borrowed funds from the discount window, in order for it to be able to exert control over short-term interest rates by market orientated means. Reserve Bank accommodation rates set a floor to short-term commercial bank rates since they determine the cost of funds to the banks at the margin. Banks are not legally constrained from increasing or decreasing their use of Reserve Bank rediscount facilities; discount window accommodation in practice is automatic and unconditional in the sense that banks are not refused discount window borrowing on the terms stipulated (Meijer, 1995).

In the present South African monetary system, open market operations are used primarily as a supporting policy instrument. The Reserve Bank sells securities (mainly of government or semi-government origin) into the money market to ensure a continued money market shortage, which banks re-finance via the

¹ An arrangement involving a repurchase agreement rate and marginal lending rate was introduced from 9 March 1998. The implications of the new arrangement are indicated in Postscript (Section 5-12) below.

discount window, and uses money market transactions to increase or decrease the money market shortage in accordance with its monetary policy stance. Open market operations are used to a lesser extent to influence the level of money holdings directly.

Although public debt management is formally under the control of the Treasury in South Africa, the securities transactions to meet the Treasury's requirements are handled primarily by the Reserve Bank on its behalf. The Reserve Bank is able to make use of public debt management transactions as an instrument of monetary policy, within the broad parameters set by government's budget deficit and borrowing requirement. The latter it accepts as "external data" to its monetary policy actions (Meijer, 1995:386). Purchase or sale of government debt instruments serves to maintain and manage the level of the money market shortage as well as being a means to influence the maturity structure of money market debt.

Two significant changes were introduced into the monetary control system in 1993. Firstly, the provision of borrowed reserves from the discount window was changed from a predominantly discounting procedure of liquid assets, to one of borrowing using liquid assets as collateral, with bankers acceptances no longer qualifying for rediscounting / collateral purposes. The main consequence of this was to reduce the ease with which banks could obtain accommodation through issuing of acceptances as well as to allow market related interest rate differentials to develop between the Reserve Bank accommodation rate and market rates of eligible liquid assets (Schoombee, 1996:86). Secondly, a system of Tax and Loan Accounts was introduced whereby the Treasury is able to conduct certain bank accounts with private sector banks rather than using the Reserve Bank exclusively. The effect of this is to greatly reduce the large fluctuation in the liquidity of the money market resulting from taxation revenues flowing into government, being withdrawn from the money market by placement with the Reserve Bank, and corresponding outflows when large government expenditures take place. With use of private sector banks, the taxation and expenditures take place as transfers of deposits within the commercial banking

system without significant effect on money market liquidity. In addition to removing fluctuations which render monetary policy more difficult to effect, the introduction of Tax and Loan Accounts provides an additional means through which monetary policy can be exercised. Funds can be shifted between the Tax and Loan Accounts and the Exchequer Account held with the Reserve Bank, thereby reducing or increasing the level of non-borrowed cash reserves in the money market. The Reserve Bank has made extensive use of this monetary control instrument since 1993 (Schoombee, 1996:91), as have industrialised countries such as Canada in which government funds are held with private banks.

As with many countries since the collapse of the Bretton Woods fixed exchange rate system in the early 1970s, South Africa has used a system of managed floating since the mid 1970s. The political circumstances of South Africa, however, led to exchange controls, in one form or another, being in effect from 1961. Prior to that, South Africa was subject to the controls of the Sterling monetary area. During most of this period, South Africa has placed controls over flows to and from non-residents, with a corresponding dual exchange rate covering commercial transactions and investment flows respectively (commercial rand and financial or securities/blocked rand). The financial rand was abolished in 1983, but had to be re-introduced in 1985 due to the foreign debt repayment crisis faced by South Africa. It was eventually abolished once again in 1995 to give the present single exchange rate. A gradual approach has been adopted to the lifting of other foreign exchange controls.

In addition to holding and making a spot market in foreign reserves, the Reserve Bank plays an active role in the forward exchange rate market. It does so to influence foreign flows and thereby to influence the level of foreign reserves, as well as to serve as a secondary means of influencing the exchange rate for stabilising of fluctuations. The Reserve Bank has for the most part adopted an interest rate parity stance in the forward market, rendering the purchaser approximately neutral between holding rands or the foreign currency, but has during certain periods adopted a lower forward rand discount in order to

encourage use of overseas credit. It incurs losses on such transactions which are met by the Treasury and have an easing effect on the domestic money market. The Reserve Bank may also use sale or purchases of foreign exchange to influence domestic money holdings, or may neutralise the effects of foreign flows on the domestic currency through countervailing sale or purchase of other financial assets.

The Reserve Bank has used the approach of setting and publicising money supply (M3) growth guidelines (rather than targets), and has emphasised the broad and approximate nature of these as an indication of the growth range that the Bank considers desirable. It does not follow any strict monetary growth rule, and states clearly that it does not subscribe to the principle of a strict growth rule. As with many central banks in advanced economies over the past decade, the Reserve Bank has moved to a narrower conception of its role as relating to the stability of domestic prices and the exchange rate, with goals concerning employment and economic growth regarded as being in the ambit of other arms of government, to be supported by a stable currency and financial system.

5.3 Monetarist or Post Keynesian?

As shown above, the monetary control mechanism recommended by the De Kock Commission and subsequently adopted is essentially one of using short-term interest rates to influence credit behaviour on the part of banks and the non-bank private sector. The volume of borrowed reserves available through the Reserve Bank's discount window is not restricted, but a money market shortage is maintained to ensure that the Reserve Bank's refinancing rate has a direct influence on short-term money market rates. As pointed out by Rogers (1985a), this is in accordance with a Post Keynesian view of money in which monetary aggregates can only be influenced indirectly through the effects of interest rate levels on economic and financial market activity. It does not accord with a monetarist view in which the central bank exercises direct control over the size of the monetary base which in turn determines monetary aggregates through a monetary multiplier. In spite of some apparently monetarist terminology used,

the De Kock Commission and Reserve Bank appear implicitly to accept that they are not determining the money supply as an exogenous variable, but are influencing it indirectly through the interest rate. Kantor (1986) as a monetarist concedes that the De Kock Commission Report is not a monetarist document. Although finding encouragement in the Report's advocacy of market forces in determining credit allocation and exchange rates, and its view that control of money aggregates is the essence of an anti-inflationary strategy, Kantor criticises the Report for not advocating a money supply growth rule in accordance with monetarist thinking. He argues that control of monetary aggregates indirectly through interest rates in an open economy is a formidable task.

In spite of the core monetary control mechanism of the Reserve Bank according more with Post Keynesian than monetarist thinking, the view that price inflation has its causative roots in the size and expansion of monetary aggregates, and the view that anti-inflation policies are a primary goal of the central bank, appear to be firmly entrenched both in the De Kock Report and in the ongoing operation of the Bank. This is not in accordance with the Post Keynesian view, which, although providing some role to monetary aggregates in the inflation process, regards the primary causation of inflation as lying with forces in the wage bargaining process of the economy. Evidence of the Reserve Bank view abound in the De Kock Report as well as in the ongoing statements by the Governor: for example "the only way to restore and maintain reasonable stability of the price level in South Africa is to exert better control over money creation and total spending (De Kock Commission, 1985:A26) and "Inflation, however, lags behind changes in the monetary aggregates and is, at this stage, still stimulated by ... the relatively large increases in the money supply during the 1995/96 period." (Stals, 1997:33).

In the case of anti-inflation policy, the Reserve Bank does appear to adopt a quantity-theory view in practice, beyond mere deference to monetarism in its chosen semantics. The Post Keynesian view is that restrictive monetary policy with consequent reduction in the growth of monetary aggregates, can indeed

contribute to curbing inflation, but that this takes place with the unnecessary sacrifice of economic activity, growth and employment. The monetary influence on this aspect of monetary policy is therefore negative and economically damaging in a Post Keynesian view.

In the case of the "managed floating" stance towards exchange rates adopted by the De Kock Commission and Reserve Bank, the Post Keynesian view does not depart from the approach in principle, but differs from the monetarist rationale for flexible rates as well as the nature of policy intervention (Rogers, 1986a). Post Keynesians recognise that endogenous money, differing monetary policy stances and differing wage negotiation dispensations are likely to lead to differing inflation rates between countries, and these will require adjustment of exchange rates to reflect underlying changes in currency values. The monetarist rationale, however, is that a fixed, exogenously determined money supply will imply a corresponding exchange rate to which a completely freely floating currency will tend. Monetarists therefore advocate little or no policy intervention or management of the exchange rate. Post Keynesians hold that, especially since money supplies are not exogenously fixed in practice, the exchange rate needs to be managed. The approach adopted by the Reserve Bank is therefore not directly contrary to either a monetarist or Post Keynesian position, and the degree to which it is aligned to either will depend on the extent to which foreign exchange rates are left to be determined entirely by market transactions, and the extent to which the Reserve Bank acts in the market to manage the rate or expresses a rate, or range, which it considers desirable or realistic considering prevailing monetary and fiscal circumstances in the economy.

In overall terms, the De Kock Commission sought to express views which were not avowedly monetarist, or strongly associated with any particular economic school of thought, preferring to adopt an eclectic and pragmatic view in line with trends evident in central banking of advanced, industrialised countries. The Reserve Bank has continued in this tradition. Although the monetary control mechanism adopted is in line with Post Keynesian thinking, the approach to

inflation is more aligned to a monetarist view, and the approach to exchange rate policy, while closer to a monetarist view in the degree of flexibility espoused, does not depart radically from a Post Keynesian view.

5.4 Money Supply Targets/Guidelines

The money supply targets introduced by the Reserve Bank from 1986 are clearly and avowedly in the form of broad indicative guidelines and do not constitute a monetary growth rule as espoused by monetarists. If the Reserve Bank actively sought to attain stated money supply targets, it would require use of a volume-directed monetary control mechanism to set an appropriate level for the monetary base. The American cash reserve system, rejected by the De Kock Commission in favour of the classical system, would have been more appropriate for this purpose - but even then it is doubtful whether monetary targets could be achieved (Rogers, 1986a:74). The use by the Reserve Bank of money supply guidelines, although possibly an outward partial accommodation of monetarist thinking, does not constitute a departure from the interest rate monetary control mechanism advocated by Post Keynesians.

The implications of a Post Keynesian monetary view for the use of money supply targeting in the broad guideline form used by the Reserve Bank are therefore relatively minor. The Post Keynesian view recognises the role of monetary aggregates in demand-led inflations, albeit according them a secondary role to wage negotiation processes. Attempts to assert an indirect influence on monetary aggregates through the interest rate mechanism, and through money market transactions, therefore accords with a Post Keynesian view. Stating the monetary aggregate levels which the Reserve Bank considers desirable serves to communicate to financial markets its policy intent. The communication is a useful contribution to planning and decision making in the financial sector, and may have some effect in moving monetary aggregates closer to the stated guideline levels through recognition by the banking sector of a more or less stringent policy stance being taken by the Reserve Bank.

Post Keynesian criticism of the use of monetary guidelines would lie more on the emphasis placed in comparing them to aggregate levels achieved. The Reserve Bank regards money aggregate growth (including increases in private sector credit extension) as being a significant factor in its decisions to increase or reduce Bank Rate and adopt more or less strict policy measures. The Post Keynesian viewpoint implies less emphasis on the monetary aggregates and more on the interest rate itself, in relation to real economic activity taking place. Post Keynesians would also show little concern if the Reserve Bank is generally not able to achieve the guideline monetary growth rates which it announces, both because they regard the Reserve Bank's influence on monetary aggregates to be indirect and tenuous, and because they do not regard monetary aggregate levels as being the causative variable in the inflation process.

5.5 Interest Rate Policy

Interest rate policy is crucial in the Post Keynesian monetary framework. As shown in Section 5.2, the interest rate set by the Reserve Bank is the key monetary policy instrument in the South African monetary policy structure, and this is inherent in the structure of the monetary system adopted. The Post Keynesian view is thus not only that the interest rate is inherently the key monetary policy instrument, but also that it is the most appropriate central instrument of domestic monetary policy. It recognises that there is a relationship between domestic interest rates and the exchange rate. This necessitates an exchange rate policy being conducted in tandem with the interest rate policy, which is taken up in the section on exchange rate policy below.

Although Bank Rate is rendered as a direct influence on short-term interest rates through the Reserve Bank maintaining a money market shortage, with the Bank Rate determining the cost of a major source of funds to the banking system at the margin, some writers argue that the influence of the Reserve Bank on the term structure of interest rates is far more comprehensive than this.

Whittaker and Theunissen (1987) for instance maintain that the very nature of the Reserve Bank as the sole ultimate provider of money ensures that it determines the market call rate of interest in addition to Bank Rate. Their argument uses the thought experiment of a separate institution being established with sole powers to issue currency at a specified interest rate. They show that, in this situation, the overnight call rate for funds in the wholesale money market will move to the rate specified by the new institution as a result of arbitrage. If any bank owes another funds at a higher rate, it will be rational for such a bank to borrow funds from the new institution at its specified rate to repay its indebtedness. This applies similarly to the Reserve Bank in the thought experiment which, now stripped of its currency issuing powers, cannot bring the market to any rate other than that specified by the new institution. Whittaker and Theunissen go so far as to say that the Reserve Bank does not need to rely on keeping the banking system continuously in a borrowed reserve asset position to maintain its control over short-term interest rates. Their view is that similar reasoning would apply (conversely) if the Reserve Bank allowed a 'negative accommodation' situation to develop, i.e. one in which the banks hold excess reserves with the Reserve Bank, provided that the Reserve Bank paid interest on the excess reserves. It would then be the interest rate on excess reserves that would set short-term rates in the money market. If no interest is paid on excess reserves, however, this would be equivalent to the Reserve Bank setting the short-term interest rate to zero, with a destabilising effect occurring as the market shortage moved into a surplus due to the change between a significantly positive Bank Rate for accommodation and zero.

The view expressed by Whittaker and Theunissen is that the Reserve Bank (whether it openly recognises this or not) determines short-term risk-free money market rates directly through the setting of Bank Rate, and that interest rates for money market instruments of longer duration, and higher risk, are determined in efficient, rational markets in a manner that can be closely predicted by mathematical formulas taking account of duration and risk. Long-term rates are in turn determined as the expected trajectory of the short-term rates. Whether one adopts this strong view of market interest rates being determined by the

Reserve Bank across the duration spectrum or a more indirect view such as that expressed by Meijer (1995:376) in which market forces determine interest rates across the term spectrum by relation to Bank Rate at the short end, the Post Keynesian view places the Reserve Bank squarely in the driving seat in determination of interest rate levels across the term and risk spectrum.

It is noteworthy that the Governor of the Reserve Bank frequently downplays the role of the Bank in establishing market rates, in public statements. References are frequently made to market trends in interest rates which are portrayed as a significant factor in the Reserve Bank's setting of the Bank Rate. In the Post Keynesian thesis, these statements would appear to be primarily for public relations purposes: the Reserve Bank would prefer not to be seen as too strongly in control of interest rates, since this intensifies criticism when rates are uncomfortably high and could heighten public pressures on the Reserve Bank. When market interest rates soften in advance of a Bank Rate decrease, Post Keynesians would ascribe this to expectations by the market of a Bank Rate decrease (and equivalently for an increase), based partly on its perceptions of the factors which it expects the Reserve Bank to be considering in its interest-setting policy. The danger exists that the Reserve Bank at least partly believes its own rhetoric, which would lead it to adopt less than full responsibility for the level of interest rates in the economy, with consequently less than maximally beneficial interest rate levels in pursuing the economic objectives of monetary policy.

5.6 Exchange Rate Policy

Most economic schools recognise an interrelationship between interest rate, exchange rate and money supply variables. Monetarists advocate the setting of money supply aggregates, through a growth rule, with interest rates and exchange rates allowed free reign according to market forces. With this line of reasoning, they advocate completely flexible exchange rates, on the grounds that exchange rates will move to an equilibrium value in accordance with the relationship to the money supply. Post Keynesians likewise recognise the

interrelationship between the three variables (Moore, 1988a:271). Since they regard the interest rate as exogenously determined by the central bank, and the money supply as endogenous, their view of exchange rates as a policy variable needs careful examination.

Some Post Keynesians, such as Davidson (1994:270), recommend a fixed exchange rate system, with periodic adjustments to reflect domestic economic circumstances relative to those of trading partners, based primarily on changes in efficiency wages. This is, however, in the context of an international payments system in which all participating countries adopt a fixed rate regime in mutual co-operation. Others, such as Moore (1988a:275), suggest a strongly managed float as a compromise between the volatility of completely free rates and the need to take changes in domestic economies into account (e.g. differing inflation pressures and interest rates). Moore suggests that a target exchange rate be set by the central bank in conjunction with the interest rate policy which it is pursuing. Moore, and most Post Keynesians, regard both interest rates and exchange rates as being potentially controllable by the monetary authorities, rather than exchange rates as being endogenously determined once interest rate levels have been set. Moore applies the term exogenous to exchange rates as well as to interest rates: "Nominal foreign exchange rates, like nominal interest rates, thus must be viewed as an additional exogenous central bank policy variable." (Moore, 1988a:273). The third variable, money supply, however, is regarded as inherently endogenous. This means that the nature of the policy target advocated for the exchange rate differs from that used for money supply aggregates. The exchange rate target is seen as an achievable policy variable, provided it is realistically set, whereas the money supply aggregate targets are seen as broad indications of the authorities' monetary policy stance which may at best be attained within wide bands of approximation. The relationship between interest rates and the exchange rate has market expectations of future movements of the exchange rate as a major component. These expectations may fluctuate widely with changing market sentiment, and may be elastic and unpredictable. Indication by the monetary authorities of a

target or preferred exchange rate level is advocated as a means to manage market expectations and reduce volatility.

The Reserve Bank does not currently stipulate any target exchange rate between the Rand and any other currency, and only comments with the utmost caution from time to time whether it considers the prevailing exchange rate to be at an appropriate level or not. The Post Keynesian monetary view therefore has significant implications for exchange rate policy as conducted by the South African Reserve Bank. Strydom (1986) points out that, whereas the monetary control framework adopted following the De Kock Commission Report is Keynesian or Post Keynesian, the approach in respect of exchange rate policy is monetarist in nature. There are hence two conflicting analytical frameworks used side by side in interrelated aspects of monetary policy. Strydom claims that this logical inconsistency casts doubt on the likely effectiveness of the approach advocated to exchange rate policy. The monetarist approach referred to is one of allowing the exchange rate of the Rand to find its own level through market forces, with intervention by the Reserve Bank being confined purely to iron out minor fluctuations. This approach would be consistent with a monetarist approach to control of monetary aggregates in which direct quantitative controls were applied (if this were possible in a modern economy).

Although Strydom uses the inconsistency argument to defend the dual exchange rate system which had to be re-introduced in 1985 following the debt repayment crisis, similar arguments can be used in favour of a single exchange rate with an exchange rate policy framework that accords greater stability to the rate. Whereas a dual exchange rate system provides greater stability to the commercial exchange rate (for trade and current transactions) by insulating it from foreign capital movements, a more typical Post Keynesian approach would advocate maintaining stability for a unitary exchange rate through the Reserve Bank announcing specifically the exchange rate (or narrow range) which it considers appropriate to its interest rate and related monetary policy, and actively seeking to attain and sustain this exchange rate through its engagement in foreign exchange transactions.

The monetarist view of balance of payments adjustment through the price mechanism of rapid exchange rate adjustment implies, in theory, that a minimal level of foreign reserves is required since exchange rate adjustments are allowed to occur without significant policy intervention. The South African Reserve Bank has, however, been expressly concerned with the level of foreign reserves. In the early 1990s, when net reserves equated approximately to the value of one month of imports, the level was considered to be dangerously low. In more recent times, with the level equivalent to approximately three months of imports, foreign reserves have been considered adequate. The concern for maintaining a significant level of foreign reserves, in spite of adopting a flexible exchange rate regime, seems tacitly to corroborate the Post Keynesian view of exchange rate behaviour under flexible rates. Davidson (1982:261) for instance holds that exchange rate expectations tend to be elastic under a flexible regime without the intervention of the monetary authorities. This means that a change in exchange rate generally leads to expectations of a further change in the same direction rather than a compensating change. The tendency towards elastic expectations requires significant foreign reserve levels to prevent small fluctuations from becoming large swings. Also, the presence of a significant level of foreign reserves together with the perception that the central bank will use these to stabilise the currency, has the effect of diminishing the elasticity of expectations (Davidson, 1982:262). In this respect the Reserve Bank seems to adopt a Post Keynesian view in practice, in spite of the exchange rate mechanism being monetarist in nature.

The Reserve Bank has from time to time expressed its satisfaction with the rand exchange rate moving in line with its purchasing power parity value relative to the weighted combination of major trading partner currencies. This does not, however, appear to have been the expression of a deliberate intervention policy. The Reserve Bank states its exchange rate policy as being no more than reducing fluctuations or 'leaning against the wind'. In addition, the trade weighted effective exchange rate of the rand has not generally tracked inflation differentials, so that purchasing power parity has not been closely adhered to in

practice. For instance, the real effective rand exchange rate (trade weighted) decreased by 15 percent between 1992 and 1996. It would appear that the Reserve Bank does not actively pursue a purchasing power parity target, such as that suggested by McKinnon outlined in Chapter 4, even unobtrusively.

The Reserve Bank does frequently, and expressly, adopt compromises to its preferred monetary policy in view of exchange rate and balance of payments considerations. This is at variance with the monetarist view under flexible exchange rates, which maintains that domestic monetary policy can be pursued independently of foreign flows occurring. The reasoning provided is that interest rates need to be held higher than would otherwise be desirable in order to attract foreign capital inflows to compensate for a current account deficit and/or bolster reserves. An income effect is also recognised whereby a higher domestic interest rate dampens economic activity, especially investment, leading to reduced expenditure on imports, assisting towards current account deficit reduction. A high domestic interest rate may be justifiable as an emergency measure in terms of the Post Keynesian analysis, since interest rate differentials may not be immediately neutralised through exchange rate changes. However, it is not a valid measure on a sustained basis in the Post Keynesian analysis, since long-term direct investment funding occurs on the basis of the marginal efficiency of capital which is more attractive the *lower* is the rate of interest. If the Reserve Bank were to deploy stronger management policies to stabilise the rand exchange rate, it would be likely to achieve greater discretion over the domestic interest rate level.

In adopting such an approach, cognisance needs to be taken of the possibility of large-scale speculative forays by international funds. The size of such funds has become so large that a single fund could deplete the entire foreign reserve holdings of the South African Reserve Bank. This is a reason for avoiding a fully fixed exchange rate regime, as well as avoiding too firm a commitment to a stated rate. If a fixed rate were adopted and defended by the Reserve Bank, and international speculators considered the rand value to be unsustainably high, they would be in a position to sell rands for a strong currency to an extent

which would force the Reserve Bank to devalue the rand to avoid its reserves being depleted. The speculators would then be able to achieve financial gains by repurchasing rands at the lower exchange rate value. The managed exchange rate approach implies that the rand value would be driven down steadily by such speculative forces rather than as a step change. It would reduce the speculative gains achievable compared to a step depreciation in exchange rate value and thereby decrease the incentive to speculative activity. However, neither a managed float nor a completely flexible rate would eliminate speculative activity. Exchange rate management may best be regarded as lying partly in the ambit of game theory, in which interventions need to be strong enough to improve exchange rate stability at a rate at or close to that regarded as appropriate by the monetary authorities, but without so firm and explicit a commitment to a rate that speculators are attracted to take advantage of official support for the rate. With this proviso, the Post Keynesian view holds that a strongly managed rate is likely to result in lower speculative activity since it decreases the degree of exchange rate volatility on which speculative gains are made.

5.7 Open Market Operations

Although writers such as Whittaker and Theunissen (1983) may be correct in their view that the predominant effect of open market transactions by the Reserve Bank is to ensure that the accommodation rate set at the discount window becomes effective in the market, the extent and diversity of transactions that the Reserve Bank is able to engage in may well enable it to influence the interest rate structure across longer term financial instruments and to exert some influence on the flow of credit in the banking system. This would be in accordance with Lavoie's assertion (1984) that it is the flow of credit, rather than monetary stock aggregates, that needs to be emphasised. It would also be in accordance with the Radcliffe Committee (1959) view that monetary authorities need to concern themselves with the entire spectrum of credit provision (from call lending to long-term advances), and with the advocacy by Rousseas (1986) of direct influence by monetary authorities on credit provision as part of a Post

Keynesian approach to monetary policy. Although Rousseas recommends direct credit controls on certain categories of lending, he concedes the direct effect which open market operations can have on credit provision at different portions of the term structure, primarily through interest rate changes.

The De Kock Commission (1985:A17) accorded open market operations an important role as an instrument of monetary policy. Although it recognised the primacy of the effect on cash reserve levels in ensuring that the Reserve Bank's refinancing rate at the discount window prevails in the banking system, it is clear that the Commission regarded other aspects of open market operations to be important. This is apparent in its recommendation that the Reserve Bank conduct open market operations in the full range of maturities of financial instruments. Sale of short maturity instruments, for instance, would be sufficient to ensure a desired level of market shortage. Transactions across the maturity spectrum are clearly intended to influence credit markets directly. Part of this motivation lies in the technical objectives of smoothing out seasonal and other short-term fluctuations in market conditions, and of promoting development and expansion in use of financial instruments to the benefit of the South African monetary system. But it does also appear that the De Kock Commission envisaged influence on monetary aggregates, and interest rates, across the money market maturity spectrum, albeit purely through market-related transactions. It appears that the Commission envisaged direct quantitative effects on components of money supply aggregates, not only price effects through interest rates. Open market operations would therefore, in its view, serve as a policy instrument to influence monetary aggregates towards stated target or guideline levels.

The Post Keynesian view would be extremely sceptical of any significant quantity effects being achievable by open market operations. This arises primarily from the endogenous view of money, in which the banking system is able to generate credit instruments in accordance with demand over the full range of the maturity spectrum. Any quantitative shortage generated by the Reserve Bank would be rapidly met by additional credit instruments of the

appropriate maturity provided by the banks, ultimately sustained by borrowing at the discount window. In this view, quantitative effects are likely to be transitory only. On the other hand, pricing effects could be more enduring through the Reserve Bank serving as market-maker for particular classes of securities at a stipulated interest rate, provided that the interest rate does not depart significantly from the spectrum of rates implied by the Reserve Bank refinancing rate. The scope for open market operations in the Post Keynesian view is therefore limited to the technical functions for stability, market development and fine-tuning of the interest rate spectrum rather than having a major quantitative or interest-setting role. The non-technical or policy role is mainly one of supporting the short-term interest rate (Bank Rate) set by the central bank, and the spectrum of rates flowing from this.

5.8 Public Debt Management

Government borrowing to meet budgetary requirements and the ongoing management of the public debt can have major monetary effects in addition to their fiscal consequences. Issue of government debt instruments to private sector parties has the effect of drawing money from the financial system, and expenditure or repayment increases money holdings. Effects are made more complex by Treasury Bills issued being eligible reserve assets for discounting/collateral purposes at the Reserve Bank's discount window, as well as government borrowing and repayment activities taking place across the maturity spectrum of debt instruments. It was in recognition of these monetary policy effects that, in accordance with the De Kock Commission's recommendation, the Reserve Bank was increasingly used as the agent on behalf of the Treasury to conduct public debt transactions. This provides the Reserve Bank with the means to be able to co-ordinate public debt management activities with other monetary policy measures, though public borrowing levels and structures remain under the ultimate control of the central government Treasury. The Reserve Bank has actively used the public debt management transactions under its control as an instrument of monetary policy since the mid-1980s.

The Post Keynesian view of government playing a role in stabilising, and stimulating where appropriate, investment activity in the economy implies recognition of public debt management as a policy instrument for both fiscal and monetary purposes. A typical Post Keynesian policy stance in this respect is that of Moore (1988a:386), in which he considers capital expenditure by government to be always appropriately funded by borrowing, with the proviso that the estimated social rate of return exceeds the borrowing cost. Current expenditure, on the other hand, should always be fully covered by current revenues obtained. One implication of this approach is that a universal norm for the public deficit as a percentage of Gross Domestic Product, of say 3%, is somewhat simplistic. Deficit funding could be taken higher in the event of public investment being higher, and would need to be further constrained with low public investment. Moore regards monetary policy measures as the appropriate avenue for aggregate demand management, so that deficit financing for government investment expenditure would need to be held fairly stable over time.

Although not overly concerned with the exact level of monetary aggregates, the Post Keynesian view would strongly support the co-ordination of public debt management activities in view of their effects on interest rates, both through influencing the money market shortage and the term structure of interest rates, as well as direct effects on credit extension in different maturity/risk portions of the money and capital markets. Although the Post Keynesian view does not regard full crowding out of private sector investment to be a danger in a situation of fiscal moderation (in accordance with the above guidelines), it recognises the consequences which public debt management may have, primarily through interest rate effects on purchase and sale of government securities in the market.

Issues concerning the government deficit, total debt and interest commitments may also have an effect on money markets and the economy in general through fears of what could occur in the extreme. Under a policy of fiscal moderation,

deficit financing to fund government capital expenditure, with co-ordination of monetary policy-related instruments, is unlikely to cause inflationary concerns and expectations. However, Post Keynesians would concur with the possible danger of government borrowing becoming excessive, generating fears that borrowing requirements will not be able to be met through the financial markets, leading to borrowing from the Reserve Bank, which becomes fully monetised debt. This could conceivably result in a demand-led inflationary spiral with the central bank losing control of monetary policy instruments. The Treasury, supported by the Reserve Bank, does therefore need to exercise caution insofar as market perceptions, as well as actual occurrences, are concerned.

The needs of the Treasury for funding from financial markets, and the Reserve Bank's monetary policy considerations, will not in general coincide. The Treasury will seek to arrange its debt portfolio in such a manner as to provide funding, and require repayments, in accordance with the expected duration and flows of its use of funds. The financial market transactions necessary for these portfolio requirements may bear little or no relation to transactions required for monetary policy purposes, and yet have monetary policy consequences. Although the treasury makes use of the Reserve Bank to conduct transactions on its behalf, this is by no means a streamlined process (Meijer, 1995:388). The Bank currently manages four separate funds on behalf of the Treasury, with differing objectives. Borrowing in excess of requirements through issue of Treasury Bills for monetary policy purposes, and similar transactions not directly related to the Treasury's requirements, require the permission of the Treasury. The Reserve Bank may in most cases be able to arrange a combination of transactions on behalf of the Treasury, and of its own open market operations, to conduct monetary policy as it considers appropriate. This situation, however, underlines the fact that the monetary policy measures of the Reserve Bank cannot be regarded as fully independent from central government in practice.

Some Post Keynesians have questioned the necessity of having complete separation between a (legally distinct) central bank and the treasury function of government (e.g. Rousseas, 1986:112). The alternative is put forward of central

banking and treasury arms falling within a single ministry. Most, however, appear to accept a separate central bank as preferable, but with the interdependence of certain spheres of operation being fully recognised, and mechanisms being established to ensure a high degree of co-ordination for monetary policy purposes. The dual nature of treasury debt and its management, as a financing portfolio and as an instrument of monetary policy, is a prime example of this interdependence. The implication in the case of South Africa is therefore the adoption of structures and co-ordination mechanisms to prevent any unintended consequence of public debt management on monetary policy, and to enable the use of public debt management transactions to support prevailing monetary policy as far as is possible.

5.9 Anti-Inflation Policy

Current Reserve Bank objectives place great emphasis on protecting the value of the domestic currency, and this is reflected in the policy statements and media communication of the Bank. The implication of the Post Keynesian view that the primary causative arena for price inflation lies in the wage-negotiation process, is a much reduced emphasis on this objective by the Reserve Bank. Combined with this is the assumption of responsibility by executive government departments, in particular Department of Finance and Department of Trade and Industry, for inflation combating measures. They would need to adopt measures such as incomes policies, for example the Tax-based Incomes Policy referred to in Chapter 4, and promotion of business competition to accord with a Post Keynesian view of inflation. They would need to promote a wage-bargaining framework in the economy in which the relationship between nominal wage increases, productivity improvement and inflation are recognised. Certain measures of these kinds have been adopted in recent times in South Africa (and at times historically): the Growth, Employment and Redistribution strategy introduced by Government in 1996 (South Africa, 1996) contains an incomes policy by consensus through a national social agreement, legislation exists and

is actively used to promote competition, and an increasing number of wage agreements contain a productivity-related element.

This does not imply that the Reserve Bank has no role in combating inflation. Stability in the monetary system is an important supporting factor in curbing inflation. The Reserve Bank also needs to ensure that excessive credit creation, particularly through monetisation of government debt, does not lead to a demand-driven component of inflation. A further important Reserve Bank support role in curbing inflation lies in maintaining a stable rand exchange rate, in line with inflation rate and interest rate differentials relative to trading partners, to reduce to a minimum the price increase effects of falls in the exchange rate. This needs to be combined with foreign reserve management which avoids the ratchet effect of balance of payments surpluses contributing to domestic monetary expansion, which is not reversed during a subsequent balance of payments deficit.

The Post Keynesian view recognises that restrictive monetary policy can have the effect of curbing inflation (e.g. Moore, 1988a:389). The problem in the Post Keynesian perception is that this occurs through unnecessary restriction of aggregate output, with the consequences of reduced employment, wages, profits and investment. Economic activity and growth is being constrained to below its potential through placing the full burden of inflation reduction on monetary policy. In a Post Keynesian view, this loss of potential output, employment and growth can be avoided by placing inflation control primarily in the ambit of the wage negotiation process and the departments of government concerned with this process.

5.10 The Role and Independence of the Reserve Bank

The Post Keynesian theory of money implies a reversal of the trend over the last decade in which the Reserve Bank's objectives have become more narrowly defined, being focussed almost exclusively on the protection of the domestic and external value of the Rand. This trend has been in line with the

international trends in industrialised countries, in which low inflation (a stable value of the domestic currency) has been increasingly regarded as the primary ultimate objective of a central bank and concentration on additional ultimate objectives as likely to detract from the central bank's ability to meet this primary objective. The trend has been closely related to the emphasis on independence of the central bank, with the reasoning that monetary control measures in the short term may have negative consequences for participants in the economy, which may be politically unpopular, so that any possibility of influence by other economic stakeholders over the central bank in administering remedies needs to be avoided.

The view that the central bank should focus almost exclusively on currency value stability (low inflation), with independence from executive government or other concerns, appears to be strongly influenced by monetarist thinking. It is based on the premise (in conjunction with the natural rate of unemployment hypothesis) that the primary cause of inflation is excessive growth in monetary aggregates, and that the central bank is in a position to control these aggregates and needs to devote its full attention to doing so. The emphasis on independence appears likewise to refer generally to the ability of the central bank to pursue policies which control or limit growth of monetary aggregates without needing to take other or broader economic issues into account.

Prior to this trend, the Reserve Bank (as with most central banks) had a broader set of ultimate policy objectives, covering (Meijer, 1995: 364):

- a) Relative stability of the general price level
- b) A high and stable level of employment and resource utilisation
- c) A satisfactorily high real growth rate of the domestic economy
- d) A satisfactory balance of payments, foreign reserves and exchange rate position .

The Reserve Bank was thus a close partner to executive government in pursuing economic policies, albeit operationally independent in carrying out the monetary actions and measures within its ambit.

As pointed out in the previous section, the Post Keynesian view certainly removes the emphasis on domestic currency stability (low inflation) as an ultimate objective of the Reserve Bank, since anti-inflation measures are regarded as primarily outside this sphere of monetary policy controlled by the Reserve Bank. Control of interest rates by the Reserve Bank, however, implies a much greater emphasis on the employment level and economic growth rate as ultimate objectives. Since short-term interest rates are regarded as the major determinant of expected long rates, and expected long rates are an important factor in new investment decisions in the Post Keynesian view, the Reserve Bank's control of short-term interest rates becomes central in determining levels of economic output through monetary equilibrium and the point of effective demand.

Carvalho (1996) maintains that calls for the independence of central banks rest on two fundamental theoretical propositions: (1) The natural rate hypothesis together with the neutrality of money, implying that the economy is always at, or close to, its full employment level and that monetary policy has no durable effect on real variables and (2) that central banks have a natural, intrinsic goal which is one of price stability. The first proposition gives rise to the view that central banks have no role in broader economic policy issues and that any attempts to draw central banks into such a role have negative economic consequences. The second proposition is based on Carvalho's observation that, in calls for central bank independence, there is invariably the tacit assumption that the central bank, completely unfettered, will devote its full attention to the goal of price stability, rather than seeking to maximise its influence, pecuniary gains, or any number of other conceivable objectives. He poses the question from whom or what the independence is being advocated, and concludes, using evidence of how the degree of independence is measured in the various studies which have

been conducted, that it is generally from executive government. He questions to whom or what a completely independent central bank would be accountable.

These debates highlight the differing meanings of the term independence. A distinction is frequently made between goal independence and operational independence. As Carvalho points out, calls for independence generally assume the central bank will pursue the single goal of price stability. But what of the possibility of a central bank with goal independence pursuing a combination of economic growth, distribution and employment goals in addition to price stability (let alone the more perverse objectives mentioned above)? Apart from these goals being so central to the fabric of society that they are generally the concern of government as a whole, there are invariably political balances which need to be found between alternative approaches. If the central bank pursues one or more of these goals independently of the policy framework of government as a whole, conflicting measures and economic inefficiencies are bound to result.

On the other hand, the activities of central banks are specialised in nature, with economic consequences which may not always be apparent to a non-specialist. It is therefore important that a central bank be free of pressures to take actions which will benefit partisan groups or provide short-term benefits with eventual negative consequences. This could apply for instance to unjustifiably low interest rate levels or measures to extend credit provision to politically favoured groups. It is therefore preferable for a central bank to have operational independence in the sense of being able to engage in the actions of monetary policy, and its technical activities, without direct intervention by government or other parties.

Since the Post Keynesian view of money holds that monetary policy actions affect directly broader economic variables of growth, investment, employment and even income distribution, it follows inevitably that the central bank cannot be accorded goal independence. The central nature and multiple influences on these variables necessitate that the central bank pursue its monetary policy

within a policy framework, and in pursuit of overall economic goals, as formulated by Government as a whole. At the same time, this does not prevent operational independence of the central bank, to engage in its specialised activities as efficiently as possible. Although some Post Keynesians have suggested a central banking arm within a government ministry, this is not a necessary component of a Post Keynesian view provided that the interrelated nature of monetary policy with broader economic policy is recognised and mechanisms to achieve policy co-ordination are effectively instituted and maintained.

This reasoning, then, applied to South Africa implies continuation of the Reserve Bank in its present institutional form, which ensures its operational independence, but with recognition that the Reserve Bank is inevitably bound into broader economic policy issues which form part of an overall framework of economic policy set by government. It implies a return to the four broader overall goals as previously formulated, with the emphasis between them and the broad direction of monetary policy pursued being in accordance with the economic policy framework of government. It implies close and ongoing communication and co-ordination with central government, in particular the Department of Finance and its Treasury, but also other economic policy related departments such as that of Trade and Industry.

5.11 Concluding Remarks

The Post Keynesian theory of money thus accords a far more wide-ranging contribution of monetary policy to real economic effects than does a monetarist or neoclassical approach. The theory of Monetary Analysis places monetary variables at the core of the nexus determining real economic outcomes in a modern entrepreneur economy, with interest rates being a crucial policy variable. It implies less emphasis by the Reserve Bank on monetary aggregates and on combating inflation, but at the same time implies the recognition that the Reserve Bank has a major impact on the real economy through its monetary policy actions.

The monetary control system used by the Reserve Bank is found to be essentially Post Keynesian in nature, with the interest rate at the discount window serving as the main instrument of monetary control, supplemented by primarily interest rate effects across the spectrum of the money and capital markets through open market operations as well as through carrying out public debt management transactions on behalf of the Treasury. The exchange rate regime, on the other hand, is found to be more in line with monetarist thinking, though able to be changed fairly readily through stronger management of a floating exchange rate. The explicit statement, and pursuit, of target exchange rate levels in line with economic circumstances and interest rate policy could be introduced to move closer to a Post Keynesian approach. The emphasis on curbing inflation, and apparent tacit assumption that this is the primary goal of the Reserve Bank, follows from a monetarist orientation which has become prevalent over the last two decades in industrialised economies, though not usually taken to its logical conclusion in imposing money supply growth rules. Post Keynesian monetary theory finds this emphasis to be misplaced, with primary responsibility for combating inflation better placed elsewhere. Calls for central bank independence are found to stem in the main from monetarist presumptions. The Post Keynesian monetary view has no quarrel with operational independence of the Reserve Bank, or with its having a separate institutional structure from government, but regards its impact on real economic

magnitudes to be so significant, that co-ordination of its monetary policies with other government economic policy actions towards common overall goals becomes vital for maximal effectiveness of economic policy in South Africa.

5.12 Postscript: New Repo Rate Arrangement

With effect from 9 March 1998, the Reserve Bank replaced the Bank Rate and second tier asset rate (1% above Bank Rate) applicable to discount window borrowing, with a repurchase agreement rate (repo rate) and marginal lending rate. The repo rate is determined by daily tenders for discount window funds submitted by banks. The rate (after being fixed for the first 7 days of operation) is therefore able to vary on a daily basis. The marginal lending rate is, however, set by the Reserve Bank. It was initially set at 16%, one percentage point above the initial repo rate. In introducing the new arrangement, the Reserve Bank has maintained that it would enable greater flexibility and more rapid response to money market conditions, and that the repo rate would be a reflection of market conditions.

The question arises whether the new arrangement constitutes a fundamental departure from the old. It was argued in Sections 5.2 and 5.3 that the cash reserve system of the classical type adopted following the De Kock Commission report was based on an interest rate control mechanism in line with Post Keynesian thinking, rather than on a monetary aggregate control mechanism. Some of the language used in introducing the new arrangement may give the impression of quantitative controls. For instance, the Reserve Bank determines the quantity (volume) of reserves to be offered at the daily repo tender. The Reserve Bank emphasises that the repo rate is determined by the tender with market participants free to bid at the interest rate they consider appropriate. However, it is apparent that the Reserve Bank is able to manipulate the repo rate in accordance with its policy views by determining the quantity of reserves made available for tender. This strong influence has already been brought to bear when the Reserve Bank wished to prevent too rapid a fall in the repo rate. In addition to this, the marginal lending rate, which is the rate at which the banking system is able to obtain borrowed reserves beyond those available through the repo tender system, is set entirely and explicitly by the Reserve Bank. The combination, therefore, in the new arrangement does not constitute a fundamental departure from the previous Bank Rate system in that the

Reserve Bank is still able to determine the interest rates applicable to borrowing from the discount window. It still makes use of a money market shortage to ensure significant borrowing through the discount window, making the weighted average of repo rate and marginal lending rate effective as a marginal wholesale rate in the banking system. The repo rate may vary from day to day, and will serve as a means of providing immediate market signals between the Reserve Bank and the money market, but any significant move in the interest rate combination for borrowed reserves will still be determined by the Reserve Bank. The analyses and arguments of Chapter 5 therefore do not change in substance with the new arrangement introduced, even though the nomenclature of the interest rates, their flexibility and the specific operation of discount window borrowing differ from those of the previous arrangement.

CONCLUSION

Post Keynesian monetary theory provides a view of money and its economic effects fundamentally different from that of monetarism and neoclassical economics. Whereas monetarists and neoclassicals view money as being neutral in its real effects in the long run, Post Keynesians regard money as inextricably linked to real economic variables in both the short and long run. Whereas monetarists regard the money supply as exogenous and best controlled by the monetary authorities under a growth rule, Post Keynesians regard it as being endogenous in the fundamental sense of being outside the control of the monetary authorities, even if they seek to control it. Whereas monetarists see interest rates as a price best left to market forces once monetary aggregates are set, Post Keynesians view interest rates as a crucial economic variable which can be, and ought to be, determined by the monetary authorities to the best advantage of the economy. Whereas monetarists regard the primary cause of inflation to be the excess level of growth of the money supply, Post Keynesians regard the causal mechanism as lying primarily in the wage negotiation process. Whereas monetarists favour fully flexible exchange rates on the grounds that balance of payments adjustments will occur readily as a result of the price effects of relative exchange rates, Post Keynesians favour strongly managed exchange rates on the grounds that exchange rates are inherently unstable and subject to large speculative shifts unrelated to underlying economic magnitudes. Whereas monetarists and neoclassicals regard full employment as the normal state of an economy, with deviations being short-lived and automatically corrected, Post Keynesians regard unemployment equilibrium as a sustained state in most economies, which can only be corrected over a period of time through appropriate economic policies on the part of government.

Post Keynesian monetary theory is thus diametrically opposed to that of monetarism and neoclassical economics on virtually every major issue. Although not as dramatic, the differences in Post Keynesian monetary thinking from that of mainstream Keynesianism are also material. Post Keynesians

regard mainstream Keynesians as having misinterpreted some of the most important insights introduced by Keynes, and as having accommodated much of neoclassical thinking and its assumptions. Mainstream Keynesians typically regard fiscal policy as the primary avenue for economic management; Post Keynesians regard monetary policy to be of fundamental importance, although according fiscal policy a parallel role. Mainstream Keynesians regard stabilisation policies as addressing short-run deviations from full employment, as diminishing the recessionary phase of business cycles; for Post Keynesians, government policies in both the fiscal and monetary sphere are ongoing requirements to improve economic performance in the short and long run. Mainstream Keynesians base much of their macroeconomic analysis on the IS/LM framework which entails an exogenous money supply with interest rate determination through interaction of monetary and real sector schedules. Post Keynesians regard the interest rate (short-term) as being exogenously determined and the IS/LM framework as unable to portray correctly the operation of monetary variables in moving toward equilibrium. Post Keynesians view mainstream Keynesians as having an inadequate theory of inflation with the breakdown of Phillips curve-type relationships from the 1970s. The Post Keynesian view of adjustment processes in an open economy likewise differs significantly from that of the Keynesian mainstream.

In addressing open economy issues, Post Keynesian analysis makes use of an extension of the liquidity preference or financial asset portfolio concept. Contrary to the monetary approach to the balance of payments, this leads to a view of international flows in which adjustments do not occur smoothly and rapidly under either flexible or fixed exchange rates. Instead, currency and financial asset holdings of residents and foreigners depend on expectations of returns arising both from exchange rate movements and from relative interest rates. Expectations are influenced by a variety of factors affecting the perceptions of economic actors, and are not necessarily stable. Price movements in the form of exchange rate changes are themselves a factor in determining expectations of further movements and may be self-propelling. The Post Keynesian analysis shows exchange rate flexibility according to market

perceptions to be a potential source of increased instability compared to strongly managed or quasi-fixed rates. Analysis of likely currency movements over the course of a business cycle indicates that international flows will tend to accentuate the cycle, with this effect being more pronounced in the case of flexible rates. The availability of foreign funds, to be converted into domestic currency or exchanged for domestic currency at the instance of economic agents, provides an additional source of monetary effects on the domestic economy which need to be addressed by domestic monetary policy. These influences apply even more strongly in the case of small open economies, which are price-takers in the international arena and for which imports (with a predominance of capital goods) are price inelastic. The level of monetary aggregates may be substantially influenced by foreign flows, and rendered even less subject to influence by the domestic monetary authorities.

Monetary policy and its appropriate use are therefore crucial in a Post Keynesian monetary framework. Neither domestic nor international monetary variables are viewed as automatically adjusting to the maximum benefit of the economy, and both are potential sources of economic instability. This calls for careful measures both for maintaining stability of the domestic financial system and for moving towards economic growth and employment objectives. The focus of monetary policy thereby falls on interest rates, together with exchange rates. Monetary aggregates are not regarded as a significant policy variable in view of the money supply being mainly or entirely endogenously determined, and money supply guidelines or targets serve little more than an information role in conveying to the business sector the policy stance of the monetary authorities.

The Post Keynesian view holds that the central bank exercises direct control over nominal short-term interest rates, and that long-term rates result fairly directly from these across the yield curve through expectations of the likely future path of short rates. It is long-term rates which influence investment activity through monetary equilibrium relating these to marginal efficiencies of new capital assets. This is the monetary mechanism which underlies the

principle of effective demand, through which the economy may remain substantially below full employment if the most beneficent interest rate policy is not pursued. Short-term interest rate determination is thus crucial to the progress of the real economy, rather than being merely an instrument for ensuring efficiency and stability in money and financial asset markets. Any policy of allowing short-term interest rates to run freely according to market forces, especially when a restrictive policy is being pursued towards monetary aggregates, is likely to be economically damaging in the Post Keynesian view. Similarly, a policy of maintaining high real interest rates over a sustained period, perhaps with the argument that this is necessary to combat inflation, is unnecessarily damaging to economic activity and expansion in the Post Keynesian view.

The issues of international flows and exchange rates of course add complications to the exercise of monetary policy through short-term interest rates. The monetary authorities cannot exercise interest rate policies without taking full cognisance of the effects of foreign funding flows. Interest rate differentials between the domestic economy and trading or investment partners are a factor influencing foreign flows. However, although relatively high short-term rates generally attract foreign short-term funds into financial assets, it is lower relative long-term rates which render direct investment more attractive through their relationship to marginal efficiencies of capital. Maintaining relatively high interest rates for balance of payments and exchange rate purposes needs therefore to be seen as an immediate, limited duration measure rather than as a measure to be applied on a sustained basis.

Since the Post Keynesian view favours managed exchange rates to reduce the instability arising from flexible rates, but recognises the effect of interest rates on foreign funding flows and exchange rates, monetary policy needs to be formulated and conducted jointly on the interrelated variables of interest rates and exchange rates. The preferred levels of the two may not both be attainable, especially when immediate economic problems occur. A lower interest rate may be desirable for domestic economic expansion, but foreign reserve levels may

be precarious and require a relatively high interest rate to attract foreign funding inflows to meet a current account deficit. The inflow may be necessary in order to maintain the exchange rate within a target range, without foreign reserves being rapidly depleted in the process. Monetary policy therefore needs to address a combination of interest rate and exchange rate levels which may well require a compromise between the two. The Post Keynesian analysis implies carefully formulated interest and exchange rate policies according to prevailing economic circumstances. There are no simple or universal rules.

In the Post Keynesian framework, monetary policy cannot be divorced from the public debt management activities of executive government. The monetary effects of public debt management are material, and are influenced by executive government requirements, even if the central bank conducts certain public debt management functions as an agent to the Treasury. With Post Keynesians advocating (as suggested by Keynes) the active participation of government in stabilising and extending investment expenditure, issues surrounding public debt management are crucial. Post Keynesians do not regard public investment as simply crowding out private sector investment, and the nature as well as level of public investment have significant effects on the economy. In the sphere of inflation, the Post Keynesian causal mechanism places policy action primarily in the hands of executive government, with the central bank having a supporting role. In the Post Keynesian approach, therefore, there cannot be a complete separation of roles and responsibilities between executive government and the central bank for conducting monetary policy.

The strident calls for central bank independence over the past decade appear to arise from a monetarist view of money and monetary policy. The purpose of the independence sought is generally to ensure that the central bank focuses its full attention on maintaining a stable currency (low inflation) through controlling monetary aggregates, even though this may cause economic hardship and be politically unpopular. The Post Keynesian view of money, although not opposed to operational independence of central banks, has the implication that central banks need to pursue national economic objectives established by, or in

conjunction with, executive government. This means that central banks cannot be goal independent, although they may be operationally independent, if monetary policy is to be conducted in a co-ordinated manner to the maximum benefit of the economy. The Post Keynesian view is a recognition of the breadth of monetary policy and the pervasiveness of its effects on the real economy. It holds that monetary policy cannot be confined to the relatively narrow tasks of maintaining a stable internal and external value of the currency without neglecting the wider aspects of monetary policy and their positive and negative consequences for the economy.

An examination of the South African monetary system shows the monetary control mechanism to be in accordance with a Post Keynesian view in that commercial banks hold borrowed reserves through the discount window on an ongoing basis, with Bank Rate (plus a penalty in certain circumstances) serving as the dominant short-term rate in the financial system. On the other hand, the Reserve Bank's expressed preference for a flexible exchange rate, with its management serving only to dampen short-lived fluctuations, is more in line with monetarist and neoclassical thinking. The Reserve Bank still publishes monetary aggregate growth guidelines, and monitors actual growth against these, indicating some degree of commitment to monetary aggregates as a policy variable (though it is presently considering discontinuing this practice). The Reserve Bank has narrowed its overall goal over the past decade to focus on internal and external stability of the currency. It thus holds a mixture of monetarist and Post Keynesian elements in its instruments and approaches. It has clearly been strongly influenced by monetarist thinking over the past two decades, as has been the case with most central banks.

The Post Keynesian view of money would imply re-adopting a broader set of overall goals, much as were in place prior to the monetarist influence of the 1980s. It implies using the interest rate as a major policy variable, in seeking to attain economic growth and employment objectives as well as monetary stability. It implies adopting a stronger management approach to the exchange rate, probably with stated targets derived from purchasing power and interest

differential calculations in relation to trading partners. It implies recognition that anti-inflation measures need to be pursued outside the ambit of the Reserve Bank, with the Reserve Bank supporting these rather than being held responsible for the occurrence of inflation. It implies recognising the important role of public debt management in monetary policy, and closer co-operation between Reserve Bank and Treasury to ensure this occurs in accordance with monetary policy objectives. The discontinuation of monetary aggregate guidelines would be of little concern to a Post Keynesian view, which would favour the publication and monitoring of credit extension figures (for instance, Domestic Credit Extension) as more relevant information concerning credit creation than monetary aggregates. The Post Keynesian view places even greater emphasis than a monetarist or neoclassical perspective on the role of the Reserve Bank in maintaining stability of the financial system, since it regards economic variables as precarious, as not necessarily moving or returning to stable equilibrium values. The Reserve Bank would need to avoid approaches which are likely to generate erratic fluctuations in key monetary variables (especially interest rates and exchange rate).

The Post Keynesian monetary theory is thus one in which monetary variables play a central and pervasive role in the economy, in the long as well as short run, influencing real as well as nominal magnitudes. Its lineage can be traced to the Banking School of the nineteenth century, to the monetary insights of Keynes and his disciples, and to the Monetary Analysis tradition which gradually coalesced thereafter. It is a theory which recognises the importance of uncertainty, time and expectations in economics, is at the forefront of theoretical debate, yet addresses real-world issues, including stylised facts, institutional effects and alternative policies. The implications of its theoretical models and structures can be unravelled through to the various facets of a monetary economy. It provides a framework against which comparisons of actual economic systems and policies can be drawn. This dissertation has made the journey from the theoretical origins of the Post Keynesian view, through its models and analyses, to policy prescriptions and approaches, and has shown

the broad implications for monetary policy if the Post Keynesian monetary framework were adopted in the case of South Africa.

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