

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The *Encyclopaedia Britannica* states that “[i]nflation is generally thought of as an inordinate rise in the general level of prices” (1988: 310). The *New Palgrave: A dictionary of Economics* (1987) quotes Laidler and Parkin (1975: 741) to define inflation as “a process of continuously rising prices, or equivalently, of a continuously falling value of money” (1987: 832). Moreover, “[s]ince there are many different ways of measuring prices, there are also many different measures of inflation. The most commonly used measures in the modern world are the percentage rate of change in a country’s Consumer Price Index or in its Gross National Product deflator” (*New Palgrave: A dictionary of Economics*, 1987: 832).

Murali (2004) states that the word inflation owes its origin to the Latin word *inflare*, which literally means "to blow into", from *flare*, "to blow". This is an accurate description of the current understanding of inflation: an unsubstantiated increase in prices, i.e. not reflecting changes in relative scarcity. Over many centuries unsubstantiated increases in prices occurred, with the related problems of containing such increases. In this sense “[i]nflation is both a very old problem and a very new one. If we look back in history, we discover many inflationary periods. Diocletian tried (in vain) to curb a Roman inflation in the fourth century A.D.; between 1150 and 1325, the cost of living in medieval Europe rose fourfold; between 1520 and 1650, prices again rose between 200 and 400 per cent, largely as a result of gold pouring into Europe from the newly opened mines of the New World. In the years following the Civil War ... [in the United States] ... the South experienced a ferocious inflation, while prices in the North doubled; during World War I, prices in the United States doubled again” (Heilbroner, 1975: 170 and 171). In many instances inflation was, however, followed by subsequent periods of deflation. In the United States, for instance, the “ ... producer price index in 1943 was slightly below its 1810 value” (Haslag, 1997: 19).

Diocletian was not content with half measures in containing inflation. He fixed the maximum prices at which beef, grain, eggs, clothing and other articles could be sold, and prescribed the death penalty for anyone charging higher prices (Rupert, 1974b: 115). This is a very early example of direct price controls aimed at containing price increases, but failed so miserably that it had to be abandoned after much blood was shed.

The current understanding of the word inflation is contrasted with its earlier meanings by Bryan, who states that “[f]or many years, the word inflation was not a statement about prices but a condition of paper money – a specific description of a monetary policy. Today, inflation is synonymous with a rise in prices, and its connection to money is often overlooked” (Bryan, 1997: 1). Bryan also states that “[w]hat was once a word that described a monetary cause now describes a price outcome. This shift in meaning has complicated the position of anti-inflation advocates. As a condition of the money stock, an inflating currency has but one origin – the central bank – and one solution – a less expansive money growth rate. But as a condition of the price level, which may have originated from a variety of things ... the solution to – and the prudence of – eliminating inflation is much less clear” (Bryan, 1997: 1).

Bryan shows that the use of the word inflation originates from the period between the mid-1830s and the Civil War in the United States, when banks issued “ ... bank notes, a private paper currency redeemable for a specific amount of metal. That is, if the issuing bank had it. At times, banks did not have enough gold or silver to satisfy all of their claims. Bank notes ... tended to depreciate. It is during this period that the word inflation begins to emerge in literature, not in reference to something that happens to prices, but as something that happens to a paper currency” (Bryan, 1997: 2). Bryan states that the earliest reference to inflation to be found in the library of the Federal Reserve Bank of Cleveland comes from a publication of 1855, although “[t]he Oxford English Dictionary shows the earliest reference to be from Barnard: The property pledge can have no tendency whatever to prevent an inflation of the currency” (1997: 2 and 6). Whereas “[t]he term inflation was initially used to describe a change in the proportion of currency in circulation relative to the amount of precious metal that constituted a nation’s money ... by the

late nineteenth century, however, the distinction between currency and money was becoming blurred” (Bryan, 1997: 2).

Bryan concludes that “[w]ithout being tied to the money supply, any price increase seems to have an equal claim to the word inflation. Indeed, today we regularly read reports of a seemingly endless variety of inflations. When the word is used as a description of the price level, an anti-inflationary policy can easily be characterised as being against any price increase, including higher wages. This is simply not the case. An anti-inflation strategy is concerned with a particular type of price increase – a rise in the general price level stemming from excessive money creation. When viewed in this light – the light provided by the word’s original meaning – a zero-inflation objective for the central bank becomes a much more sensible goal” (Bryan, 1997: 4). Bernanke et al. state that “ ... in the long run, the inflation rate is the only macroeconomic variable that monetary policy can affect” (1999: 10).

Friedman states that inflation originates in modern times from “ ... the actions of legislators and central banks, rather than from such acts of God as specie discoveries, ... [implying that] ... inflation is not likely to proceed very long without being anticipated, and perhaps, over-anticipated” (1972). The implication is therefore that inflation experienced by modern economies is inevitably linked to bad policies in one way or another.

Section 2 of this chapter provides a selected review of literature on the development of macroeconomic theory, focusing on monetary issues, since 1921. This section provides the theoretical and macroeconomic backdrop of the study and contextualises inflation and its measurement within a macroeconomic framework and development perspective. Section 3 highlights the available literature on the international measurement of inflation perceptions. Section 4 assesses macroeconomic theory and policy reform in developing countries. The conclusions follow in Section 5.

2.2 A selected review of literature on macroeconomic theory with a focus on monetary issues

Although the word *inflation* was used as long ago as the 1830s, “[p]ersistent inflation is a post–World War II phenomenon. Before then, the history of price indexes shows bouts of inflation followed by periods of deflation. In other words, the price level cycles showed no discernible upward or downward trend” (Haslag, 1997: 12). As the period before World War II was characterised by price swings rather than persistent price increases in the way inflation is understood today, the early literature on inflation focuses attention on this cyclical trend in price changes. In this regard Haslag states that “[e]conomic expansions generally coincided with inflation, and contractions typically coincided with deflation” (1997: 19).

Hansen states that “[o]n considering the history of the theories of inflation, it is possible to distinguish two main treatments, of which the one seems to have had its origin far back in the past, while the other is only half a century old⁸” (1951: 1). The first and older of these two theories is based on the quantity of money theory. The second theory, integrating micro and macroeconomics, has been developed by Wicksell and is based on the principle that the general price level is determined by the aggregate demand and aggregate supply of goods and services in the economy (see for instance Hansen, 1951: 1 and 2; or Keynes, 1942⁹). In considering the development of new theories over time, the remark of Gordon that “... the outcome of historical events often challenges theorists and overturns theories, leading to the evolution of new theories” (2000: 58) comes to mind. In the review of inflation over time, events such as the Great Depression of 1929 to 1933; the surfacing of persistent inflation after World War II; historically high rates of inflation in developed countries in the 1970s; and the subsequent demise of inflation in developed countries since the 1980s, have triggered the development of new theories.

Before the Great Depression the prevailing view was that an economic system could deviate from an equilibrium position of full employment and output for short periods only. Such disturbances would only be of a temporary nature (Snowdon and Vane, 2005: 37) and flexible price and wage

⁸ It should be borne in mind that this book was published in 1951, implying that the later theory might now be more than a century old.

⁹ A 1942 reprint of *The General Theory* of Keynes was used for this review.

adjustments would restore equilibrium. At the same time, inflation could only be caused by increases in money supply, and would therefore also be a temporary disturbance only, as the value of the currency was fixed in terms of the price of gold. Not only would full employment and output follow the disturbance, but price level stability would also follow within a reasonably short period of time. A case in point is the United States, where consumer price inflation averaged only 0,1 per cent per year between 1880 and 1914 (Bordo, [S.a.]). In the United States this period of price stability was preceded by a period of price increases, following the discovery of gold in California in 1848. The production of gold increased the money supply in the United States, which raised domestic expenditures and nominal income, and ultimately the price level (Bordo, [S.a.]). Such increases were, however, the exception rather than the rule.

The remark of Laidler and Parkin that “ ... the quantity theory of money has, in one form or another, dominated the literature on inflation for the greater part of the past three hundred years” (1975: 744) is therefore used as point of departure in this review. The quantity theory of money retained its analytical usefulness owing to its application of the tools of supply and demand to the determination of the price of money (see for instance Levi, 1994: 424).

In terms of the quantity theory of money, the identity $MV = PQ$ (with M = money supply, V = velocity, P = prices and Q = quantity) implies that prices can increase only if M or V show a concomitant increase, with Q remaining stable. Harberler states that “ ... except in periods of hyperinflation ... a rise in velocity by itself has never caused, or substantially intensified, serious inflationary trouble ... ” (1966: 62), on condition that inflation is defined as an increase in prices and not as an increase in MV . In its most basic form the quantity theory of money became established after “ ... the publication of David Hume’s essay, *Of Money*, in 1752” (Snowdon and Vane, 2005: 50). Two versions of the quantity theory developed: the approach followed by Fisher; and the Cambridge cash-balance approach associated with Marshall and Pigou (Snowdon and Vane, 2005: 50; see also Sloman, 1994).

In Fisher’s approach, money is desired by agents in some fixed amount solely because it happens to be the medium of exchange. In this analysis money yields no gains to the holder. In terms of

the quantity theory of money an increase in the supply of money will lead to an exactly proportionate increase in the price level based on the assumptions that (i) V and Q are fixed with respect to the money supply; (ii) Q is determined by the full employment output level of the economy, achieved within reasonable periods after shocks pushing the economy off full employment; (iii) the supply of money is exogenous; and (iv) the direction of causation runs from MV (left) to PQ (right) (see for instance Mishkin, 2004: 219 and 220; Sloman, 1994: 606; or Wykoff, 1976: 60). The implication is that money supply increases cause price inflation. The main criticism of this interpretation of the quantity theory of money is linked to the assumptions, particularly in as much as it is based on an assumption that the velocity of money is constant. Keynes stated as far back as 1936 that there is “... no reason for supposing that V is constant” (1942: 201).

The Cambridge cash-balance approach differs from the analysis of Fisher in its consideration of money as a desired a store of value, rather than only as a medium of exchange. A clear distinction is also drawn between the demand for money (M_d) and the supply of money (M) (Sloman, 1994: 606; Snowden and Vane, 2005: 51). Money therefore increases utility “... by enabling the divorce of sale and purchase as well as ... [serving as] ... a hedge against uncertainty” (The history of economic thought website, [S.a.]). As money has the ability to yield utility to its holder because it serves a precautionary function and provides a store of value, the demand for money is not only driven by a transactions motive, but also by income, wealth and interest rates. The money demand function in this analysis can be stated as $M_d = kPY$. In this equation M_d represents the demand for nominal money balances, PY is the money value of national income (with P representing prices and Y representing income) and k is the fraction of PY that private economic agents wish to hold. In this analysis k is assumed to have a constant value¹⁰, although it was recognised that the coefficient could vary in the short run (Snowdon and Vane, 2005: 51).

The Cambridge analysis focuses on M_d , which is equal to the supply of money (M) determined by the central bank, and as a result $M = kPY$. As is the case with the approach followed by

¹⁰ Also known as the *Cambridge Constant* (The history of economic thought website, [S.a.]).

Fisher, Y represents the full employment value of output and is therefore constant. As k is also constant, M (money supply) determines P (prices), and changes in M will result in changes in the price level (see for instance Sloman, 1994: 606; or Wykoff, 1976: 61). However, as is the case with the earlier analysis of the quantity theory of money, this analysis did not withstand the test of time owing to the need to relax assumptions about constant values.

The first to question the classical quantity theory of money (even before Keynes) was Hawtrey (Haberler, [S.a.]). Haberler states that “... according to Mr Hawtrey, there is a tendency in our banking system to keep the interest rate too low during the upward swing of the cycle; then prices rise, we get a credit inflation, and sooner or later the banks are forced to take steps to protect their reserves – they increase the rate and bring about the crisis and the depression ... [t]he reason which Mr Hawtrey gives for this is different from the one which Professor Irving Fisher and other writers of this group have to offer” (Haberler, [S.a.]).

As far back as 1932 Hawtrey stated in his book *The Art of Central Banking* that “... the power of a central bank ought to be used to prevent undue fluctuations in the price level ... ” (1932: viii). Hawtrey stated in respect of inflation that “... the essence of the evil is an undue enlargement of the consumers’ income and outlay, and a consequent rise of prices or depreciation of the currency unit” (1932: 265), and uses for inflation the definition of “... an expansion of the consumers’ income and outlay ... ” (1932: 331). Hawtrey offers, *inter alia*, increases in interest rates as a solution to the prevention of inflationary problems (1932: 129 – 131; 272 and 273; see also Haberler, [S.a.]).

The Great Depression provided the backdrop for the work of Keynes. After the crash in share prices on securities exchanges in the United States in October 1929, the world entered what is known today as the Great Depression. The Great Depression was characterised by stagnant production and high unemployment (Parkin, 2003: 474). The prevailing view of classical economists was that an economy cannot stagnate in a position of sustained unemployment associated with production at a lower level than full employment output. The classical view was that prices and wages will adjust downward in a flexible fashion and within a reasonable period

of time to a point where the economy will again achieve full employment output¹¹. During the Great Depression this did not happen, and the economy remained stuck in a less than full employment position for an extended period of time. In the United Kingdom (UK), for instance, unemployment fluctuated with the trade cycle before World War I, averaging around 4½ per cent of the workforce, but reached more than 22 per cent of the workforce in 1932 and 1933 (Sloman, 1994: 605). Keynes already stated in 1930 that *The Slump of 1930* (as he called the Great Depression at the time) in the UK and in the United States was caused by interest rates at too high a level (1930: 377 to 387). He suggested as the remedy for the slump sharply lower interest rates induced by the Bank of England and the Board of Governors of the Federal Reserve System (Fed) (Keynes, 1930: 385 and 386).

Reasons for the prolonged period of unemployment differed between countries. The Great Depression in the United States was prolonged, *inter alia*, because “ ... the economy was further bombarded with huge negative demand shocks ... ” (Parkin, 2003: 782) and failures of commercial banks (Parkin, 2003: 724). In the case of South Africa the Great Depression was prolonged because the country stayed on the gold standard after it was abandoned by the UK (discussed in Chapter 5), and a drought causing severe hardship in farming communities.

The Great Depression was also prolonged internationally as a result of monetary policy mistakes. At the time of the Great Depression, economists under the influence of the quantity theory of money, “ ... did not recognise that velocity ... [of money] ... declines sharply during severe economic contractions” (Mishkin, 2004: 521). As the prevailing view was that velocity remains constant, a contractionary monetary policy was inadvertently followed by many countries during the Great Depression. In his liquidity preference theory, Keynes abandoned the view that velocity was constant (1942: 201; see also Mishkin, 2004: 521). Keynes used the assumption that individuals have transactions, precautionary and speculative motives to exercise a demand for money (1942: 170). Keynes held the view that a severe contraction such as the Depression resulted in a situation where “ ... personal saving increases and investment stagnation combined

¹¹ Ricardo, for instance, held the view that “[i]f wages were too high to clear the labour market, they would simply fall until the disequilibrium was eliminated” (Sloman, 1994: 602).

to reduce demand severely” (Wykoff, 1976: 216), thereby giving rise to the view that the central bank cannot introduce effective monetary policies to counter prolonged recessions.

Whereas the classical economists preceding Keynes supported Say’s Law, Keynes challenged this assumption of a stable consumption-income relationship (1942: 26; see also Wykoff, 1976: 244 and 245). The French economist Jean-Baptiste Say stated that overproduction is not possible, as supply creates its own demand (see for instance Parkin, 2003: 556; Samuelson and Nordhaus, 2001: 710; or Sloman, 1994: 603). Keynes held the view that production does not depend on supply, but on demand, in as much as it is determined by what people are willing to buy (Parkin, 2003: 556; see also Wykoff, 1976: 245), thereby challenging the assumption of clearing markets (Sloman, 1994: 612). This brings to mind the earlier view of Malthus, who stated that a recession was the result of a lack of effectual demand (Sloman, 1994: 602). If the general public increases savings rather than to spend, but business enterprises do not invest the amount saved, resources will remain unemployed indefinitely. This is contrary to the classical view that the downward adjustment of wages and prices is flexible enough to ensure a new full employment equilibrium within a reasonable period of time.

Keynes introduced the liquidity preference theory in his explanation of the behaviour of money market equilibrium and the suitable use of monetary policy (Moggridge, 1980: 103). In his analysis, “... Keynes rejected the notion that the relation between money and income was stable” (Wykoff, 1976: 245). Keynes made a distinction between the transactional, the precautionary and the speculative demand for money (Keynes, 1942: 170; see also Mishkin, 2004, 521 to 524; or *New Palgrave: A dictionary of Economics*, 1987: 22 and 23). In the distinction between these different forms of demand for money, Keynes states that “... we can usefully employ the ancient distinction between the use of money for the transaction of current business and its use as a store of wealth” (1942: 168, see also Hansen, 1953: 126).

Keynes viewed the transaction motive as a combination of an income motive, dependent on the amount of income and the time period between receipt and disbursement, and a business motive, determined by the interval between the time of business expenditure and the receipt of the

proceeds of sales (1942: 195 and 196). The precautionary demand for money is defined by Keynes as “ ... the desire for security as to the future cash equivalent of a certain proportion of total resources ... ” (Keynes, 1942: 170). In respect of the transactions demand and the precautionary demand, Keynes states that “ ... there is no necessity to hold idle cash to bridge over intervals if it can be obtained without difficulty at the moment when it is actually required” (Keynes, 1942: 171). Such demand is therefore influenced only to a limited degree by interest rates (Hansen, 1953: 128), and will “ ... be highly inelastic with respect to the rate of interest i unless this is very high” (Hansen, 1953: 129).

The speculative demand of money is defined as “ ... the object of securing profit from knowing better than the market what the future will bring forth” (Keynes, 1942: 170). Keynes divided the assets that can be used to store wealth into cash and bonds (Mishkin, 2004: 522). Keynes assumed that money (cash) held for speculative purposes does not provide any return for the speculator. The return on bonds is determined by interest payments and any possible capital gain or loss, which is dependent on the expectations of future interest rate movements (see for instance Wykoff, 1976: 246 and 247). An expectation that interest rates will increase by a substantial margin would lead to an expected capital loss that might outweigh the interest earned from continued investment (Keynes, 1942: 198 and 199; see also Mishkin, 2004: 522), thereby stimulating the demand for cash at the expense of bonds. Consequently, the demand for money (cash) is negatively related to interest rates.

A special case develops in the Keynesian analysis of the liquidity preference theory when interest rates are on a sustained sharp decline and all bond holders anticipate capital losses. The supply of bonds would increase without a concomitant demand, resulting in an infinitely elastic demand for money (Wykoff, 1976: 248), known as the liquidity trap. Keynes states that “[t]here is the possibility ... that, after the rate of interest has fallen to a certain level, liquidity-preference may become virtually absolute in the sense that almost everyone prefers cash to holding a debt which yields so low a rate of interest. In this event the monetary authority would have lost effective control over the rate of interest. But whilst this limiting case might become practically important in future, I know of no example of it hitherto” (1942: 207). In this regard Wykoff states that

“[b]oth Keynesian and non-Keynesian economists have reservations about the liquidity trap and about the speculative demand for money motive” (1976: 248).

In an analysis of the presentation of the liquidity preference theory by Keynes (1942), Hansen states that “[t]he *General Theory* ... [Keynes, 1942] ... has the effect of relegating money to a place of less prominence than that assigned to it in the *Treatise* ... [Keynes, 1930]” (1953: 216). The main contribution of Keynes was not so much the liquidity preference theory, however, but his attempt to find solutions to the Great Depression, a problem addressed already in his earlier book (Keynes, 1930: 377 to 387). Keynes states that “[t]he outstanding faults of the economic society in which we live are its failure to provide for full employment and its arbitrary and inequitable distribution of wealth and income” (1942: 372)¹². In proposing his solution for the underemployment and unemployment problem experienced during the Great Depression, Keynes held the view that an economy will return only to full employment when there is no obstacle to full employment (e.g. sticky wages or demand deficiencies), thereby challenging Say’s Law.

Keynes (1942) offered a combination of solutions to the problems posed by the Great Depression, based on what Moggridge calls “ ... breaks from the past” (1980: 96). In essence the aim was to ensure a return to full employment within a reasonably short period of time, which did not happen because prices and wages did not adjust smoothly to reflect depressed economic conditions as was predicted by the classical economists. In no particular order, the first proposal of Keynes was that the government should increase its role in the economy by exercising “ ... a guiding influence on the propensity to consume ... ” (Keynes, 1942: 378), hence advocating an increased role for government intervention in the economy. The aim is to increase demand in the economy, which subsequently became known as demand management.

The proposed second solution is linked to the first: an increase in the equality of income distribution (Keynes, 1942: 373 and 374). Keynes held the view that “[g]reater equality will raise the consumption function; and an increase in the propensity to consume will serve to increase the

¹² These matters still occupy the minds of economists and developmental specialists at the time of completion of this study. The inequitable distribution of wealth and income is particularly relevant in South Africa, where the Gini coefficient rose from 0,69 in 1996 to 0,77 in 2001 (Human Sciences Research Council, 2004).

inducement to invest” (Hansen, 1953: 219). Redistribution by means of taxation to fund increased spending by the government can support the aim of greater income equality in societies. Even under conditions of economic depression some justification for higher taxes on the incomes of those employees fortunate enough to retain their jobs can be found. Parkin states that “... those who kept their jobs barely noticed the Great Depression. It is true that wages fell from 57c an hour in 1929 to 44c an hour in 1933. But at the same time, the price level fell by a larger percentage, so that real wages actually increased. Thus people who had jobs became better off during the Great Depression” (2003: 722). A tax increase even during the Great Depression would therefore have kept employed people at the same real after-tax position.

Thirdly, Keynes questioned the prevailing level of interest rates and stated that “... the scale of investment is promoted by a low rate of interest, provided that we do not attempt to stimulate it beyond the point which corresponds to full employment” (1942: 375). This point of view corresponds with the viewpoint put forward already in 1930 (Keynes, 1930: 377 to 387).

The fourth proposal considered enhanced international trade in as much as Keynes held the view that it could become an instrument to be used to the advantage of all participants (1942: 383). At the core of these proposals was the need to restore full employment in economies through an increased role of government, although Keynes “... was opposed to a system of state socialism” (Hansen, 1953: 221). Keynes states that “... a somewhat comprehensive socialising of investment will prove the only means of securing an approximation to full employment ... but beyond this no obvious case is made out for a system of State Socialism which would embrace most of the economic life of the community” (1942: 378).

Hansen points out that “Keynes did not come to grips with the possible inflationary implications of a deliberate programme of sustained full employment ... Keynes ... was thinking ... about normal peacetime conditions and not about the overfull employment of war and post-war booms” (1953: 214). Sustained peacetime inflation emerged after the Second World War under conditions completely divorced from the employment problems of the early 1930s (see for instance De Wet, 1987: 3) that had given rise to Keynes’s views on the role of government.

Already in 1953 Hansen raised the question whether Keynes ceased to be a Keynesian (1953: 222) in the period after 1936. Hansen concludes that “[t]here is no evidence ... of any change in his ... [Keynes’s] ... fundamental economic thinking: what had changed was his view of the role of the United States in international economic affairs” (1953: 227).

Snowdon and Vane (2005) adopted the terminology of Coddington (1983) to divide the interpretations of Keynes’s theories into three clusters (or schools): the *hydraulic* (or orthodox) interpretation, the modified general equilibrium approach and the *fundamentalist* (or Post-Keynesian) interpretation.

First, the orthodox interpretation stresses the inherent instability of economic systems and the long period that it takes for a return to full employment after a shock in the absence of demand management. This interpretation has as a major weakness a “ ... lack of convincing reason for wage and price rigidities based on rational behaviour” (Snowdon and Vane, 2005: 71). The Pigou wealth effect has shown that falling prices increase real wealth during an economic downturn, which eventually leads to an increase in consumption expenditure. Davidson states that “ ... the failure of orthodox Keynesian analysis and policy prescriptions fuelled the monetarist and new classical counter-revolutions” (2005: 451).

Secondly, the modified general equilibrium approach focuses attention on sustained declining output owing to a lack of co-ordination between the decisions of economic agents because they respond to wrong price signals and question assumptions about rational behaviour in decision-making (Snowdon and Vane, 2005: 72; see also Akerlof, 2002; or Leijonhufvud, 1992). Keynes himself questioned the rationality of behaviour of speculators (1930: 359), and states that “[t]he value of a company’s shares, and even of its bonds will be found to be sensitive to a degree, which a rational observer from outside might consider quite absurd, to short-period fluctuations in its known or anticipated profits” (1930: 360). In challenging the assumption that private economic agents act in a rational way at all times, economists could reconsider the contribution of Keynes to economic behaviour. Rational behaviour in investment decisions is questioned when it is said that investment decisions are driven by a combination of fear and greed, rather

than by rational decision-making (see for instance Authers, 2006: 12). This has given rise to neurofinance, the study of the way in which fear dominates reason and greed distorts reason (Authers, 2006: 12) and is related to research in the field of neuroscience, by studying the way in which consumers make purchasing decisions (Mitchell, 2007: 5).

In its measurement of perceptions of the credibility of inflation figures, this study is linked to questions raised about the assumption of rational behaviour and rational perceptions in economic decision-making, particularly under conditions of increased affluence (Galbraith, 1975). Marber states that “... in the United States and other advanced industrialised countries, there has been a trend towards individualised high-end speciality goods ...” (2003: 160 and 161), e.g. oversized sport utility vehicles. The question whether this behaviour is rational in the true sense of the word should be raised, particularly as this behaviour contributes to societies that are “... gobbling up the earth’s resources at a dizzying pace” (Marber, 2003: 164). Likewise, “[i]n at least some Keynesian models, workers are less than rational. For example, they may harbour money illusions” (Blinder, 1988: 284).

Thirdly, the Post-Keynesian interpretation regards “... the influence of unstable expectations due to uncertainty as a key feature of Keynes’s work” (Snowdon and Vane, 2005: 71). In this analysis “... the complete unpredictability of the future may have important economic consequences” (2005: 472). Snowdon and Vane state that “[t]he more radical Post-Keynesian interpretation ... continues to offer an alternative vision of how the macroeconomic system operates” (2005: 699). Post-Keynesianism has been described as “... an extremely broad church” (Harcourt, 2006: 2; see also Davidson, 2005: 452). The use of *Post Keynesian* as an accepted name for this *broad church* “... became widely accepted after the *Journal of Post Keynesian Economics* appeared in 1978” (Niggle, 2004: 50). Davidson raises the opinion that “Post Keynesian theory evolves from Keynes’s revolutionary approach to analysing a money-using, entrepreneur economy” (2005: 453).

Although this group of economists can therefore hardly be pinned down to narrow, single or specific views, they generally hold the view that a market economy lacks any natural tendency to

return to equilibrium and the restoration of full employment after exogenous shocks. Equilibrium and full employment can only be restored within a reasonable time frame through activist government policies, and in particular fiscal policies owing to weaknesses in monetary policy. In a Post-Keynesian analysis of economics, full employment is regarded as a higher priority than stable prices¹³ as it is argued “... that the level of unemployment necessary to keep effective downward pressure on wages and prices entails unacceptable social costs” (Niggle, 2006: 379).

Post-Keynesians stress that no economy is ever in a true state of equilibrium at any particular or given point in time, but rather in constant transformation owing to one or more positive or negative exogenous shocks. Such transformation is *path-dependent* and not *destination-dependent*, thereby allowing governments leeway to determine and improve the outcome of economic activity. In this regard Robinson states that “[t]o me, the expression *post-Keynesian* has a definite meaning; it applies to an economic theory or method of analysis which takes account of the differences between the future and the past” (1978: 210).

In its approach to monetary theory, the Post-Keynesians view money as endogenous to the real sector, while it is viewed as exogenous in terms of traditional monetary theory. The implication of this Post-Keynesian endogenous view is that the money supply is determined in the market for money, and not under control of the central bank. Bain and Howells (2003: 87) explain this view of endogenous money supply in terms of a modern monetary system, where a central bank stands ready to grant accommodation (i.e. increase the money supply) to commercial banks in the event of liquidity shortages, rather than to control the money supply. In this regard Moore states that “if bank loans are largely demand determined ... this then implies that the money supply is credit driven” (Moore, 1988: 373).

Money supply that is determined endogenously has serious implications for monetary policy, as it leaves only short-term interest rates within the control of the central bank. This conclusion of the Post-Keynesians might provide an explanation for their support of financial market regulation

¹³ This assessment leaves some impression of reasoning in terms of a short-run Phillips curve, i.e. some trade-off for lower unemployment at the expense of less price stability.

(see for instance Niggle, 2004: 35). If the central bank can control only short-term interest rates, other forms of control (i.e. through a regulatory framework) are certainly required. In a similar fashion many Post-Keynesian economists “... advocate fixed exchange rate systems constructed around an international financial institution which could issue liquid financial assets as needed by deficit countries” (Niggle, 2004: 35) as a measure to increase financial control.

A narrow Post-Keynesian view of the banking system regards its functions as the setting of deposit rates and acceptance of deposits on the one hand; and, on the other, the provision of loans at a rate exceeding the rate paid on deposits (Godley and Lavoie, 2004: 3) to all creditworthy customers, but particularly to producers to fund work-in-progress and stock (as completion of production and sales cannot be matched perfectly). However, in practice banks perform much broader functions beyond this narrow description, e.g. the issuing of capital, the accumulation of institutional net worth, the issuing of commercial paper and the holding of financial assets (Godley and Lavoie, 2004: 8). These expanded functions of banks, over and above the narrow description, can contribute to continued instabilities and shocks to an economy (Godley and Lavoie, 2004: 8).

This analysis of the banking system supports the Post-Keynesian view “... of a very unstable economy, whose growth rate is the result of an open-ended transformational process taking place through economic fluctuations, characterised by excessive unemployment and inequality, and which is often threatened by incoherence and the possibility of breakdown” (Niggle, 2004: 1). In the Post-Keynesian analysis, spending and real output are insensitive to interest rate reductions in recessions (see for instance Niggle, 2004: 30). The consequence of this ineffectiveness of a monetary policy relaxation under recessionary conditions is the need to employ other demand stimulating policies (see for instance Arestis and Sawyer, 2002; see also Niggle, 2006: 378). In this environment of endogenous money and relatively ineffective monetary policy, together with macroeconomic equilibrium below full employment after negative economic shocks combined with very weak adjustment to such shocks (see for instance Snowden and Vane, 2005: 702), it follows that Post-Keynesians prescribe economic adjustment focusing on demand management policies under control of the government.

In 1958 Phillips published a study linking unemployment and the rate of change in money wage rates in the UK for the period 1861 to 1957 (Dornbusch and Fischer, 1988: 466). Based on the research, Phillips developed a curve showing that a higher rate of unemployment is associated with a lower rate of increase in money wages, thereby showing a trade-off between unemployment and wage inflation (Dornbusch and Fischer, 1988: 467; Wykoff, 1976: 384)¹⁴. This subsequently became known as the Phillips curve, although the work of Phillips was not the first on the topic. As far back as 1926 Fisher studied and published a paper on the co-movement of inflation (or the purchasing power of the dollar as he also calls it) and the unemployment rate (Fisher, 1926). Fisher's analysis confirms the stimulation of employment during a period of inflation, but he states that although an inflationary period helps to provide jobs, it also raises the cost of living to the detriment of employees (Fisher, 1926).

Based on interpretations of the analysis of Phillips, a view of a stable trade-off between higher inflation (rather than an increase in money wages as assessed by Phillips) and increased economic growth (rather than increased employment) developed over time (see for instance Wykoff, 1976: 385). This gave rise to a view that inflation should be "allowed" for the benefit of improved economic growth. However, by the second half of the 1960s, this approach started losing its appeal (De Wet, 1987: 24), with Friedman stating in 1968 that "... Phillips wrote his article for a world in which everyone anticipated that nominal prices would be stable and in which that anticipation remained unshaken and immutable whatever happened to actual prices and wages" (1968: 8). Subsequently, two views on the Phillips curve developed: The short-run Phillips curve and the long-run Phillips curve (see for instance Parkin, 1999: 746; or Samuelson and Nordhaus, 2001: 695 and 696).

The short-run Phillips curve is viewed as a trade-off between some form of inflation and some form of lower unemployment or economic growth, but holds true only under conditions of an unanticipated increase in aggregate demand (Parkin, 1999: 746). An unanticipated increase in

¹⁴ Some literature mistakenly states that the research of Phillips shows an inverse relationship between inflation and unemployment (see for instance Parkin, 1999: 746; or Mohr and Fourie, 2004: 568). Michie states that "[t]here is no clear consensus within economic theory about the inflation-unemployment relationship" (2006: 87).

aggregate demand increases inflation and lowers unemployment, which results in a trade-off between the two. The outcome is employment below its natural rate and an increase in prices (Parkin, 1999: 747). This result is supported by conditions of unanticipated inflation, as unanticipated inflation results in aggregate demand temporarily exceeding potential output (Parkin, 1999: 744).

The long-run Phillips curve is a vertical line at the natural rate of unemployment, showing no trade-off between rising inflation and unemployment. The natural rate of unemployment¹⁵ is the rate of unemployment associated with full employment (Parkin, 1999: 575, see also Stiglitz, 1997: 799). This is related to “... the NAIRU, the non-accelerating inflation rate of unemployment” (Mishkin, 2004: 429). The NAIRU can be defined as the “... unemployment rate consistent with a constant inflation rate. At the NAIRU, upward and downward forces on price and wage inflation are in balance so there is no tendency for inflation to change” (Samuelson and Nordhaus, 2001: 771). Changes in inflation will therefore not result in any changes in the NAIRU in the long run, thereby implying that the economy will remain at potential output irrespective of movements in inflation in the long run (Stiglitz, 1997: 800).

Michie states that the NAIRU is not necessarily static at one rate (or level) of unemployment, because “... if aggregate investment could be increased, raising productivity and competitiveness, then the feasible wage that firms would be able to pay would rise. This again would allow the economy to operate at lower rates of unemployment, without inflationary pressures developing. Enhancing productive capabilities shifts the NAIRU curve to the left” (2006: 91). The implication is not only that there “... may be no unique equilibrium point (NAIRU) with only that one level of unemployment associated with non-accelerating inflation” (Michie, 2006: 91), but also that “... the reduction in unemployment would result in inflation falling rather than rising” (Michie, 2006: 91).

¹⁵ Samuelson and Nordhaus (2001: 696) state that the terminology *natural rate of unemployment* is unsatisfactory because there is nothing natural about it.

The differentiation between the short-run and long-run Phillips curves has changed the understanding of the links between inflation, unemployment and output since its first publication by Phillips in 1958. Clearly the short-run curve does not hold true under all circumstances for prolonged periods of time – if it was indeed the case, no country in the world would have suffered unemployment, as unemployment would have been limited by means of increased inflation. Mishkin states that the “Phillips curve theory is now highly controversial, and many economists believe that it should not be used as a guide for the conduct of monetary policy” (2004: 429).

As inflation became a chronic and persistent problem towards the end of the 1960s, the stage was set for a reaction to prevailing (Keynesian) views of the time (Moggridge, 1980: 166), particularly as stagflation¹⁶ developed (Sloman, 1994: 621). According to Moggridge, “[t]he earliest exercises surrounding the monetarist revival largely centred on the statistical testing of a money-income relationship ... to suggest that changes in the nominal supply of money, defined in various ways, were the most important determinants of the level of income” (1980: 166). This reaction became associated in the minds of many people with the work of Friedman¹⁷ (Moggridge, 1980: 166).

Friedman is of the view that “ ... substantial inflation is always and everywhere a monetary phenomenon ... ” (Friedman and Friedman, 1980: 299; see also Sloman, 1994: 621). This view serves as one of the cornerstones for his revival of the quantity theory of money. Wykoff describes this approach as a “ ... groundswell of a counterrevolution in economic theory ... [led] ... by Milton Friedman and the Chicago School. The approach was not the income-expenditure approach of Keynesians but the quantity theory of money – the modern offspring of the pre-Keynesian classical quantity theory” (1976: 25). The main differences are a focus on flows by

¹⁶ Stagflation can be defined as the combination of low growth and high unemployment with high inflation (Sloman, 1994: 621).

¹⁷ Friedman states that the University of Chicago was “ ... one of the few academic centres at which the quantity theory of money continued to be a central and vigorous part of the oral tradition throughout the 1930s and 1940s ... ” (Friedman, 1956: 3; see also Wykoff, 1976: 55), but Patinkin and Johnson have provided evidence that there was no perceptible oral tradition at the University in the inter-war period which can be related to the theoretical structure of Friedman's Monetarism (The history of economic thought website, [S.a.]).

the Keynesians and a focus on stocks, and particularly the stock of money, by the Chicago (monetarist) School (Wykoff, 1976: 25), and the view of the monetarists that the velocity of money is relatively stable (Friedman, 1956: 21; Levi, 1994: 425; Samuelson and Nordhaus, 2001: 716 and 724; Sloman, 1994: 788), hence resuscitating the quantity theory of money.

In his analysis of inflation, Friedman states that “... the government alone is responsible for any rapid increase in the quantity of money. That very fact has been the major source of confusion about the cause and the cure of inflation” (Friedman and Friedman, 1980: 297). This view implies a “broad definition” of *government* which implicitly includes the central bank. This view is also related to the statement that “... substantial inflation is always and everywhere a monetary phenomenon ...” (Friedman and Friedman, 1980: 299). These two elements form the cornerstone of Friedman’s approach to monetary policy and the cure of inflation, which is a slower rate of increase in the quantity of money (Friedman and Friedman, 1980: 329). To this end the monetary authority (the central bank and the treasury) should set a target growth rate for the quantity of money (Friedman, 1968: 16).

Sloman divides the followers of Friedman into extreme monetarists and moderate monetarists. The first group believes that markets clear very quickly owing to virtually instantaneous adjustments in expectations to new situations, while the second group believes that markets adjust within a year or two to new circumstances (1994: 626).

The work of Friedman has set the scene for the development of different schools of thought in economics (see for instance Dornbusch and Fischer, 1988; Snowdon and Vane, 2005; or Wykoff, 1976). Although these different schools are known by a variety of names, they can broadly be defined as two groups: followers of the approach set by Keynes in 1936, or followers of the revival of the classic theory by Friedman. The followers of Keynes support government intervention to solve economic problems, while the followers of Friedman propagate the ability of the market mechanism to solve economic problems (Dornbusch and Fischer, 1988: 4 and 5). The debate centres around the benefits of the visible hand of the government *versus* the invisible hand of the market (see for instance Snowdon and Vane, 2005: 219; or Nordhaus, 1975: 169).

In this debate emphasis is placed on the credibility of policies and their execution, the limitations of discretionary stabilisation policies and on expectations (Dornbush and Fischer, 1988: 674). Samuelson and Nordhaus state that “[e]xpectations are said to be rational if they are not systematically wrong (or biased) and use all available information” (2001: 763), with any errors in forecasts or predictions being of a random nature (Sloman, 1994: 858). Parkin defines a rational expectation as “[a] forecast based on all relevant information” (1999: G-9). Over time “... rational expectationists ... became known collectively as the new classical school” (Snowdon and Vane, 2005: 219), or as extreme monetarism (Sloman, 1994: 626).

The new classical school holds the views that people use all information available in making decisions and that prices and wages are flexible in their ability to adjust to changed circumstances (Samuelson and Nordhaus, 2001: 720). In their view, long-term wage contracts are renegotiated when conditions change, and wage flexibility is accordingly achieved within a reasonable period of time (Parkin, 1999: 5). The implication is that “... markets clear very quickly and expectations adjust virtually instantaneously to new situations” (Sloman, 1994: 626). Mishkin states that “... all wages and prices are completely flexible with respect to changes in the price level; that is, a rise in the expected price level results in an immediate and equal rise in wages and prices because workers try to keep their real wages from falling when they expect the price level to rise” (2004: 660). Snowdon and Vane regard this assumption of “... markets clearing ... [as] ... the most controversial aspect of classical theorising” (2005: 220).

Regarding the use of all available information, rational expectations are linked to unbiased forecasting. This does not imply that forecasts are always correct or that expectations can only be formed on the basis of accurate forecasting, but merely implies that the information is unbiased and not systematically incorrect (Dornbusch and Fischer, 1988: 675; Samuelson and Nordhaus, 2001: 720). This approach to rational expectations is related to the efficient-market hypothesis for the valuation of securities, which can be defined as “... all new information is quickly understood by market participants and becomes immediately incorporated into market prices” (Samuelson and Nordhaus, 2001: 763). The expected result is that “... if forecast errors are

expensive to the forecaster, any systematic errors will eventually be corrected by the people making them” (Dornbusch and Fischer, 1988: 675).

The implication of the new classical approach anchored in rational expectations is that anticipated policy actions and amendments do not influence aggregate demand and employment (Mishkin, 2001: 661). The only way in which economic policy can influence output and employment is through unanticipated policy actions, but private economic agents will adjust quickly to such action, thereby limiting their effectiveness. Policy makers cannot, therefore, rely on any systematic misunderstanding of their policies for effective implementation. As people adapt their expectations, they will again have rational expectations about the implications of policies (Dornbusch and Fischer, 1988: 675 and 676). Under these circumstances policies based on fixed rules, which enhance anticipation of policy actions, will deliver the best economic results in the long run (see also Section 4.2 in Chapter 4).

While rational expectations support the rules-based policies advocated by the monetarists, this approach does not support the assumption of the monetarists that the velocity of money is relatively stable. This assumption was challenged in the *Lucas critique*, with Lucas pointing out that private economic agents change behaviour when faced by different policies (see for instance Mishkin, 2004: 716). Velocity is indeed not constant, but can change if a fixed money growth rule is adopted by the central bank, implying that it is not possible to base monetary policy on a fixed money rule (Samuelson and Nordhaus, 2001: 725).

Criticism and shortcomings of the new classical school’s approach gave rise to the development of the real business cycle theory (Mishkin, 2004: 597). This theory accepts that economic output is influenced by aggregate supply shocks caused by changes in technology (Samuelson and Nordhaus, 2001: 722; see also Mishkin, 2004: 597) that influences the growth rate of productivity (Parkin, 1999: 773). Supporters of this school believe that the business cycle drives money (Mishkin, 2004: 616), rather than money driving the business cycle – the view supported by the monetarists. Consequently, this analysis does not leave room for discretion in policy application.

Discretionary policies will not influence factors causing the shocks as real developments, rather than nominal or monetary developments, cause the business cycle.

The main criticism of the real business cycle theory is that “... [m]any economists doubt whether the technology shocks required in order to generate business cycle phenomena are either large enough or frequent enough” (Snowdon and Vane, 2005: 333) to create the swings in output. Related to this is the criticism that recessions are not characterised by technological regress (Snowdon and Vane, 2005: 334), implying that productivity changes do not cause the business cycle, but the cycle causes fluctuations in productivity (Parkin, 1999: 776). Mishkin states that “[r]eal business cycle theory is highly controversial and is the subject of intensive research” (Mishkin, 2004: 597; see also Chatterjee, 1999).

The second half of the 1980s saw a debate on the continued relevance of Keynesian economic theory. According to Snowdon and Vane, the main shortcomings of the Keynesian models were viewed as “... inadequate microfoundations which assume non-market clearing; and the incorporation in both Keynesian and monetarist models of a hypothesis concerning the formation of expectations which was inconsistent with maximising behaviour ...” (2005: 358). According to Blinder, “[b]y about 1980, it was hard to find an American academic macroeconomist under the age of 40 who professed to be a Keynesian” (1988: 278). This happened only some nine years after Nixon, at the time President of the United States, declared in 1971 that “[w]e are all Keynesians now¹⁸” (see for instance Brannon, 2006; Moggridge, 1980: 11; Smart, 2006; or Snowdon and Vane, 2005: 23). This difference in sentiment shows that economic thinking can change rapidly, and with it the schools of economic thought.

A new Keynesian school of thought subsequently emerged and its focus is described by Dornbusch and Fischer as an explanation of the reasons why “... the economy does not work well” (1988: 688). To this end a distinction can be drawn between moderate Keynesians and extreme Keynesians (Mayer, 1997: 13; Sloman, 1994: 627). Moderate Keynesians “... argue

¹⁸ A slightly different interpretation is that Nixon pronounced himself a Keynesian in 1969, which was newsworthy because a Republican president was adhering to the liberal economic policies of Keynes. As a result Friedman remarked that “[w]e are all Keynesians now” (Newman, 2003).

that economies will probably eventually pull out of recession even if governments do not boost demand” (Sloman, 1994: 627). Samuelson and Nordhaus state that “[e]ventually the inflexible or sticky elements of cost ... become unstuck and negotiable” (2001: 666). This adjustment will be added by a decline in the real wage level and the accumulation of surplus savings will encourage banks to find borrowers (Sloman, 1994: 621). After a period of recessionary conditions, investment will also recover as redundant equipment is replaced and as banks attempt to find borrowers for surplus funds. However, as this can be a slow process, it requires active government investment to boost demand. Even once an economy is near full employment, “ ... the government must continue to control aggregate demand to prevent fluctuations in output and employment” (Sloman, 1994: 627). To achieve this goal, government intervention is required “ ... to smooth the peaks and troughs as far as possible. When the economy is in a cyclical downswing, expansionary monetary and fiscal policies are recommended. When the economy is booming, restrictive measures are proposed” (Mohr and Fourie, 2004: 579).

Extreme Keynesians “ ... argue that there is no automatic mechanism to eliminate demand-deficient unemployment even in the long run. Not only are wages sticky downwards, but any reductions in wages that do take place will further reduce consumer demand. Money circulating will automatically fall as banks lend out less and less in response to falling demand” (Sloman, 1994: 627). They base this view on their assumption that “ ... when aggregate demand decreases and unemployment rises, the money wage rate does not change. It is completely rigid in the downward direction ... [and] ... the economy gets stuck in a below full-employment equilibrium” (Parkin, 2003: 709). Extreme Keynesians¹⁹ are of the view that the only way out of this situation is for governments to increase aggregate demand by raising government expenditure and cutting taxes, because there are no natural forces operating to restore full employment (Parkin, 2003: 709). Samuelson and Nordhaus state that an economy can fall into a depression of such magnitude that “[a] nation could remain in its low-output, high-misery condition for a long time because there is no self-correcting mechanism or invisible hand to guide

¹⁹ The extreme Keynesians still favour a market economy, albeit with a large degree of government intervention to achieve the goal of full employment. Sloman (1994: 628) identifies as a further group of economists the radical left. This group sees the market economy as flawed and favours its replacement by an alternative system, e.g. state planning or worker control (Sloman, 1994: 628).

the economy back to full employment” (2001: 712). The implication is that “... the nation must spend its way out of recession. Extensive import controls must be used if necessary²⁰” (Sloman, 1994: 627).

Modern-day monetarists favour policies based on rules, while Keynesians favour policies based on discretion (see for instance Meltzer, [S.a.]; Mishkin, 2004: 654; or Sloman, 1994: 826 and 827). Friedman states that “[b]y setting itself a steady course and keeping to it, the monetary authority could make a major contribution to promoting economic stability” (1968: 17). The monetarists’ view of discretion in policy implementation is that it “... can involve long and variable time lags, which can make the policy at best ineffective or at worse destabilising” (Sloman, 1994: 826). The only way in which these lags can be eliminated, is by adopting a rules-based policy. This approach is related to the adaptive expectations hypothesis, which states “... that people base their expectations of inflation on past inflation rates” (Sloman, 1994: 845). The implication is that people learn from experience. If governments apply their rules consistently, people will adapt to such application of policy rules and adjust their behaviour accordingly.

The Keynesian preference for discretion is based on the viewpoint that demand is subject to numerous exogenous shocks, e.g. flowing from changes in consumption, expectations, exports, imports, industrial action, investment, political events, savings or world economic factors (see for instance Blinder et al., [S.a.]; Meltzer, [S.a.]; or Sloman, 1994: 827). Owing to these shocks economies are inherently unstable, requiring random intervention by government that cannot be based on rules, also because market-based economies have no natural or automatic tendency to achieve full employment. Davidson states that “[a] heterogeneous group of economists, united solely by their rejection of the neoclassical synthesis, often claim the same name to their approach to macroeconomic modelling, namely Post-Keynesian economics” (2005: 451).

In a response to the inability of the initial Keynesian approach to provide an explanation for the problem of stagflation (see for instance Snowdon and Vane, 2005: 699), Keynesians have

²⁰ To the contrary, Keynes (1942: 383) favoured free international trade. It seems fair to conclude that the Keynesians are somewhat eclectic in their support of some of the doctrines prescribed by Keynes.

adopted as modifications in recent years an increased focus on cost-push factors, equilibrium employment and adaptive expectations (Sloman, 1994: 864). In their explanation of cost-push factors, Keynesians put forward the explanation that the Phillips curve has moved to the right over time, resulting in a higher level of wage inflation at every level of employment. The resultant stagflation should be treated by policies aimed at shifting the Phillips curve to the left and back to its original position (Sloman, 1994: 865). To this end some Keynesians argue for the introduction of price and wage controls. Related to this view on the Phillips curve is the theory of the target real wage, i.e. a “... theory that unions bargain for target real wage increases each year irrespective of the level of real growth in the economy” (Sloman, 1994: 866). If economic growth is sufficiently large to pay for the increase in real wages, the economy will be free of cost inflation (see also Michie, 2006).

Problems with the stimulation of employment in order to eradicate unemployment continue to puzzle economists. One recent explanation is the efficiency wage theory (Levi, 1994: 470). Based on this theory, an employer can pay its workers a wage rate above the market wage rate (rather than the market-clearing rate), provided that workers’ productivity improves accordingly and worker turnover is reduced (which reduces training costs) and shrinkage is reduced as the cost of being detected is increased. As a result, for the economy as a whole “[w]ages remain higher than necessary, and the result is persistent unemployment. The traditional free-market story breaks down” (Levi, 1994: 470).

In the consideration of expectations, some Keynesians incorporate adaptive expectations into their models, while others incorporate rational expectations (Sloman, 1994: 867). However, in their incorporation of expectations, modern Keynesians differ from monetarists as they treat prices and wages as not perfectly flexible, and expectations influence output and employment decisions, rather than only pricing decisions (Sloman, 1994: 867). Moreover, prices and wages are more likely to be rigid when required to move downward than upward. If expectations are rational, the response of the economy to output shocks might be very slow owing to trade unions refusing to accept wage increases below the current rate of inflation, particularly if the public rationally predicts this resistance and acts accordingly. Under conditions of adaptive

expectations, any reduction in inflation will be even slower than with rational expectations (Sloman, 1994: 868).

Economists in the Austrian School are staunch supporters of the free-market economy. The Austrian School of economic thought has its roots as far back as 1871 with the work of Carl Menger (Garrison, 2005: 474; Walker, [S.a.]). The focus of the Austrian School is the individual (or entrepreneurship) and markets (see for instance Boettke and Leeson, 2003; or Garrison, 2005: 476). The Austrian School studies individual economic activity and the challenge of individuals to co-ordinate their actions with that of other individuals, e.g. linking the forces of supply and demand (Walker, [S.a.]). Individual actions and entrepreneurship accordingly serve as the underpinnings of economic theory. Individuals (also in their capacity as entrepreneurs) attach value to their own and the economic actions of other people through the market mechanism based on own individual perceptions of the measurement of value (Walker, [S.a.]). This brings to mind Galbraith's rhetorical question: "[w]ho can say for sure that the deprivation which afflicts him with hunger is more painful than the deprivation which afflicts him with envy of his neighbour's new car?" (Galbraith, 1975: 3 and 4).

The focus on the individual and on entrepreneurs implies that the Austrian School believes in free exchange between market participants, as they would not have carried it out if transacting parties would not have been in a better position after such exchange. Institutions (including governments and central banks) serve a useful purpose only in helping individuals to cope with uncertainty and a lack of perfect knowledge (Walker, [S.a.]).

In a free market for capital, the interest rate serves as the price of investment capital and reflects the actual time preference of lenders and borrowers. The Austrian School's preference is that the interest rate should not be subject to regulation, and calls such a rate the "natural interest rate". The control of money supply by the government through central banks disturbs the natural interest rate, implying that the actual market rate will no longer reflect the real supply and demand for investment capital. Periods of economic downturn are the mechanism used by the market to correct the misallocation of resources during periods when the actual interest rate was

held below the natural interest rate through intervention by the government or the central bank. Inflation is caused by an increase in the supply of money by the authorities, typically the central bank in modern economies. Inflation will be “cured” by a free market in money and banking (see for instance Foldvary, 2006; Garrison, 2005: 516; or Saville et al., 2005: 675), as it reflects the natural rate of interest as the price of capital.

The Austrian School has been in “... opposition with a post-WWII economics dominated by Keynesianism and its emphasis on the relationship between aggregate variables” (Boettke and Leeson, 2003: 451). The Austrian School has engaged in numerous arguments with other schools of thought, but has been sidelined to some extent in the mainstream economic debates in English-speaking countries (The history of economic thought website, [S.a.]). Boettke and Leeson are of the opinion that the Austrian School finds itself in a strange position with regard to their fellow economists, as “[t]hey believe others have stumbled upon the right answers to many practical policy questions, but for the wrong reasons” (2003: 453).

During the past decade the economic school of critical realism²¹ developed, but the literature seems to be divided about its possible contribution to the development of macroeconomic economic theory in the long run. Economic analysis using the tools of critical realism moves beyond the microfoundations of macroeconomics to the macrofoundations of microeconomics. This analysis questions the nature of the social structure and the way in which it has evolved. Bache states that “[a]n important characteristic of critical realism is a strong emphasis on ontology, that is, the study of the nature of reality, the study of what really exists” (2003: 3).

Bache states that an important criticism of critical realism “... against econometrics is that it turns upon the identification of strict regularities between observable events. According to critical realism such regularities are the exception rather than the rule in the social world” (Bache, 2003: 2). Hodgson, however, states that “[t]here is little consensus among critical realism on key questions of concern for economists. For instance, critical realists are themselves divided on the

²¹ This school of thought is linked to critical naturalism, a methodology seeking to identify the mechanisms producing social events while at the same time recognising that these mechanisms change more easily than objects in the physical world.

question of the value of econometrics” (2004: 53). Hodgson reaches the conclusion that critical realism seems “ ... to be a predominantly leftist political movement, of distinctly – but not entirely – Marxist hue” (2004: 70). However, it seems to be too early in its development to label this school of thought, as Hodgson attempts.

An overview of the current main schools of thought in macroeconomics is attached as Appendix E. This shows that the thinking of these schools overlaps in certain areas, but considerable differences are also evident. Snowden and Vane state that “ ... in practice the dividing line between schools is becoming increasingly blurred on many issues. With the benefit of hindsight, differences between schools have often been exaggerated” (2003: 701). Given the degree of overlap between the different schools, it comes as no surprise that Goodfriend and King (1997: 2, 4 and 26) stated during the last decade of the previous century that macroeconomics is moving toward a new neoclassical synthesis which inherits the neoclassical synthesis of the 1950s and 1960s and combines Keynesian and classical elements. This synthesis originally involved “ ... a desire to provide practical macroeconomic policy advice, a belief that short-run price stickiness was the root of economic fluctuations, and a commitment to modelling macroeconomic behaviour using the same optimisation approach commonly employed by microeconomists” (Goodfriend and King, 1997: 2), thereby providing “ ... new dynamic microeconomic foundations for macroeconomics” (Goodfriend and King, 1997: 2). The synthesis applies intertemporal optimisation and rational expectations to the analysis of pricing and output decisions in a Keynesian context as well as to the consumption, investment and labour-supply decisions of real business cycle models (Linnemann and Schabert, 2003). Jett, however, refers to the synthesis as a consensus model of monetary theory, stating that “[d]epending on who is using it, the model is sometimes called the New Neoclassical Synthesis Model and other times the New Keynesian Model” (2006).

Snowdon and Vane describe the central elements of this synthesis as “(i) the need for macroeconomic models to take into account intertemporal optimisation; (ii) the widespread use of the rational expectations hypothesis; (iii) recognition of the importance of imperfect competition in goods, labour and credit markets; and (iv) incorporating costly price adjustments

into macroeconomic models” (2003: 29). However, they state that “[c]learly this new consensus has a distinctly new Keynesian flavour” (Snowdon and Vane, 2003: 411). In this regard Goodfriend and King state that new neoclassical synthesis models “... offer policy advice based on the idea that price stickiness implies that aggregate demand is a key determinant of real economic activity in the short run” (1997: 26). In terms of their description of the new neoclassical synthesis, Goodfriend and King (2001: 1 and 2) state, *inter alia*, that:

- monetary policy must respect the real business cycle analysis determinants of real economic activity over time;
- the transmission of monetary policy to real economic activity is located in its influence on the ratio of the price charged by an average firm in monopolistic competition to its marginal cost of production, called the average markup;
- monetary policy action that raises aggregate demand raises marginal cost and lowers the average markup, which reduces the tax rate on work effort in a real business cycle model to sustain an increase in output and employment;
- price stability should be the objective of monetary policy achieved by means of a neutral policy that keeps output at its potential, defined as the outcome of an imperfectly competitive real business cycle model; and
- output must be supply-determined on average, although it may periodically be demand-determined owing to monopolistic competition and sticky prices.

The new neoclassical synthesis incorporates intertemporal optimisation and rational expectations into dynamic macroeconomic models, draws on New Keynesian economics in its incorporation of imperfect competition and costly price adjustments, and aims to develop quantitative models of economic fluctuations (Goodfriend and King, 1997: 25; see also Linnemann and Schabert, 2003). Its development is associated closely with Samuelson (Isa, 2003: 28). Samuelson held the view that “... the neoclassical synthesis should remove the contradiction between aggregate macroeconomics and traditional microeconomics and bring them together in a complementing complex theoretical system, which should serve as the starting point of an effective combination of monetary and fiscal policy” (Isa, 2003: 28).

Significantly for this study, it should be noted that the new neoclassical synthesis differs completely from the earlier new classical synthesis in respect of monetary policy. In terms of the earlier synthesis, inflation was viewed “... as having a momentum of its own and fluctuating with unmanageable shifts in the psychology of price setters. The new synthesis also views expectations as critical to the inflation process, but sees expectations as amenable to management by a monetary policy rule” (Goodfriend and King, 1997: 50). The new neoclassical synthesis shows that monetary policy has a direct influence on real economic activity, implying that it is not possible to interpret economic fluctuations independently of monetary policy (Goodfriend and King, 1997: 26). The synthesis also indicates that aggregate demand has to be managed by monetary policy (Goodfriend and King, 1997: 26). However, monetary policy can only exert its influence on economic activity within limits (Goodfriend and King, 1997: 31). This synthesis leads to four conclusions about monetary policy and its role in the economy, which can be summarised by stating that (Goodfriend and King, 1997: 2 and 3):

- monetary policy can have an important and persistent effect on real economic activity owing to gradual adjustments of both individual prices on the one hand and the price level on the other;
- even under conditions of costly price adjustments, there is little evidence of a long-run trade-off between real activity and inflation;
- inflation has significant welfare costs owing to its distortions of economic performance, implying that significant gains can be achieved in terms of increased transactions efficiency and reduced relative price distortions by eliminating inflation; and
- policy credibility plays a central part in understanding the effects of monetary policy.

This last conclusion is of particular importance for central bankers: monetary policy can be implemented optimally in a rules-based environment, rather than in a discretionary fashion, but should be credible in the eyes of the public. It is therefore necessary not only to consider the policy rule most suitable for this purpose (Goodfriend and King, 1997: 3), but also to consider enhancing policy credibility. The focus of this study is on inflation credibility underpinning policy credibility and inflation expectations.

As inflation, and particularly unanticipated inflation, has real costs for an economy (Snowdon and Vane, 2005: 411), it naturally follows that the policy rule adopted by the central bank should aim at bringing inflation to the lowest possible level and keeping it at that level. Goodfriend and King use the new neoclassical synthesis “... to develop a set of principles and practical guidelines for neutral monetary policy, defined as that which supports output at its potential level in an environment of stable prices” (1997: 3). After considering problems such as lags between monetary policy action and their influence on the price level, responses to commodity price shocks, any potential policy trade-off between price and output variability and the use of a short-term interest rates as policy instrument, the conclusion is not only that a monetary policy regime of inflation targets²² is preferred (Goodfriend and King, 1997: 3; see also Snowdon and Vane, 2005: 703), but also that “... a central bank should target near-zero inflation” (Goodfriend and King, 1997: 33).

The conduct of macroeconomic policies, including monetary policy, can naturally not be divorced completely from the prevailing political process in any country. Attempts are made in many countries to shield monetary policy somewhat from direct political influences, and recently the adoption of explicit anchors for monetary policy has led to considerable success in this regard. A case in point is the adoption of inflation targets as an anchor for monetary policy, a policy model also adopted by South Africa in February 2000 (South Africa, 2000).

Shielding monetary policy from the political process is particularly important under conditions where politicians are tempted “... to manipulate policy instruments so that policy outcomes are most favourable around the election period” (Snowdon and Vane, 2005: 526). One possible result is that policies could be implemented “... which are biased against future generations” (Snowdon and Vane, 2005: 526). This is particularly true for monetary policy that is not conducted independently from the government: inappropriate expansionary monetary policy in a period running up to an election will cause higher inflation after the election.

²² An inflation target as an anchor for monetary policy is discussed in Chapter 4.

During the 1970s a number of economists made reference to the *political business cycle*, the best-known of which is Nordhaus (1975). Nordhaus states that “... it is clear that a political business cycle is a significant factor in the operation of some capitalistic democratic economies” (1975: 187). Of particular importance is the finding that “... within an incumbent’s term in office there is a predictable pattern of policy, starting with relative austerity in early years and ending with the potlatch right before elections” (Nordhaus, 1975: 187). Snowdon and Vane state that “... politicians, faced with a regular election cycle, will tend to develop short time horizons” (2005: 566). Heckelman refers to this tendency as one where “... incumbent politicians have an incentive to manipulate the economy as elections draw near” (2001), although there have been limited attempts to test historically for political business cycles. This flows from the view that “... such manipulations were not possible before the advent of activist policy ushered in during the Keynesian revolution ... ” (Henckelman, 2001). Agénor and Montiel state that policymakers can introduce macroeconomic policy “... which is difficult to justify on the basis of purely economic arguments ... [but is] ... responsive to policymakers’ desire to secure their positions in office or improve the likelihood that they will be reelected” (1996: 572).

Nordhaus (1975: 188 and 189) highlights some remedies for the political business cycle and the related unemployment/inflation bias, applicable to socialist and capitalist democracies²³, that can be summarised as:

- improvement of the information available to voters, thereby enabling them to judge actions by government aimed at stimulating the political business cycle in a run-up to elections;
- non-synchronisation of electoral periods such as in the United States could reduce the amplitude of the political business cycle;
- the acceptance of price and wage controls, which will contain inflation;
- broadening the base of participation in policy-making, which will make it difficult for the government to implement a plan aimed at fostering the political business cycle; and
- entrusting economic policy to persons not directly subject to re-election results, in the same way as monetary policy is entrusted to central banks. Fiscal policy can similarly be turned

²³ According to Nordhaus, “[t]he only difference ... is that planned economies may show less fluctuations within electoral periods than unplanned economies” (1975: 188).

over to treasury officials. However, the costs and benefits of independent policy determination are difficult to consider, while it is alleged from time to time that the central bank pays more attention to the latest monetarist idea than to fundamental policy problems.

It is noteworthy that Nordhaus identifies the benefits associated with a central bank conducting monetary policy independently from the political business cycle, albeit not to the full degree of autonomy or independence associated with successful monetary policy implementation today. This approach only became generally accepted some time after the publication of the paper by Nordhaus (1975).

This review of the development of theories on monetary policy and inflation covers periods when governments elected to use direct measures (price and wage controls, also known as incomes policies) for purposes of controlling inflation even though countries were not at war²⁴. Michie states that “... if inflation began rising, the policy reaction would be to attempt to restrain inflation directly, through prices and incomes policy, rather than to allow unemployment to rise” (2006: 88) as a result for instance of stricter monetary policy associated with higher interest rates.

One example is the United States, where the government introduced an incomes policy on 15 August 1971 and maintained these controls until 30 April 1974 (Kosters, 1977: 121). Consumer price inflation in the United States initially declined by about one percentage point to a level of 3 per cent during the first 12 months after the introduction of the incomes policy (Kosters, 1977: 122). The success of the policy was, however, short-lived: the rate of inflation subsequently accelerated to a level of 11,5 per cent per annum in the eight months before price and wage controls were lifted, and to 12,2 per cent in the eight months after 30 April 1974 (Kosters, 1977: 122)²⁵.

²⁴ Galbraith advocated the use of permanent widespread price controls to contain inflation after serving as deputy head of the US Office of Price Administration during part of the World War II (Sloman, 1994: 292).

²⁵ Experience with price controls brings to mind Goodhart’s law, which states that “[c]ontrolling a symptom of a problem or only one part of the problem will not cure the problem: it will simply mean that the part that is being controlled now becomes a poor indicator of the problem” (Sloman, 1994: 753).

As often happens during a period of direct controls interfering with the functioning of the market mechanism of supply and demand, shortages were reported in the United States. The media started reporting shortages from late 1973 (e.g. some two years after the introduction of the policy) and this problem persisted in 1974 (Kosters, 1977: 188). The implication is obvious: as is the case with sound monetary policy following a period of persistent high inflation, an incomes policy is also not a painless solution to an inflation problem. In this case the cost is reflected in shortages, rather than in increases in interest rates.

The second example is the UK (see for instance Michie, 2006: 88). The UK introduced an incomes policy early in 1948 (Merrett and Monk, 1967: 65). This policy was maintained until September 1950, when it failed because the trade unions “... refused to suspend agreements which tied wage increases to the cost of living index” (Merrett and Monk, 1967: 67). Similar policies were again introduced in the UK in the 1950s, 1960s and 1970s. In their assessment of the success or otherwise of the use of these policies, Merrett and Monk state that an incomes policy “... has proved successful in modifying the rate of inflation during the short period of its operation ...” (1967: 67).

The more interesting conclusion, however, is that “[t]here is no evidence from the experience of major industrialised countries of Europe that the rate of inflation can be reduced significantly below 3 per cent per annum without a relatively large pool of unemployment ...” (Merrett and Monk, 1967: 71). This reminds of the statement by Nordhaus that “[m]any economists doubt whether the inflation/employment trade-off can be significantly improved within the traditions of a liberal mixed capitalist system” (1975: 189). Subsequent successes of industrialised countries to contain inflation by means of sound monetary policy, rather than by means of incomes policies, have shown that inflation is not inevitable. Snowdon and Vane state that “... significant costs arise when governments choose to suppress inflation, leading to distortions to the price mechanism and further significant efficiency losses” (2005: 412). Friedman and Friedman are of the view that the private economic agents regard “... the imposition of price and wage controls as a signal that inflation is heading up, not down. It has therefore led them to raise their inflation expectations rather than to lower them” (1980: 326). The implication is therefore

that sound monetary policy, rather than control measures, is advisable for the control of inflation, and particularly for containing inflation expectations. Moreover, current low inflation in developed countries is not associated with undue high unemployment levels.

The debate whether governments should adopt policy rules or should allow discretion in the application of economic policy, is an ongoing one. Monetarists prefer rules and Keynesians favour discretion (see for instance Parkin, 2003: 610, 739 to 744). Monetarists argue that the formulation and application of rules will ensure that the government provides a sound policy framework that remains free of temptation, e.g. the temptation to stimulate total output and reduce unemployment in a period running up to an election²⁶ (Sloman, 1994: 826). The application of rules also ensures that domestic private economic agents are not cushioned from market forces, which enhances efficiency in adjustments to changed circumstances (Sloman, 1994: 826 and 827). The announcement of rules by the government and their strict application also reduce inflation expectations, thereby providing an environment for high and stable economic growth.

Keynesians reject the application of rules and favour discretion because demand is subject to random exogenous shocks. As no set of rules can successfully deal with all such shocks, they argue that the adoption of a discretionary policy will deliver better results, particularly as different shocks require differences in treatment, rather than the application of a standard set of rules dealing in similar fashion with all shocks (see for instance Parkin, 2003: 740; or Sloman, 1994: 827). In addition, owing to uncertainties about “ ... the kinds of problems an economy may confront in future, new Keynesians do not support the fixed rules approach ... ” (Snowdon and Vane, 2005: 410). Keynesians favour active and discretionary government involvement in the economy to counter demand deficiencies as a result of exogenous shocks.

Literature on inflation suggests that a distinction has to be made between anticipated and unanticipated inflation, as their effects on the economy are different (see for instance Levi, 1994:

²⁶ This reminds of the Primrose prime interest rate incident in South Africa in November 1984 (described in Chapter 5), when the country used policy discretion rather than rules.

440; or *New Palgrave: A dictionary of Economics*, 1987: 833 to 835). Parkin states that “... the failure to correctly anticipate it ... [inflation] ... results in unintended consequences” (1999: 742). In considering unanticipated inflation, it might be more appropriate to refer to incorrectly anticipated inflation (or an unexpected level of inflation), as unanticipated inflation refers to a situation where the actual rate is either higher or lower than the expected rate (Levi, 1994: 440). However, as literature utilises unanticipated inflation for describing any one of these two outcomes, the same terminology is used in this study.

The main consequences of unanticipated inflation are a redistribution of income and wealth; distortions in the relative prices of goods and of services; distortions in output and employment; and unforeseen adjustments in relative wages and salaries (see for instance Parkin, 1999: 742; Samuelson and Nordhaus, 2001: 688; or Snowdon and Vane, 2005: 411). The impact is clear: unanticipated inflation imposes costs on an economy “... regardless of whether the inflation turns out to be higher or lower than anticipated” (Parkin, 1999: 743). The costs associated with unanticipated inflation reminds of the cost when governments suppress inflation by means of an incomes policy (Mishkin, 2004: 412). Samuelson and Nordhaus state that “... the reality is that inflation is usually unanticipated” (2001: 688).

Anticipated inflation occurs when actual price increases correspond with anticipated (or expected) price increases. In this regard Samuelson and Nordhaus state that “... anticipated inflation at low rates has little effect on economic efficiency or on the distribution of income or wealth. People would simply be adapting their behaviour to a changing monetary yardstick” (2001: 688). The actual cost of anticipated inflation depends on the rate of inflation (Parkin, 1999: 744). Parkin (1999: 744) is of the view that the costs are probably small at a low rate of 2 or 3 per cent per annum, a view supported by Samuelson and Nordhaus (2001: 688). Parkin (1999: 744 and 745) describes the costs of anticipated inflation as increased transactions costs because people try to avoid the consequences of inflation; increased taxation on interest earned to off-set the effects of inflation; and planning difficulties owing to uncertainties in an environment characterised by inflation.

The problems resulting from both anticipated and unanticipated inflation indicate that inflation is a serious economic problem requiring proper policy attention. The conclusion is therefore that relative price stability²⁷ is important for any economy. Whereas the definition of inflation is widely accepted, the definition of relative price stability vis-à-vis inflation seems to be somewhat problematic, as is the case with finding a modern definition for price stability. If price stability were to imply stable or constant prices in the true sense of the word, such prices are associated with price level stability today (see for instance Joint Economic Committee, 2004: 2; or Gwartney et al., 2000: 12).

Greenspan states that “... the primary role of monetary policy in the pursuit of the goal of maximum sustainable growth is to foster price stability. By this we mean establishing an environment where expected changes in the average price level are small enough and gradual enough that they do not materially enter business and household financial decisions” (1989: 5). Hansen states that “[p]rice stability is a condition that some economists describe as inflation so low that it no longer affects people's economic decisions” (2007: 1), while relative price stability is “... generally defined²⁸ as an inflation rate of between 1 per cent and 2 per cent” (2007: 1). Gwartney et al. state that “[a] working definition of price stability has emerged in the form of a consensus²⁹ that monetary policy makers should keep the inflation rate within a band of zero to 3 per cent” (2000: 12 and 13), which is probably the definition that Hansen has in mind for relative price stability. Mohr and Fourie state that “[w]hen economists talk of price stability as an objective, they refer to the objective of keeping inflation as low as possible” (2004: 62), thereby equating price stability to relative price stability. Samuelson and Nordhaus state that “... most nations seek the golden mean of stable or slowly rising prices as the best way of encouraging the price system to function efficiently” (2001: 419), and refer to this as price stability.

²⁷ Relative price stability as used in this study has the meaning of prices increasing at a low average rate, e.g. average annual price increases of between zero and two per cent or in accordance with an inflation target. It is not used to imply that the relative prices of goods and services in relation to one another should not change. Even in an environment of price stability, changes of the latter nature are still necessary to ensure the reflection of changes in relative scarcity. This matter is also discussed in section 4.1.

²⁸ Although making this statement, Hansen (2007: 1) does not provide any source to support the assertion.

²⁹ Like Hansen (2007: 1), Gwartney et al. (2000: 12 and 13) provide no source for the assertion.

Yet another approach has been adopted by the central bank of Israel. That bank mentioned in 2003 that “[t]he Consumer Price Index was down 1,5 per cent in the first nine months of the year ... [and over] ... the past twelve months (September 2002 to September 2003) the CPI posted a sharp downturn of 1,9 per cent” (Bank Leumi Le-Israel B. M. and subsidiaries, 2003: 2). This declining trend in prices was referred to as “relative price stability” (Bank Leumi Le-Israel B. M. and subsidiaries, 2003: 2).

This brief analysis leaves as possible descriptions for relative price stability an inflation rate of between 1 and 2 per cent (Hansen, 2007: 1); a less-than-specific view on a particular rate or range of inflation to be regarded as relative price stability (Greenspan, 1989: 5); or even a moderate decline in prices (Bank Leumi Le-Israel B. M. and subsidiaries, 2003: 2). In the interest of clear and easy communication with the general public on the objectives of monetary policy and the achievement of such objectives highlighted by this study, it seems imperative that central bankers should agree on:

- the standardised use of *relative price stability* rather than *price stability* in describing the objectives and achievements of monetary policy, as price stability has different meanings for different people; and
- a standardised definition or description for *relative price stability*.

Following Greenspan, a suitable definition for relative price stability in this context seems to be *price changes and expected future price movements (either up or down) at a level where they do not influence current decision-making in any way*, which is somewhat aligned to the view of Gwartney et al. when they state that monetary policy achieves price stability when “low and easily predictable rates of inflation” (2000: 11) prevail in an economy. An alternative could be to describe price increases in accordance with an inflation target as relative price stability in countries using such a monetary policy approach.

This study is aligned with the use of rules, rather than discretion, in the application of macroeconomic and monetary policies. The analytical tools developed in this study support the use of policy rules in general, and monetary policy rules in particular. The development of these

tools also shows that the application of monetary policy models based on rules should be supported by communication strategies aimed at enhancing policy credibility. Without such credibility, perceptions of inflation might differ to such a degree from actual inflation that the general public concludes that sound monetary policy brings no tangible benefits. It is therefore necessary to ascertain whether perceptions of inflation and inflation expectations remain anchored in the current official rate of inflation.

2.3 Macroeconomic theory and policy reform in developing countries

Different views of development (or schools of thought) have emerged over time, in the same way as models of macroeconomic theory evolved over time (see for instance McAleese, 2004: 5). It is therefore necessary to consider whether the application of macroeconomic policy will deliver the same social and economic results for developing and developed countries (Economist.com, [S.a.]). Justification for a different approach for developing countries will be faster eradication of poverty and accelerated improvements in *per capita* income, levels of employment, health care, life expectancy, etc.

In literature no single definition is used for developing countries (see for instance Bale et al., 2003: 305; Biology-online, [S.a.]; Samuelson and Nordhaus, 2001: 591; Soanes and Stevenson, 2004: 392; United Nations Development Programme, 2005: 214; World Trade Organization, [S.a.]; or World Wide Web Online, [S.a.]). Use of the term *developing country* is even viewed as “... both pejorative and ambiguous” (Aycan, 2002) in certain literature, as no country is not developing (Aycan, 2002). These countries show large diversity (see for instance Bale et al., 2003: 305; Borat et al., 2006: 509; or Corden, 1987: 171) and are characterised by different forms of government (see for instance Brunell, 2006; Elahi and Danopolous, 2004: 9; Harford, 2006: 200; Hogendorn, 1987: 486 to 487; Sen, 1999: 13; or Tanaiste and Harney, 2004). Bedford-Strohm uses different but very catching terminology when stating with regard to the divide between developed and developing countries that “[a]fter the lifting of the *Iron curtain* between East and West, it is the great challenge of our time, now, to lift the *Golden curtain* which separates us in the North from the people in the South” (2006: 14).

Literature mainly identifies the orthodox view of economic development on the one hand and the structuralist view of economic development³⁰ (see for instance Contreras, 1999; Agénor and Montiel, 1996: 13; or Shahzad, [S.a.]) on the other.

The orthodox view (which is sometimes called the liberalist, traditional or monetarist school) places emphasis on similarities between the requirements of developed and developing countries. According to this mindset high inflation in developing countries is caused by excessive growth in the money supply owing to large fiscal deficits. The solutions are therefore the introduction of free domestic markets; free international trade; tight monetary and fiscal policy; and limited government intervention in the economy (Agénor and Montiel, 1996: 13; Shahzad, [S.a.]). This view is closely associated with “[c]lassical or neo-classical economics ... concerned primarily with the efficient and cost effective allocation of scarce resources and with the optimal growth of those resources over time. They ... [the orthodox school] ... hold that countries develop economically via the market” (Contreras, 1999).

By contrast, the structuralist view places emphasis on “ ... the mechanism by which underdeveloped economies transform their domestic economies from a traditional subsistence agricultural base into a modern economy” (Contreras, 1999), as developing countries might be facing deficient structures that hamper severely the effectiveness of the policy prescriptions of the orthodox school. The structure and causes of poverty are therefore important when policies are considered, as “[c]onventional fiscal, monetary and industrial policies, especially in developing countries, have either completely failed or have been of limited success in combating poverty.

³⁰ In addition, Contreras (1999) identifies the linear-stages-growth model and the neo-Marxist or dependency theory as models for overcoming poverty in developing countries. Originating from the 1950s and 1960s, the linear-stages-growth model views the process of economic development “ ... as a simple way of succession of a number of stages based on the path that the now developed nations had adopted in transforming from poor agricultural to modern industrial countries” (Moloto, 2005: 34). The shortcomings of this model, e.g. the constraint of low capital formation hampering investment, are acknowledged today (Moloto, 2005: 35). The neo-Marxist theory of the 1960s and 1970s concluded that industrialised countries exploit developing countries, and particularly workers in such countries, by paying very low prices for primary exports that are re-imported by developing countries at high prices after transformation. Industrialisation could therefore hardly be a goal of developing countries, as developed countries invested only in primary production (Contreras, 1999). The main criticism of the neo-Marxist theory is the notion that developing countries are dependent on developed countries for development (Contreras, 1999).

Structural rigidities in the economy, political factors, and the inadequacy of the policies themselves have contributed to their failure to meet their objectives” (Odekon, 2006: x). The structuralist view accordingly advocates that the market mechanism cannot overcome the problems facing developing countries. Structural rigidities and problems should be addressed by means of direct intervention.

Early structuralist prescriptions for overcoming poverty advocated direct government intervention in the promotion of industrialisation; trade barriers discouraging imports and protecting domestic industry; extensive use of exchange control in an effort to boost domestic investment; and use of special dispensations (interest rate subsidies, tax rebates and direct subsidies) to stimulate domestic industry (Agénor and Montiel, 1996: 14). Modern structuralists question the short-run policy prescriptions of the orthodox approach to solve development problems. In their view the cause of inflation in developing countries is currency devaluation combined with relatively slow productivity growth in agriculture, rigidities in administered prices, and wage indexation, which can lead to stagflation (see for instance Khan, 2005: 4; or Agénor and Montiel, 1996: 15). As an alternative to orthodox prescriptions, structuralists prescribe gradualism, rather than a quick restructuring of the economy (Agénor and Montiel, 1996: 14), and support direct government intervention in economic processes and markets. A sobering concluding remark on the two approaches is that “[m]ost likely the different conditions in each country call for different anti-poverty policy approaches” (Odekon, 2006: x; see also Agénor and Montiel, 1996). This view is supported by the statement of Kose et al. that “... developing countries perhaps would need to implement sound macroeconomic and structural frameworks” (2003: 138) to minimise the risks associated with financial integration.

Current debate should focus attention not only on the golden curtain (Bedford-Strohm, 2006: 14), but also on the quickest way to ensure that it melts away (Rossouw, 2007b: 270), thereby improving the income levels of the poor. Page states that “[s]imple theory and empirical evidence indicate that poverty reduction can be achieved by accelerating economic growth and/or by changing distribution of income in favour of the poor” (2006: 512). In the reduction of poverty, a policy of redistribution naturally has an important role to play (Odekon, 2006: x).

Redistribution is the cornerstone of a policy of progressive income tax. While economic growth contributes to the eradication of poverty, it is regarded as pro-poor if the poor benefits disproportionately from it (Page, 2006: 512), essentially serving the same purpose as a progressive income tax.

Aryeetey states that “... the available evidence is noted to be fairly strong that well-functioning financial markets promote long-run economic growth” (2003: ii116), implying that a lack of well-functioning financial markets can hamper developing countries and contribute to structural problems. A central problem of the financial systems of many developing countries is imperfect information and a lack of institutional structure for risk coverage (Aryeetey and Nissanke, 2003; Dercon, 2005; Mlambo and Oshikoya, 2001), implying that risks that are insured in developed countries can often not be insured in developing countries. Financial development in developing countries is stymied by information asymmetry, costly information and high transaction costs, and can result in some forms of credit rationing (Aryeetey, 2003: ii116). Under conditions of financial market imperfections, government intervention naturally improves the allocation and spread of loanable assets and risk, as “... the assumptions underlying the optimality of the free market system in allocating resources do not exist in developing countries” (Aryeetey, 2003: ii118). The consequence is “... the need to direct attention to building macroeconomic models that account for the interconnections between macroeconomic variables such as interest rates and exchange rates and informal finance” (Aryeetey, 2003: ii145), which is hampered by accurate data about informal finance in developing countries.

Deficiencies in the financial markets of developing countries often lead to fragmented and parallel financial markets (Agénor and Montiel, 1996: 64) in foreign exchange, savings and lending (Aryeetey and Nissanke, 2003: 313). These markets “... often constitute a significant component of economic activity” (Agénor and Montiel, 1996: 64), but “... they are difficult to monitor or quantify in any meaningful manner ... [although] ... existing evidence suggests ... that in some countries the informal sector is at least as large as the official sector and may even be larger. Fragmented markets are the result of imperfect information or other inherent operational characteristics” (Aryeetey, 2003: ii116), while parallel markets are “... often illegal

but are tolerated in many countries” (Agénor and Montiel, 1996: 65). This is not only relevant for developing countries. Developed countries are also characterised by informal financial activities, often associated with illegal activities such as drug dealing, money laundering, loan sharking or the contravention of exchange control regulations³¹. Relative to the formal financial system, these activities are merely smaller in developed countries.

The orthodox school regards fragmented and parallel markets as a consequence of government interference, particularly as a result of interest rate ceilings at too low levels, rather than a structural problem that can be alleviated by the government (Aryeetey, 2003: ii115). Prasad et al. state that “[t]he empirical evidence has not established a definitive proof that financial integration has enhanced growth for developing countries” (2003: 58), although “... there may be value for developing countries to experiment with different paces and strategies in pursuing financial integration” (Prasad et al., 2003: 58). Corden (1987: 185) suggests the use of game theory for some developing countries to assess the effects of policy decisions such as devaluations. The structural school views increases in interest rate levels in developing countries as a source of cost-push inflation in the short run that lowers economic growth, and reduces the supply of credit to finance investment (Aryeetey, 2003: ii116). A related impediment identified by the structuralist view is “... the importance of non-institutional finance in the form of money lenders and indigenous bankers” (Aryeetey, 2003: ii115), whose operations will probably not be influenced in the short-run by reforms of the financial markets. Khan states that “... some have questioned the wisdom and efficiency of orthodox short-run macroeconomic policy prescriptions ... [for developing economies], ... particularly shock treatment in the form of fiscal austerity coupled with devaluation and tight monetary policy” (2005: 4). In developing countries “[a]ccording to the nonmonetarist view frequently the source of inflation is slow relative productivity growth in agriculture ... combined with ... [rigid] ... administered prices ... together

³¹ In this regard South Africa serves as a case in point. The Minister of Finance announced an exchange control and related tax amnesty on 26 February 2003 (Manuel, 2003a). In response to the amnesty, nearly 43 000 South African residents submitted amnesty applications, disclosing illegal foreign assets amounting to R45,0 billion. South Africa’s mid-year population estimate in 2004 was 46,6 million people, implying that nearly 1 out of every 1 000 South Africans had illegal assets abroad, despite the application of strict exchange control restrictions over residents since 1961. South Africa’s legal foreign assets as at 31 December 2002 were under-reported by some 7 per cent if these illegal assets are taken into consideration (Rossouw, 2006c: 14).

with wage indexation” (Khan, 2005: 4). Structural reform should therefore precede any market-oriented monetary reform to prevent accelerating inflation. For purposes of monetary policy implementation, a particular challenge facing authorities in developing countries is the development of an understanding of the degree of difference between the functioning of the transmission mechanism of monetary policy in the formal and informal markets. Although an analysis of these differences is outside the scope of this study, it suffices to say that even developed countries sometimes lack insight into the functioning of the transmission mechanism in their economies.

Literature provides numerous reasons for less-than-satisfactory results with policies aimed at the reduction of poverty. Sahn and Younger (2004: i87) mention half-hearted reforms by governments, exogenous shocks such as droughts and changes in terms of trade, institutional constraints, and deficiencies in improvements in health and education services. Mlambo and Oshikoya state that “[l]arge and external shocks also explain Africa’s high degree of macroeconomic variability, especially the volatility of the terms of trade that is reflected in the volatility of real GDP growth and the real exchange rate” (2001: 43). The literature also stresses the importance of increased investment, a transfer of resources from savers to investors, political stability, rising household incomes reducing poverty, improved governance, and rising fiscal revenues permitting improved public investments that bring the poor into the economic mainstream (see for instance Mlambo and Oshikoya, 2001: 40 to 42; Page, 2006: 538; Prasad et al., 2003: 58; or Servén, 1998: 24) as conditions favouring sustained development. As is the case with the debate between monetarists and Keynesians (in the wider meaning of these words), Agénor and Montiel state in respect of the orthodox and structuralist debate that “ ... macroeconomic reality in the developing world indeed combines features of both” (1996: 15).

In terms of similarities and differences between developing and developed countries, South Africa finds itself in a unique dichotomy as the country has strong elements of both types of countries. Since democratic elections in 1994, South Africa has applied a mix of policies that places it squarely in the realm of the orthodox school of development. An analysis of some of the results of this policy is shown in Table 2.1.

The analysis in Table 2.1 shows that South Africa has achieved considerable success in improving stability and output with the application of orthodox policies. The one lagging area is clearly employment creation. As orthodox policies did not make inroads into the country's employment problem, it comes as no surprise that literature offers alternatives, based on the principles of the structural school, to alleviate this problem. Michie (2006) and Epstein (2002) offer structural solutions based on the alternative use of monetary policy to overcome this failure of orthodox policy measures. Michie (2006: 96) favours lower interest rates to foster productivity-enhancing investment that will increase supply (thereby limiting any possible inflationary effects of such lower rates) and encourage employment. If inflationary pressures develop in the period before the economy starts reaping the benefits of improved productivity, the government can enhance competition; revert to direct controls such as an incomes policy; reduce administered prices; or introduce tax cuts on products subject to price increases to keep nominal prices stable (Michie, 2006: 97).

Table 2.1 South African economic indicators for selected years

	1994	1998	2002	2005
Budget deficit/GDP	- 4,8	- 3,3	- 0,7	- 0,5
GDP growth	3,2	0,5	3,7	5,1
Inflation	9,0	6,9	9,2	4,7
Unemployment*	20,0	25,2	29,7	26,5
Unemployment**	31,5	37,5	40,9	40,5

* Narrow definition

** Expanded definition

Sources: SA Reserve Bank *Website*; SA Institute of Race Relations, 2006

Epstein (2002) suggests that the central bank should replace the inflation-targeting monetary policy framework with the targeting of employment growth³², subject to an inflation constraint. The employment target should be supported by stricter exchange control to insulate domestic macroeconomic policy from global pressures and to ensure the channelling of credit to employment generation and socially productive activities (Epstein, 2002: 1 and 2), but should be subject to an overriding inflation constraint. The concern about an inflation constraint of 6 per cent, as seems to be suggested (Epstein, 2002), is that no permanent reduction in unemployment might be achieved before the constraint is reached, given the difference between the short-run and the long-run Phillips curves and South Africa's problem of structural unemployment.

It can logically be argued that Michie (2006) favours a marginal increase in the role of the government in the economy, while Epstein (2002) favours a larger degree of intervention, extending to the goals and functioning of the central bank. This is not surprising, seeing that “... the evidence suggests that ... [macroeconomic] ... reforms have yielded some benefits for Africa's poor ... [but] ... the achievements on growth and poverty reduction have been disappointing” (Sahn and Younger, 2004: i87). While it is necessary to keep in mind that “... macroeconomic adjustment programmes have not been directly deleterious to the poor; in fact, they have often helped somewhat” (Sahn and Younger, 2004: i67), the question remains whether structural alternatives could not have achieved better results in South Africa, particularly in respect of a reduction in unemployment, therefore contributing to the goal of a quicker melting of the golden curtain between North and South.

Smithin (2002: 22 and 23) makes an interesting case for lower real interest rates to reduce inflation in closed economies, that can also be applied by developing countries. Smithin states that if “... there is a productivity improvement as a result of the increased growth, which in turn is greater than that of any increase in real wages, then the lower real interest rates will not be inflationary. This is perhaps a surprising result when looked at from a traditional point of view.

³² Epstein (2002) gives no indication of the tools that a central bank targeting employment growth should employ to overcome a problem of structural unemployment, i.e. “... significant mismatches between applicants and openings, such as to require costly retraining and/or relocation” (Snowdon and Vane, 2005: 493). Michie touches on this impediment, stating that “... a better-trained workforce is a classic public good” (2006: 103).

In this case, a cheap money policy leads to higher growth with lower inflation” (2002: 23). Although Smithin’s proposals share some elements with Epstein (2002) and Michie (2006), central banks “... should follow a real interest rate rule, rather than a monetary growth rule or an inflation rate rule” (Smithin, 2002: 27). Smithin’s proposal of a real interest rate rule seems to have merit in avoiding excessive swings in nominal interest rates (except when driven by similar swings in inflation) which in themselves introduce instability in the economy, as has happened in South Africa in the 1980s. The further attraction of Smithin’s proposal is the relative ease with which a real interest rate target as an anchor for monetary policy can be communicated. As is shown by this study, central banks face important challenges in enhancing policy credibility by means of improved communication, and Smithin’s proposal has considerable advantages from a communication perspective.

From this section, the aim for developing countries is clear – the golden curtain should melt away through the eradication of poverty in developing countries. Literature, however, suggests different remedies for the achievement of this goal. Epstein (2002) favours increased direct government intervention in the economy and increased control of economic processes, and probably represents the extreme structural view. The Austrian School of economic thought which advocates minimal government interference in any economy, discussed earlier in this chapter, can probably be regarded as the extreme orthodox view. A moderate view is put forward by Mlambo and Oshikoya (2001), who state that investors in developing countries lose faith in the macroeconomic reform process owing to time lags between policy implementation and policy outcomes. This lag “... is rooted in the government’s discretionary decision-making authority, and can be narrowed where the government is bound by fixed rules announced in advance” (Mlambo and Oshikoya, 2001: 43). The latter approach is supported in this study, i.e. the point of departure is that rules give better policy results than discretion, but rules are not the only answer to eliminating unemployment, as is evident from the South African experience. This study also focuses on the fact that imperfect information (i.e. about the credibility of inflation figures) can result in sub-optimal decision-making and allocation of resources by governments, central banks and private economic agents.

The next section summarises the literature on the international experience with the measurement of inflation perceptions, i.e. views of historic price movements and the methodology used to sample such perceptions in each country.

2.4 International experience with the measurement of inflation perceptions

Central banks measuring inflation perceptions discussed in this section are the Swedish Riksbank (the central bank of Sweden), the European Central Bank (ECB), the Reserve Bank of New Zealand and the Federal Reserve Bank of Cleveland, while the methodology used for ensuring credibility in the calculation of the rate of inflation in Mexico is also discussed³³.

Central banks do not have direct control over inflation expectations, but can influence it over time by means of consistent sound monetary policy. If the central bank does not succeed in containing inflation expectations and expectations are higher than the target, the implication, as is explained by the Swedish Riksbank, will be “... that the public does not believe that the Riksbank will manage to keep inflation in check. The Riksbank may then need to raise the repo rate more rapidly than is reflected in expectations of future monetary policy” (Sveriges Riksbank [S.a.]; also see Palmqvist and Stromberg, 2004).

Brachinger refers to a “... contradiction between the official line ... [of published inflation] ... and the consumer perception ... [of inflation as] ... the individual customer really wants to know ... the extent to which inflation is affecting her everyday purchases” (2005: 1). He adds that the consumer “... will perceive inflation the more powerfully the more often she buys goods which have become significantly more expensive. In contrast, she will barely notice a reduction in the price of goods she rarely buys, or of goods which she acquires without explicitly purchasing them and whose price is deducted every month from her bank account ... ” (Brachinger, 2005: 1). In view of the observations and findings about differences in inflation perceptions of different genders highlighted in this study, it is noteworthy that Brachinger refers to the consumer as

³³ Literature revealed no further countries or jurisdictions measuring inflation perceptions by 2005 (see for instance Rossouw and Joubert, 2005a).

female – females generally seem to perceive historic inflation to be at a higher level than male consumers.

The Swedish Riksbank has surveyed “ ... households’ perspectives on current and future price developments” (Palmqvist and Stromberg, 2004) since 1978. Respondents are requested to indicate whether they perceive prices to be the same, higher or lower than a year before, and to provide a numerical estimate of their perceived inflation. The sample used in Sweden for measuring inflation perceptions is stratified for different income groups, education levels and gender. In respect of responses by different gender groups, Jonung concluded that “ ... with respect to the perceived rate ... [of inflation] ... , the major difference ... [of 1,7 percentage points] ... was found between men and women ... This pattern – which holds throughout all groupings of men and women according to age, household income, number of children and place of living – is most easily explained by a larger rise in food prices than in the consumer price level ... As women are responsible for the major share of the food purchases within Swedish households, they are more exposed to movements in food prices than men. Consequently, the inflation rates perceived by women should be influenced more strongly by food prices than the rates perceived by men. The difference between men and women apparently indicates that perceived rates are influenced by individual expenditure patterns” (Jonung, 1981: 968).

The survey on perceptions about current inflation provides additional insight into inflation expectations for the Riksbank as respondents who perceive inflation to have been higher over the past 12 months than the actual figure, also report higher than average inflation expectations for the next 12 months (Palmqvist and Stromberg, 2004). The Riksbank publishes the average perception about current inflation, as well as an analysis of the survey results according to, *inter alia*, the gender, marital status, annual income, training and education, and age of respondents.

The ECB uses surveys of European consumers by the European Commission (EC) to measure and report on changes in perceptions of the accuracy of current inflation data (European Central Bank, 2005: 30). In this regard, the EC relies on surveys undertaken by national central banks comprising the European Monetary System. Bechtold and Linz (2005: 8) state that the ECB uses

monthly surveys of the EC which requests respondents to indicate, *inter alia*, their perceptions of changes in consumer prices over the preceding twelve months. In the European Union public perceptions that prices increase at a rate higher than reported by the historic inflation rate are normally a result of “ ... personal impressions that very often refer to specific products or classes of goods and services ... [purchased] ... ” (Del Giovane and Sabbatini, 2005: 4).

Issing (2006: 211) states that problems with perceived inflation in the European Union have been exacerbated since January 2002. In his view this is caused by the fact that consumers in countries of the Euro zone have the perception that prices have increased considerably from the introduction of the single currency on 1 January 2002 (Issing, 2006: 213), while the official inflation statistics show only a very limited increase in inflation owing to the introduction of the euro (Issing, 2006: 213). While the official rate of inflation in a unified Europa for 2002 was 2,1 per cent, the euro caused a rise in prices of not more than 0,3 per cent in that year (Issing, 2006: 214).

Issing (2006: 214) provides a number of reasons for this increase in perceived inflation from 1 January 2002. These reasons include relatively sharp increases in the prices of goods and services consumed by a broad spectrum of the population early in 2002 after (but unrelated to) the introduction of the single currency; certain service industries used the conversion to the single currency in January 2002 to increase their prices; some consumers still used historic prices at the time of conversion to the single currency in January 2002 as their reference for price levels, rather than to allow for moderate annual inflation since January 2002; and price increases are generally more strongly observed by consumers than price declines (Issing, 2006: 214). The observation of Issing about the effect of sharp price increases in goods and services consumed over a broad spectrum reminds of the finding of Jonung (1981: 968) highlighted earlier.

The ECB states that the survey by the EC is conducted at a national level on a monthly basis and covers approximately 26 000 participants (European Central Bank, 2002: 18), and provides “ ... qualitative information on the perceptions of the directional change in inflation over the last twelve months” (European Central Bank, 2005: 30). This description of the survey to calculate

inflation perceptions differs from the statement by Bechtold and Linz that “[t]he European Commission conducts monthly consumer surveys about the business environment in the 25 EU member states. Nearly 33 000 people are interviewed, 20 800 of these in countries of the Euro zone. Respondents are asked for their personal and general assessment of the economy” (2005: 8). This matter was accordingly raised with the EC, and confirmation was received that sample sizes depend on the country or the economic area considered. However, “[f]or the euro area there are a total of about 21 000 respondents to the surveys” (Cigan, 2006).

In their current format, the questions on inflation perceptions were “... introduced in May 2003. Before ... [i.e. going as far back as 1985] ... instead of asking about consumer prices, the EC asked about the cost of living” (European Central Bank, 2003: 23). Respondents are currently asked to indicate “[h]ow ... [they] ... think that consumer prices have developed over the last twelve months” (Bechtold and Linz, 2005: 5) and are requested to select an answer from one of six options on price changes, i.e. prices have risen a lot (PP); stayed about the same (M); risen moderately (P); fallen (MM); risen slightly (E); or don’t know (N) (Bechtold and Linz, 2005: 8).

Based on a percentage distribution of answers, a qualitative indicator is calculated which represents perceived inflation (Bechtold and Linz, 2005: 8). In the calculation of the indicator, the responses of respondents reporting perceptions of constant or falling prices are deducted from assessments of rising prices. The measured score is calculated as $(PP + 0,5 \times P) - (0,5 \times M + MM)$ according to Bechtold and Linz (2005: 8). In reading the score, “[t]he distribution of the selected options is hence expressed as an aggregated balance indicating the difference between positive assessments (prices have risen) and negative assessments (prices are the same/have fallen). The higher the computed score, the greater perceived inflation is deemed to be. The maximum balance of + 100 would be obtained if everyone interviewed chose option 1 (consumer prices have risen a lot). A value of -100 is obtained if everyone interviewed opts for answer 5 ... ” (Bechtold and Linz, 2005: 8).

The Reserve Bank of New Zealand’s quarterly questionnaire on inflation expectations included a question on perceptions about the inflation rate since December 1987, but reporting on recorded

perceptions was improved in 1995. The bank's *J5 Marketscope Survey – Expectations of inflation*, currently distributed for completion on behalf of the bank by ACNielsen market research, includes the question “Based on your own opinions and what you've seen and heard, what do you think the inflation figure is now?” (Reserve Bank of New Zealand, 2005). This question is included in an effort to measure the prevailing perceptions of the current rate of inflation in New Zealand (Howard, 2005). The Reserve Bank of New Zealand publishes the mean and median of the perceptions reported by the respondents (Reserve Bank of New Zealand, 2005). This highlights deviations between the perceptions of respondents and the current rate of inflation.

In New Zealand the central bank has also developed an inflation calculator. The inflation calculator is a resource that enables members of the public to calculate inflation-adjusted figures over any period of time from the first quarter of 1919 (Howard and Wright, 2003: 66). The calculator is a tool that can be used to compare the purchasing power of money over time, but cannot make any adjustments to reflect quality improvements (Howard and Wright, 2003: 66 and 69). The calculator can also be used to estimate changes in the general price level and in the purchasing power of a sum of money over a specific period of time. Use of the calculator highlights the inflation pressures that developed in New Zealand during the latter half of the previous century (Howard and Wright, 2003: 70). The calculator can, however, not be regarded as an instrument for measuring inflation perceptions.

The Federal Reserve Bank of Cleveland used its FRBC/OSU inflation psychology survey to measure inflation perceptions with the assistance of the Ohio State University. This survey focused on the measurement of both inflation expectations and the public's perceptions about historic inflation figures. Respondents were also asked a question about their familiarity with the CPI and changes in the CPI as a measure of inflation (Bryan and Ventaku, 2001b: 1). The bank conducted the survey monthly until April 2002. Surveys were discontinued as the bank “piggy-backed” on a poll produced by the Ohio State University on the opinions of Ohioans for the *Columbus Dispatch* newspaper. When the newspaper decided not to renew the research contract with the University, the bank was left without a survey (Bryan, 2006). For purposes of

completing the survey, more than 400 households were selected randomly as respondents. In addition to the other questions in the survey, four questions on inflation perceptions and expectations were included in the survey from August 1998, with the aim of measuring inflation perceptions. Respondents were requested to indicate (i) whether they have heard of the CPI before; (ii) whether they think prices have stayed the same or moved up or down over the past 12 months; (iii) their perception of the movement in prices over the past 12 months; and (iv) their expectations of price movements over the next 12 months (Bryan and Ventaku, 2001b: 1).

The answers to the second and third questions were used as an indication of perceptions about inflation as measured by the variation between the average perceived inflation rate and the official rate of inflation. Higher variations showed a lack of credibility in the rate, whereas smaller variations were an indication of increased credibility (Bryan and Ventaku, 2001b: 2).

The survey of the bank and the University recorded respondents' perceptions of price changes over the preceding 12 months and their inflation expectations for the following 12 months. The survey results had shown that respondents' perceptions of historic and expectations for future inflation were related to their demographic characteristics. Respondents with "... high incomes perceive and anticipate much less inflation than people with low incomes, married people less than singles, whites less than nonwhites, and middle-aged people less than young people ... [and] ... men and women hold very different views on the rate at which prices are changing" (Bryan and Ventaku, 2001b: 1). The last observation concurs with the observations by Jonung (1981: 968) and Brachinger (2005: 1) about differences in perceived inflation between genders.

Between the introduction of the survey, in August 1998, and November 2001, respondents reported on average a perception of prices rising at about 6 per cent over the previous 12 months, or more than twice the rise of 2,7 per cent recorded by the CPI over the same period. In addition, however, "... the average inflation perceived by the nearly 8 500 men who answered our survey was 4,6 percent. While this response is higher than the official CPI inflation estimate, it pales in comparison to the 6,9 percent inflation perceived by the roughly 11 500 women who took our survey" (Bryan and Ventaku, 2001b: 1). In an analysis of the reasons for such a large

discrepancy between the perceptions of the two genders, even after adjustments between the genders to account for observable differences (e.g. in terms of education levels, income and age), women still perceived historic inflation as 1,9 percentage points higher than men (Bryan and Ventaku, 2001b: 1).

In their analysis of the reasons for this divergence between male and female respondents, Bryan and Ventaku conclude that “ ... all we can say with any confidence is that it does not appear that women have a higher perception of inflation than men because of the things they buy, the frequency of their shopping, or their knowledge of officially reported statistics. None of these factors appears to be large enough to account for the differences between men and women that we observe ... [but the answer to this question might hold] ... the key to understanding how survey data can be used to measure in the public’s inflation expectations” (2001b: 4). This conclusion of Bryan and Ventaku (2001b) that the differences in inflation perceptions between genders cannot be explained, differs considerably from the conclusions of Jonung (1981: 968) and Brachinger (2005: 1) in respect of Sweden.

Whereas the above-mentioned banks and institutions measure inflation perceptions, Mexico focuses on the confirmation of the technical accuracy of the measurement of inflation figures. The calculation of Mexico’s INPC (*Indice Nacional de Precios al Consumidor*), the index used to calculate the rate of increase in consumer prices, obtained the international ISO 9002 certification in December 2000, followed in May 2001 by the ISO 9001 certification (Banco de Mexico, [S.a.]). ISO 9000 and its subsections are a series of standards used for quality control of products and services. ISO certification was therefore preceded by technical improvements to the composition of the index and the methodology followed for calculating inflation to ensure a more accurate indication of price increases. Improvements included:

- (i) the documentation of procedures and applications used to calculate the inflation rate in an effort to prevent inconsistencies and errors;
- (ii) increased efficiency in the calculation of changes in the INPC to measure inflation more accurately; and
- (iii) the establishment of criteria to detect deviations from the prescribed process.

Although ISO certification ensures the measurement of Mexico's rate of inflation according to predetermined technical procedures and measurement instruments, it cannot pronounce on the degree of accuracy with which the inflation figures reflect actual price increases in the economy. It can therefore not be regarded in any way as a reflection of inflation perceptions (see for instance Rossouw, 2003a).

A review of available literature by 2005 did not reveal any further examples of countries (other than countries comprising the EU) or jurisdictions, other than those discussed in this section, measuring the perceptions of the public about historic inflation figures. Accordingly, the salient features of measuring inflation perceptions in Sweden, New Zealand, the European Union and by the Federal Reserve Bank of Cleveland are summarised in Table 2.2, while the approach of Mexico is disregarded for this purpose.

This comparison of the salient features of the approaches used in different countries and jurisdictions to measure perceptions about historic inflation rates, shows that their approaches differ considerably. A similar conclusion is reached in Chapter 3 of this study, i.e. calculated rates of inflation should not be compared between countries without the necessary circumspect, as country-specific issues might distort such comparisons. As is the case with the measurement of the CPI, the methodology used for the ascertaining inflation perceptions differs considerably between countries and jurisdictions undertaking such measurement.

From the salient features highlighted in this comparison, it is concluded that a broad research project measuring and reporting inflation perceptions for a country or region with any degree of confidence should provide for the separate reporting of the inflation perceptions of:

- male and female respondents, also to highlight findings corresponding either with the conclusions of Bryan and Ventaku (2001b) on the one hand, or that of Brachinger (2005) and Jonung (1981) on the other; and
- different population groups in view of the remark by Bryan and Ventaku (2001b) that whites perceive and anticipate much less inflation than non-whites, although they provide no definition or description of their use of the term *non-white*.

Table 2.2 Comparison of measures to assess inflation perceptions

	Cleveland	European Union	New Zealand	Sweden
Frequency of samples	Monthly*	Monthly	Quarterly	Monthly
Sample size	421**	21 000	1 000	2 100
Anonymity in sampling	Y	Y	Y	Y
Distinction between perceptions of genders	Y	N	N*****	Y
Measure perception of historic inflation rate	Y	Y	Y	Y
Calculate and publish a confidence interval	Y***	N****	Y*****	N

* The survey was conducted monthly from August 1998 to April 2002.

** The sample size varied a little, but averaged 421 respondents per month.

*** The Federal Reserve Bank of Cleveland did not calculate or publish a confidence indicator. However, based on information obtained from the bank (Bryan, 2006), a confidence interval could be calculated. The mean of the perceptions on inflation for the full sample was 5,8 per cent, with a standard deviation of 10,2 for the average sample size of 421. Using the formula $\bar{x} - 1,645 \frac{\sigma_x}{\sqrt{n}} \leq \mu_x \leq \bar{x} + 1,645 \frac{\sigma_x}{\sqrt{n}}$, where \bar{x} = sample mean, σ = population standard deviation, n = sample size and μ = mean value, this implies a confidence level of 90 per cent for the population.

**** Confidence interval depends on individual sampling procedure, which differs across countries in the European area (Cigan, 2006).

***** No distinction is made in terms of the measurement of perceptions according to gender in the survey process, but inflation perceptions are reported for various demographic groups, including gender (Campbell, 2006).

***** Confidence interval calculated but not published (Campbell, 2006).

Sources: Brachinger, 2005; Bryan, 2006; Bryan and Ventaku, 2001b; Campbell, 2006; Cigan, 2006; Jonung, 1981; Ribe, 2006

2.5 Conclusions

A review of the literature on the development of theories on monetary policy and inflation shows that Keynes introduced an important break from earlier economic theories during the Great Depression when the economy failed to achieve full employment through flexible adjustments in prices and wages. Keynes advocated an increased role for the government in attempts to restore full employment equilibrium in the economy. To this end he would not have been against increased taxes as a means to improve income distribution in the economy. The Keynesian view remained largely unchallenged until the emergence of the monetarists, lead by Friedman.

Modifications of the Keynesian and monetarist views through successive schools of thought still dominate macroeconomic debate, with a continuing debate on the use of either rules (the monetarist view) or discretion (the Keynesian view) in achieving the same ultimate economic goal: sustained full employment output. By means of a conclusion, the statement of Samuelson and Nordhaus that “[t]he key to macroeconomic wisdom is to combine understanding of the different theories with knowledge of when and where to apply them” (2001: 481), seems appropriate.

After the development of sustained inflationary pressures in the 1960s and 1970s, containing inflation seemed to be an insurmountable problem, with countries such as the United States and the UK at times using incomes policies in their efforts to contain price increases. Inflation was only brought under control after the introduction of sustained sound monetary policy, and this remains a precondition for controlling inflation.

At this point, it is necessary to make a distinction between anticipated inflation and unanticipated inflation. While the economic costs of anticipated inflation depend on the rate of inflation, the main consequences of unanticipated inflation are a redistribution of income and wealth; distortions in the relative prices of goods and services; distortions in output and employment; and unforeseen adjustments in relative wages and salaries. As inflation is in reality often

unanticipated, thereby leading to unforeseen costs in an economy, relative price stability should be the goal for monetary policy. In the interest of easier communication with the general public on the objectives of monetary policy, it seems imperative that central bankers should agree on:

- the standardised use of *relative price stability* rather than *price stability* in describing the objectives and achievements of monetary policy, as the latter has different meanings for different people; and
- a standardised definition or description for *relative price stability*.

Taking cognisance of the political business cycle (Nordhaus, 1975), this study favours macroeconomic and monetary policy rules, rather than the use of discretionary policy. This study highlights the development of tools that can be used to enhance the credibility of monetary policy results based on rules. Without such credibility (which should be supported by efficient communication), the general public might conclude that sound monetary policy brings only pain without any tangible benefits.

In an analysis of problems facing developing countries and the challenge of enhancing the melting of the golden curtain between the North and the South, no one-size-fits-all solution emerges. Imperfect information in developing countries can exacerbate poverty owing to sub-optimal decision-making and allocation of reserves. The emphasis that this study places on the importance of communication by central banks is therefore equally applicable to developing and developed countries.

A review of the international experience with the measurement of inflation perceptions shows the use of different approaches in various countries and jurisdictions. The measurement of perceptions cannot be compared between these countries and regions as a result of these different approaches. The ECB measures inflation perceptions as a quantitative indicator, while the Swedish Riksbank, the central bank of a country that might join a unified Europe in the future, measures perceptions about changes in the current rate of inflation. The Reserve Bank of New Zealand reports the mean and median inflation perceptions of respondents. The Federal Reserve Bank of Cleveland measured and reported until 2002 the variation between the average perceived

inflation and the official rate of inflation. No single benchmark (or international best practice) for the measurement of the credibility of inflation figures is in use, despite long periods of inflationary problems in many countries. This study accordingly combines various elements of international approaches in the calculation of inflation credibility barometers, which can be used to measure and report perceptions about the credibility of inflation.