



Inflation targeting in South Africa

by E J van der Merwe

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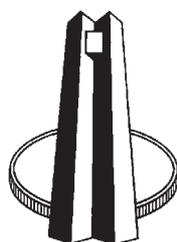
South African Reserve Bank

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by E J van der Merwe¹

1. Introduction

Economists generally agree that monetary policy should be primarily concerned with the pursuit of price stability. However, they still differ on how this objective can be achieved most effectively. This debate remains unresolved, but a growing number of countries have adopted inflation targeting as their monetary policy framework. In 1990 New Zealand was the first country to implement this strategy. It was soon followed by a number of other industrialised and emerging-market economies, including Australia, Brazil, Canada, Chile, Mexico, Sweden and the United Kingdom.

1 Chief Economist, South African Reserve Bank. The author is grateful for the valuable comments received from Dr J P van den Heever and Mr B L de Jager of the Research Department of the South African Reserve Bank.

In February 2000 it was announced that formal inflation targeting would also be adopted in South Africa as the monetary policy framework. Before this announcement “informal inflation targeting” was already applied by the South African Reserve Bank. Considerable emphasis was placed on the attainment of price stability, but the time period over which this would be achieved was not specified. At first the framework also differed from formal inflation targeting because an intermediate target, the growth in money supply, anchored monetary policy decisions. Later, towards the end of the 1990s, the Reserve Bank moved to “eclectic” or “pragmatic” inflation targeting. In this framework, developments in the monetary aggregates were still regarded as vital elements in the inflation process, but the Bank closely monitored developments in other financial and real indicators in reaching a decision on the appropriate level of short-term interest rates.

2. Rationale for adopting inflation targeting

Considerable success was achieved with informal inflation targeting in bringing the inflation rate down to lower levels. After inflation in the consumer price index had generally fluctuated around a level of about 15 per cent in the late 1980s and the beginning of the 1990s, it moved below double digits in December 1992 and declined to an average annual rate of 5,2 per cent in 1999.

Why did the authorities then decide to change to a formal inflation-targeting framework? Basically, four reasons can be given for this decision. Firstly, the system of informal inflation targeting at times created uncertainties among the public about the monetary policy stance adopted by the authorities. For example, the growth in money supply and bank credit extension in the 1990s was above the guidelines of the authorities for a considerable period. In these circumstances the public expected an increase in short-term interest rates. However, in analysing the situation the authorities realised that the high growth in the monetary aggregates was mainly due to structural changes in the economy resulting to a large extent from the liberalisation of the financial system. Contrary to general expectations they accordingly did not apply more stringent monetary policy measures, which were difficult for the general public to understand. Intermediate objectives fall away with inflation targeting and policy becomes more transparent. Policy changes depend on expected developments in inflation.

Secondly, inflation targeting improves the co-ordination between monetary policy and other economic policies provided that the target is consistent with other objectives. This better co-ordination in an inflation-targeting framework, compared with other monetary policy frameworks, can be achieved by the structured decision-making process of this

framework. Inflation targeting is a formalised approach defining precisely the co-ordinated effort needed to contain inflation in pursuit of the broader economic objectives of sustainable high economic growth and employment creation.

Thirdly, inflation targeting serves to discipline monetary policy and increase the central bank's accountability. Clear targets are set which the central bank has to meet. If the actual inflation rate deviates from these targets, the central bank has to explain what went wrong. This disciplines the central bank and leads to a better understanding on the part of the public why monetary policy decisions are made.

Finally, the application of inflation targeting affects inflationary expectations, which should facilitate a reduction in inflation. If inflation targets are perceived to be credible, they form the basis for future price and wage setting. Inflation targets, in theory, should therefore influence the increase in the operational cost of enterprises as well as their price setting.

3. Inflation-targeting regimes

According to Mishkin (July 2001:1), "inflation targeting is a recent monetary policy strategy that encompasses five main elements:

- the public announcement of medium-term numerical targets for inflation;
- an institutional commitment to price stability as the primary goal of monetary policy, to which other goals are subordinated;
- an information inclusive strategy in which many variables, and not just monetary aggregates or the exchange rate, are used for deciding the setting of policy instruments;
- increased transparency of the monetary policy strategy through communication with the public and markets about the plans, objectives, and decisions of the monetary authorities; and
- increased accountability of the central bank for attaining its inflation objectives".

Inflation targeting therefore entails more than the announcement of a numerical target over a specific time horizon.

In a recent paper by Carare and Stone (2003) a broader definition of inflation targeting is provided. Three inflation-targeting regimes are distinguished: Full-fledged inflation targeting is defined in accordance with the definition of inflation targeting by Mishkin. In addition, "eclectic inflation targeting" and "inflation targeting lite" are also regarded as inflation-targeting regimes.

Eclectic inflation-targeting countries are described as countries that "have so much credibility that they can maintain low and stable inflation without full transparency and accountability with respect to an inflation target. Their record of low and stable inflation and high degree of financial stability affords them the flexibility to pursue the objective of output stabilisation, as well as price stability" (Carare and Stone, 2003:3).

Inflation targeting lite countries "announce a broad inflation objective but owing to relatively low credibility are not able to maintain inflation as the foremost policy objective" (Carare and Stone, 2003:3). They differ considerably in stating their objectives in the operation of monetary policy, and are normally prone to economic shocks, financial instability and a weak institutional framework.

According to this classification, South Africa is regarded to be a full-fledged inflation targeter and in the rest of this paper the discussion is restricted to this type of inflation-

targeting regime. Carare and Stone distinguish seven industrial and eleven emerging-market countries which practice this regime². Although all these countries are regarded as full-fledged inflation targeters and they have some commonalities, there are also many differences in target design and operation features among them.

2 The countries are Australia, Brazil, Canada, Chile, Columbia, Czech Republic, Hungary, Iceland, Israel, Korea, Mexico, New Zealand, Norway, Poland, South Africa, Sweden, Thailand and the United Kingdom.

4. The implementation of inflation targeting

The differences between the inflation targeters depend to a large extent on the way in which inflation targeting is implemented. In the implementation of inflation targeting, decisions have to be made on the following matters:

- Who sets the target?
- How will the target variable be defined?
- How will the target be set?
- How will monetary policy decisions be made?
- How transparent will monetary policy be and how accountable is the central bank?

4.1 The determination and announcement of the target

The determination and announcement of the inflation target differ considerably in the countries applying this monetary policy framework. In countries such as Spain, Sweden, Mexico and Poland the inflation target is set and announced by the central bank. In countries such as Brazil, Israel, Korea, Peru and Thailand it is set by government in consultation with the central bank. In some others like Australia, Canada, Columbia and New Zealand the target is set jointly by government and the central bank. As far as could be determined, it is only in the United Kingdom that the target is set only by government.

The way the inflation target is determined depends on the autonomy of the central bank. South Africa is one of a few countries in which the independence of the central bank has been determined in the Constitution of the country. The governments of most countries have preferred to rather spell out the independence of their central banks through an ordinary Act of Parliament.

The Constitution Act of 1996 (Act No 8) as well as the South African Reserve Bank Act of 1989 (Act No 90) determine the primary goal of the Reserve Bank. In section 224 of the Constitution and section 3 of the Reserve Bank Act it is stated that the primary objective of the Bank is to protect the value of the currency of the Republic in the interest of balanced and sustainable economic growth. Section 224(2) of the Constitution further determines that the Reserve Bank, in pursuit of its primary objective, must perform its functions independently and without fear, favour or prejudice. Regular consultation must, however, take place between the Minister of Finance and the Reserve Bank. This duty to consult should be regarded as a procedural safeguard of the law. The executive management of the Reserve Bank nevertheless remains the primary organ responsible for the achievement of the Bank's primary objective.

The institutional framework in South Africa allows the Reserve Bank a great degree of autonomy in its operations. The Reserve Bank's functional independence in the determination of monetary policy is clearly stated in sections 10 and 35 of the Reserve Bank Act. Section 35 empowers the Board of Directors of the Bank to make rules "for the good government of the Bank and the conduct of its business". In section 10 the powers and duties of the central bank are spelt out in great detail. Most of the functions described in this section are the functions that one would expect the central bank to perform. Section 10(2) also clearly states that "the rates at which the Bank will discount or rediscount the various classes of bills, promissory notes and other securities shall be

determined and announced by the Bank from time to time". This gives the Bank the right to determine the official interest rate, or the repurchase rate.

Although the primary goal of the Reserve Bank is therefore set by government, legislation provides for instrument independence. In accordance with this legal basis the inflation target is determined by government in consultation with the Reserve Bank, but the instruments that need to be applied to achieve this target are left to the discretion of the Bank. The Minister of Finance announces the level of the inflation target. To facilitate this process a Technical Committee on Inflation Targeting was established. This committee consists of officials of the National Treasury and the South African Reserve Bank.

This approach has the advantage that it allows for the co-ordination of monetary and other policy measures. Government can determine the pace of disinflation consistent with its other objectives of sustainable high economic growth, employment creation and a more equal distribution of wealth. At the same time the instrument independence insulates the Reserve Bank from political pressures in the pursuance of its objective of price stability.

4.2 The definition of the target variable

In all inflation-targeting countries the target has been specified in terms of the consumer price index, or some variant thereof. There are, however, differences in the way that inflation is measured. Preferably the index should include a range of products fully reflecting the domestic cost of living and should be generally accepted by the public. The calculation of this index must be accurate and timely. Many countries have opted for a "core" consumer price index, which excludes prices affected by exogenous shocks over which the central bank has no direct control, the first-round effects of indirect tax changes and the first-round effects of interest rate changes.

Basically there are three measures of consumer price inflation in South Africa: the headline consumer price index, the core consumer price index and the overall index excluding the effects of changes in mortgage costs (the CPIX). Further versions are provided depending on the geographical coverage of the index, i.e. whether it refers to metropolitan areas, other urban areas and rural areas. The most comprehensive measure is the total consumer price index for all these areas, or for the country as a whole.

For inflation targeting purposes the headline consumer price index has the disadvantage that it is influenced directly by changes in the Reserve Bank's repurchase rate. A reduction in the repurchase rate or a relaxation of monetary policy leads to an immediate decrease in the overall consumer price index because mortgage interest payments, which form part of housing costs, decrease. Similarly, an increase in the repurchase rate or a more stringent monetary policy stance leads to an immediate increase in the consumer price index. This disadvantage can be eliminated by changing the method used in the calculation of housing costs. Countries which target the overall consumer price index generally allow for this adjustment in the calculation of their indices.

Core inflation is measured in South Africa by excluding the prices of certain food products, the cost of mortgage bonds and certain indirect taxes from the overall consumer price index. This index has the advantage that it excludes most prices directly affected by policy measures, but it includes administered prices. It further excludes prices over which policy has no control, but which could bring about misleading signals when these prices are affected by exogenous shocks. However, it

does not exclude the effects of all of these prices, such as changes in international oil prices. The measurement of core inflation has the further disadvantage that it is difficult for the general public to understand and less credible than headline inflation.

South Africa opted to target the CPIX in metropolitan and other urban areas because the public can more readily understand this index than the core index and it excludes any direct effects that changes in the repurchase rate could have on prices. It was further argued that the index should be as broad as possible, as leaving out prices for food and energy would for instance lead to a meaningless measure for most members of society. The decision was taken to target CPIX, fully realising that such a broad measure has the disadvantage that it could be affected by exogenous shocks over which monetary policy has no control.

Prices in rural areas were originally excluded from the target definition due to a lack of information. Although Statistics South Africa later started to compile the CPIX index including the rural areas, it was decided to continue defining the inflation target in terms of the CPIX for metropolitan and other urban areas primarily because rural prices are mainly estimated by applying rural expenditure pattern weights to the prices surveyed in major towns and do not reflect the actual prices in a specific rural area. The time series of the CPIX for the country as a whole is also still relatively short, which impedes the use of this series in forecasting.

4.3 Setting the target

In setting the target a decision has to be made about the level of the target. If the level of the target is set too high it could give the impression that the authorities are not serious about combating inflation. If the level is set too low it could initially lead to very stringent policy measures which could distort domestic production, consumption, saving and investment. This decision becomes even more difficult when the prevailing inflation rate at the time of the introduction of the target is relatively high.

The target can be specified in terms of a range, a single point or a ceiling. A fixed single-point target is much more difficult to achieve than a range or ceiling. A single point, however, provides the best focus for inflation expectations and avoids the disadvantage of a range or ceiling, which tends to concentrate expectations towards the upper boundary of the range. A range or ceiling leaves some discretion to the central bank and can provide flexibility in the case of unforeseen price shocks. A ceiling has the disadvantage in comparison to a range that it places the total focus on the upper boundary of the target, without indicating where the lower boundary should be. Most inflation-targeting countries have therefore specified their targets in terms of a range or a single point.

If the target is specified in terms of a range, a decision must be taken about the width of the band. A wide range reduces the credibility of the target because it acts less as an anchor of inflation expectations. The disadvantage of a narrow range is that it provides less flexibility to monetary policy than a wider range and that frequent breaches of the range could undermine credibility.

The time horizon over which the target is set could also affect its credibility. Monetary policy measures affect inflation with a long lag. Although there is no certainty about the exact lengths of these lags in South Africa, changes in interest rates probably take from 18 to 24 months to fully affect inflation. A too short time horizon for an inflation target could lead to very stringent policy measures and unnecessary instability in domestic demand and output. If the target is set over a too long period, the public's interpretation

may be that the authorities are not serious about combating inflation and the target may not have any impact on inflationary expectations.

To overcome this latter difficulty it was decided with the introduction of inflation targeting in February 2000 in South Africa to specify the target in terms of an annual average rate of increase in the CPIX for the calendar year 2002. A multi-year target approach was followed by specifying the target as an average annual rate of increase of between 3 and 6 per cent in the CPIX for the years 2002 and 2003 and an increase of between 3 and 5 per cent for the years 2004 and 2005. When it became clear that the inflation target would be missed for a fairly protracted period due to a sharp depreciation in the external value of the rand and a number of other exogenous shocks, the target range for 2005 was increased from 3 to 5 per cent to 3 to 6 per cent.

In November 2003 it was decided to terminate the annual average specification of the target because it complicated the implementation of the inflation targeting framework and could lead to inconsistencies in monetary policy arising from excessive interest rate volatility and ineffective management of inflation expectations. The annual average was then replaced by a continuous target of 3 to 6 per cent for the period beyond 2006. In other words, the target was specified as an inflation rate of between 3 and 6 per cent which must be obtained continuously in every month measured over a twelve-month period in the coming years.

The new specification of the target does not mean that monetary policy must necessarily react if the inflation rate moves outside the target. If it is expected that the inflation rate will again move into the target range within a short period of time, no reaction of monetary policy is required. However, if the inflation rate is expected to remain out of the target for an extended time period, then monetary policy will have to be adjusted. It is not the current rate of inflation that is important in making policy decisions, but the expected future trend in inflation.

4.4 The decision-making process

The decision on the appropriate monetary policy stance is taken by the Monetary Policy Committee (MPC). This committee was constituted shortly before South Africa adopted the inflation-targeting framework for monetary policy. It first met on 13 October 1999. At that time the MPC consisted of 15 members: The Governor, three deputy governors and 10 officials of the Reserve Bank. Meetings were held every six to eight weeks.

At the beginning of 2002 the MPC was reconstituted to consist of eight members: the Governor, three deputy governors and four senior officials of the Reserve Bank. It was also decided to hold quarterly meetings to coincide with the release of the Bank's *Quarterly Bulletin*. However, provision was made for unscheduled meetings if the need should arise, as was the case with the unscheduled meeting in January 2002. At a strategic planning meeting of the MPC in June 2003 it was decided that the four scheduled meetings were too far apart. The frequency of the meetings was then changed to allow for intervals of about two months between meetings, or six meetings per year.

The MPC meetings are normally held over two days. On the first day staff members of the Bank inform the committee about international and domestic economic developments and present a forecast of likely future developments. On the second day a decision is taken about the monetary policy stance and the statement explaining the decision is finalised. This statement is then released at a press conference and broadcast live on national television.

At a meeting of the MPC the members of the committee have to agree on the likely future path of inflation. It is accordingly essential that a detailed assessment is made of all the factors that could affect inflation based on past experience. A large number of indicators are monitored for this purpose, including the growth in money supply and bank credit extension, changes in nominal and real salaries and wages, labour productivity, nominal unit labour costs, the gap between potential and actual domestic output, developments in final demand, the balance of payments, exchange rate changes, short and long-term interest rates, the yield curve, government finances and producer and imported prices. Developments in exogenous factors which could have a bearing on inflationary pressures, such as global growth and inflation, international interest rates, international commodity prices, oil prices, domestic and international agricultural conditions, and administered prices are also taken into account.

To further assist the MPC in forecasting inflation a number of models were developed with the help of the staff of other central banks, comprising a core model, a small-scale model, vector autoregressive models, Phillips-curve models and a disaggregated inflation forecasting model. This reliance on forecasting in making decisions is sometimes regarded as a weakness of the inflation-targeting framework. The forecasts or views on future price developments have to be made irrespective of the monetary policy framework that is applied by the authorities. If the objective of the central bank is the attainment of price stability, it will always have to take a view on how its current policy stance will affect future price developments. The difference between inflation targeting and other monetary policy frameworks is that inflation targeting makes forecasting explicit and transparent.

In making a decision on the monetary policy stance, the MPC does not only rely on forecasts. Every forecast is based on assumptions and the results of models can only be used as an aid in policy making. For this reason the Reserve Bank relies on a number of models to minimise these risks and possible limitations of the individual models. The final decision can nevertheless not be based mechanically on the forecasts, but must be judgemental after a careful analysis of all economic data and risks.

In making monetary policy decisions the Reserve Bank realises that exclusive emphasis on the inflation target could lead to highly undesirable results in the economy. Although the achievement of the target is the overriding objective of monetary policy, the MPC also recognises that decisions which ignore special circumstances could lead to instability in the real economy. If a severe exogenous shock affects the economy, extreme measures to reach the inflation target could be very costly in terms of lost output and employment. In such cases, some discretion is applied by the MPC, while also taking into account that if the target was consistently missed by a wide margin, the credibility of the Reserve Bank and the ability to lower inflation expectations could be compromised.

The inflation-targeting framework at first made allowance for the influence of exogenous shocks by means of an escape clause which stipulated the circumstances under which the Bank could not be expected to reach the target. Experience showed that this escape clause created problems in communicating monetary policy decisions. It was therefore replaced by the introduction of an "explanation clause" in November 2003. It is now expected of the Bank to fully inform the public of the nature of any exogenous shock, its anticipated impact on inflation, the monetary policy response that will be taken to ensure that inflation returns to the target range and the time horizon over which this is expected to happen.

4.5 The transparency and accountability of monetary policy

The adoption of the inflation-targeting monetary policy framework has substantially improved the transparency and accountability of monetary policy. The publication of monetary policy statements and press releases, and live television broadcasts after each MPC meeting, i.e. six times a year, keep the general public well informed on monetary policy issues.

In order to further develop a better understanding of monetary policy, Monetary Policy Forums are convened by the Bank. These forums are held twice a year in the major centres of South Africa and representatives of the labour movement, business, government and academic institutions are invited to attend. At these meetings MPC members provide an overview of recent international and economic developments and explain the monetary policy stance. At the same time the public is invited to express their views on monetary policy and economic conditions. This ensures that the MPC takes the view of interested parties into account in the determination of monetary policy.

In addition, the Reserve Bank publishes a *Monetary Policy Review* twice a year. In these reviews a more detailed analysis is made of domestic and international economic developments and the factors that affected or could in future influence inflation. The review includes the Bank's core forecast of inflation in the form of a fan chart. Confidence intervals in the fan chart show the varying degrees of certainty for projected rates of increase in CPIX inflation.

The inflation-targeting framework improves the accountability of the Reserve Bank because it provides an explicit and publicly known benchmark that must be reached over a specific time frame. In South Africa's previous monetary policy frameworks the objective of monetary policy was to bring the domestic inflation rate down to those of the country's main trading partners and competitors. A specific numerical target was therefore not provided and it was not indicated at what time this objective would be achieved.

The Governor of the Reserve Bank is required to submit annually a report on the implementation of monetary policy to the Minister of Finance. In addition, in terms of section 32 of the Reserve Bank Act, the Bank must, on a monthly basis, submit a statement of assets and liabilities and annually present its financial statements to the National Treasury. These reports are then tabled in Parliament by the Minister of Finance. The Governor also appears regularly in Parliament before the Portfolio and Select Committees on Finance to explain the monetary policy stance adopted by the MPC.

Moreover, section 37 of the Reserve Bank Act provides that if at any time the Minister of Finance is of the opinion that the Bank has failed to comply with any provision of the Act or a regulation thereunder, he may by notice in writing require the Board of the Bank to make good or remedy the fault within a specified time. If the Board fails to comply with such a notice, the Minister may apply to the Supreme Court for an order compelling the Board to make good or remedy the default, and the Court may make such order thereon as it deems fit.

5. Inflation targeting and the exchange rate

Changes in exchange rates are important in the determination of monetary policy because they could have a major impact on inflation. In small open economies exchange rate movements are of even more significance than in advanced industrialised countries as they are likely to have a proportionally greater impact on prices, price competitiveness,

resource allocation and output. Highly indebted developing countries are particularly vulnerable to exchange rate movements if their debts are denominated mainly in foreign currencies. A substantial depreciation of a domestic currency under such circumstances could easily lead to a financial crisis.

In view of these effects of exchange rate movements on the domestic economy, monetary policy may be tempted to focus too narrowly on exchange rate stability. As Mishkin (2000) points out, the risk arises that the exchange rate instead of the inflation target may become the nominal anchor of monetary policy. This could lead to a tightening of monetary policy at times when inflation expectations and forecasts do not suggest that inflationary pressures are increasing, or vice versa. Too much concern about exchange rate stability can induce a wrong policy response. Targeting the exchange rate is likely to worsen the performance of monetary policy and could under certain circumstances even lead to a recession or an overheating of the economy.

This does not imply that inflation-targeting central banks should pay no or little attention to exchange rate developments. The exchange rate is an important transmission mechanism of monetary policy. Exchange rate changes affect inflation, aggregate demand, economic growth, employment creation and income distribution. Monetary policy-makers therefore need to closely monitor exchange rate developments to make the right decision.

The decision on the adoption of a specific monetary policy stance depends on the underlying economic circumstances. For example, if recorded economic growth is close to potential economic growth and inflation is higher than the targeted level, monetary policy does not need to respond to an appreciation of the currency. But if the exchange rate depreciates under these circumstances, the monetary authorities will probably have to increase interest rates. If monetary policy does not react, the depreciation of the currency could put further upward pressure on inflation and aggregate demand.

Unfortunately, the decision on the appropriate monetary policy stance is not always clear-cut. For instance, where economic growth is well below potential, inflation is rising and the external value of the currency is appreciating, it is not so easy to decide on the appropriate monetary policy stance. In this case a lowering of interest rates could benefit economic growth and weaken the external value of the currency, but could also lead to a further acceleration in inflation.

In view of the importance of the exchange rate of a currency in the determination of monetary policy, some countries (Chile, Israel and Hungary) have combined inflation targeting with crawling-peg or fixed-band exchange rate regimes. This seems to have worked relatively well where inflation targeting took precedence over the exchange rate target, but not where exchange rate stability became the major objective. Most inflation-targeting countries have preferred to rather adopt a freely floating exchange rate regime with only moderate intervention by the central bank in the foreign exchange market.

In South Africa the determination of the external value of the rand has also been left to supply and demand conditions in the foreign exchange market. Although the authorities would prefer to have greater exchange rate stability, they realise that under current circumstances it is unavoidable that the exchange rate will fluctuate periodically. Large fluctuations in financial flows, sometimes caused by developments in other countries, make the achievement of exchange rate stability nearly impossible. In fact, since the adoption of a floating exchange rate regime together with the inflation-targeting monetary policy framework, substantial swings have occurred in the exchange rate of

the rand. The nominal effective exchange rate of the rand decreased by 13 per cent in 2000 and 34½ per cent in 2001, but increased again by 24 per cent in 2002 and by 16 per cent in 2003.

Such wide fluctuations in the exchange rate of the rand obviously complicate monetary policy decision-making and the planning of enterprises involved in international trade or competing with importers. South Africa has nevertheless opted for a flexible rather than some form of fixed exchange rate regime for a number of reasons.

Firstly, attempts in the past to maintain a fixed or semi-fixed exchange rate system by pegging the rand to the dollar, sterling and a basket of currencies were applied without any meaningful success. In the 1980s and 1990s substantial swings were recorded in the exchange rate of the rand, despite the chosen exchange rate system.

Secondly, in a world of generally floating exchange rates it is impossible to obtain exchange rate stability. The rand could be pegged to one foreign currency or to a basket of currencies, but even then the exchange rate could be volatile. When it is pegged to one currency, the exchange rate floats against all the other currencies not linked to the pegged currency. When it is pegged to a basket of currencies, it floats against all of them.

Thirdly, monetary policy flexibility is effectively abandoned with the application of the various forms of fixed exchange rate regimes. For instance with a fixed peg or a currency board, short-term interest rates are to a large extent determined by the authorities of the country to which the domestic currency is pegged. The interest rate levels are therefore not necessarily appropriate to the needs of the domestic economy and may create general economic instability which could have more adverse effects than exchange rate instability.

In the present international monetary system fluctuations in the exchange rate of a currency are unavoidable. The authorities can only aim at creating underlying economic conditions that are conducive to exchange rate stability. One of the factors that has contributed to fluctuations in the external value of the rand in the past is the oversold net open position in foreign currency (NOFP) of the South African Reserve Bank, i.e. the net foreign reserves minus the oversold forward book of the Bank. One of the Bank's objectives was to eliminate the NOFP, which stood at US\$23,2 billion at the end of September 1998. This was finally achieved in May 2003.

In an attempt to further improve the functioning of the South African market in foreign exchange, the Bank after May 2003 shifted its focus to reducing its oversold forward book and to strengthening the official foreign exchange reserves. The forward book was closed out during February 2004. The official gross gold and other foreign reserves were also increased from US\$7,7 billion at the end of June 2003 to more than US\$11 billion at the end of June 2004. The Bank indicated that it would further increase these foreign reserve holdings whenever circumstances permitted such increases.

6. Inflation targeting and asset prices

As in the case of exchange rates, it is inadvisable to target asset prices together with the inflation rate. Systematically reacting to changes in asset prices may be destabilising and lead to wrong monetary policy decisions. A mechanical reaction to asset price changes is wrong because changes in these prices are not always related to fundamental factors that could affect inflation. Moreover, changes in the prices of different assets could give opposing signals. For example, fixed property prices may be

increasing sharply, while share prices are declining. It will also be difficult for a central bank to target aggregates over which it has little control. It therefore seems ill-advised for a central bank to take action against a rise in asset prices when inflation forecasts indicate that inflation targets will be met. It is difficult to motivate an increase in interest rates to curb credit extension if the assessment of inflation does not show that the inflation target will be exceeded.

Although it is unwise to target asset prices, it is nevertheless important in decision-making to take account of asset price movements. Changes in asset prices could reflect developments in the financial sector as well as in the real economy that could impact on inflation. Asset price inflation usually occurs with a rapid rise in credit extension and excessive debt accumulation, that tend to lead to an acceleration in inflation. An asset price bubble could therefore have serious repercussions on the real economy. In the determination of monetary policy there is therefore good reason to take note of changes in the prices of fixed property, shares and bonds, and to determine how they could possibly affect final demand and inflation.

Since the introduction of inflation targeting in South Africa excessive increases in asset prices have not been an important factor in the determination of interest rate levels. However, in its deliberations the MPC carefully considers changes in asset prices and whether they could impact on the projected inflation rate. It is also regarded as important because asset price changes are an integral element of the monetary policy transmission process.

7. Inflation targeting, economic growth and employment

Some commentators on monetary policy, particularly labour organisations, argue that inflation targeting leads to an overemphasis on monetary stability at the cost of growth and development, and reduces flexibility in dealing with exogenous shocks to the economy. Although they agree that low inflation and high economic growth are both desirable objectives, they are of the opinion that in the current situation of high unemployment and low economic growth in South Africa, the cost of reducing inflation is unacceptably high.

The trade-off between inflation and unemployment has received considerable attention since 1958, when Philips and Lipsey argued that monetary policy could maintain a permanently lower rate of unemployment by accepting some degree of inflation, and vice versa. However, over time it became obvious that this relationship does not exist over the long term and that it is difficult to take into consideration when determining monetary policy over the short term. Because of the long and variable lags between monetary policy actions and their effects on the economy, monetary policy actions aimed at stabilising the business cycle could actually be destabilising. Theories were also developed showing that over the short term the trade-off in the Phillips curve would apply, but that over the long term the Phillips curve was vertical. The fact that there is not a long-run trade-off between inflation on the one hand and economic growth and employment on the other hand, makes the benefits of an accommodating monetary policy stance largely transitory while the costs of the policy measures are permanent. Over the long term the central bank can only affect inflation, but has no impact on economic growth and employment.

Even more important is the fact that high inflation is detrimental to economic growth and employment creation. High inflation distorts the allocation of resources and favours investment in non-productive hedge assets. Highly skilled people apply their talents to profit from the inflationary process, instead of concentrating on the improvement of production methods and the creation of employment opportunities. High inflation dis-

courages saving and results in higher consumption. It also induces a preference for debt financing by businesses and individuals. Low domestic saving, in turn, leads to serious balance-of-payments constraints in the achievement of economic development.

In view of these disadvantages of inflation, most economists agree that high inflation is harmful for economic growth and employment creation. However, some economists argue that moderate rates of inflation, below about 8 per cent, do not have significant negative effects on economic growth and employment creation. This is disputed by other economists arguing that the unpredictability of price changes associated with inflation will restrict economic growth even at low levels of inflation. Despite these conflicting views, many economists argue that the inflation rate of a country should be in line with those of its main trading-partner and competitor countries. If a country's inflation rate is significantly higher than those of its trading partners or competitors it could result in a loss of price competitiveness over time and generally unstable economic conditions.

The acknowledgement of a short-run trade-off between inflation and economic growth has probably contributed to the application of inflation targeting in a flexible rather than strict manner. Strict inflation targeting is applied where the central bank attempts to reach the long-term inflation objective as quickly as possible, while central banks following a flexible approach will attempt to reduce inflation gradually to the desired long-term level taking the effect of its actions on other economic variables into consideration.

When government determines the level and time horizon of the target, whether in consultation with the central bank or not, it makes a decision about applying a strict or flexible inflation-targeting framework. The overriding objective of monetary policy becomes the achievement and maintenance of the inflation rate within the target over the period of time as specified by government. In South Africa the level and time horizon of the inflation target are determined by government in consultation with the Reserve Bank. After the determination of the target, the Reserve Bank's role is to meet the target, or to advise government to change the target if it is of the opinion that a too stringent or accommodative monetary policy would be required that could harm the economy.

If the central bank deviates from this objective and the rate of inflation is consistently above the level of inflation, it gives rise to the "policy credibility problem" or as it is also known, the "time inconsistency problem". As indicated by Bleijer and others, experience has shown that there is a trade-off between flexibility and credibility in the application of inflation targeting: "The more flexible the framework, the less credible it tends to be" (Bleijer and others, 1999:5). If the central bank is too flexible, an adjustment in inflation expectations takes place leading to higher inflation with no benefits for growth and employment.

The concentration on achieving the inflation target does not mean that the Reserve Bank is not concerned with economic growth and employment creation. A careful analysis is made of current and projected international and domestic economic conditions in the determination of the monetary policy stance. However, the primary objective of the Bank in determining interest rate levels is the impact that its actions will have on inflation. If the Bank is of the opinion that the attainment of the inflation target can only be achieved at costs too high to the economy over the short term, it is still obliged to attain the inflation target. In these circumstances the Reserve Bank can at most advise government to reconsider the level or time horizon of the inflation targets.

8. Conclusion

In conclusion, the question may be asked how effective the implementation of inflation targeting has been in South Africa. Unfortunately, there is only a relatively short period over which the performance of inflation targeting can be evaluated.

In 2002, the first year for which an inflation target was specified on the basis of an average annual rate of increase of between 3 and 6 per cent, the rate of increase in CPIX averaged 10 per cent. The actual inflation rate was therefore 4 percentage points above the upper limit of the target range. The target was exceeded largely due to extraordinary events that could not be foreseen and which were beyond the control or influence of monetary policy.

Four exogenous factors were mainly responsible for the high rate of increase in the general price level. Firstly, the nominal value of the rand on a trade-weighted basis declined by approximately 34 per cent in the second half of 2001. Secondly, the prices of food increased by almost 17 per cent in 2002. Thirdly, the price of Brent crude oil rose from US\$20 per barrel in February 2002 to US\$28 per barrel in December 2002. Fourthly, administered prices increased at high rates of about 10 per cent or more in 2002.

When it became apparent that the inflation rate was starting to accelerate and that the inflation target would not be met, corrective measures were immediately taken to bring the rate of increase in CPIX to within the target range. The official lending rate of the Reserve Bank was increased by 400 basis points in four steps during 2002 to slow down inflation.

These corrective measures, assisted by a number of other factors such as continued fiscal prudence and a recovery in the exchange rate of the rand, brought about the desired result. The twelve-month rate of increase in the CPIX slowed down from 11,3 per cent in November 2002 and moved below the now continuous specification of the upper limit of the inflation target range to 5,4 per cent in September 2003. CPIX inflation then decelerated further to a year-on-year rate of 4,4 per cent in March 2004, and remained at this level in the next two months. This allowed the Reserve Bank to reduce the repo rate by 5,5 percentage points to 8 per cent in the second half of 2003.

Although inflation targeting alone cannot claim the success of achieving the inflation target, it can be stated that the consistent application of this framework assisted in bringing about this result because it strengthened the Reserve Bank's mandate to focus on price stability. It also provided an anchor for expectations of future inflation to influence price and wage setting. According to the *Survey of Inflation Expectations* of the Bureau for Economic Research of the University of Stellenbosch, inflation expectations have declined significantly since 2000, and during the fourth quarter of 2003 the overall figure for financial analysts, business executives and the trade unions fell within the target range.

As already indicated, monetary policy transparency, accountability and communication have been improved in the application of inflation targeting. In previous policy regimes there were no explicit benchmarks for judging the performance of the Bank objectively. In the inflation-targeting framework a specific target is set for a particular price index to be achieved within a specific time frame.

As a result of the introduction of inflation targeting, the forecasting models of the Reserve Bank have been improved considerably. Econometric techniques and model structures were revised to facilitate decision-making. The prediction of inflation is, of course, important because policy measures must be forward-looking to be effective.

All in all, it can therefore be concluded that the introduction of inflation targeting has benefited the implementation of monetary policy in South Africa.

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