5. The comparative experience

5.1 Introduction

This chapter surveys the early experiences of Brazil, Chile, Israel, the Czech Republic, Poland and New Zealand under inflation targeting frameworks. South Africa's experience is then compared with the experiences of these countries. These countries' diverse socio-political and economic contexts influence the conduct of monetary policy and the shocks and risks attached to these countries. South Africa, like the broad grouping of emerging-market economies is vulnerable to shocks and is also undergoing structural change. A brief survey of New Zealand is included because it pioneered the inflation targeting framework.

The comparative assessment is structured according to:

- the stress tests, responses and success or failure of the inflation targeting framework;
- institutional and policy adjustments to the framework; and
- credibility.

There are a number of significant differences between the experiences of emerging markets compared with industrialised countries. This factor puts the analysis in perspective and explains the context for the difficulties experienced by emerging markets. Firstly, the emerging-market countries that have adopted inflation targeting did so when their inflation rates were much higher and more variable than the industrialised countries (SARB, 2001: 5). According to a study by Schaechter et al. (2000: 42), the rate of inflation in the month during which the transition to inflation targeting began averaged 12.4 per cent for emerging market countries compared with an average of 3.6 per cent for industrialised countries. The targets for these emerging markets were, therefore, initially a lot higher than for the industrialised countries since they could not be seen to be setting unrealistic targets without losing credibility as a result. The authors also found that the emerging-market inflation targeting countries have less developed financial systems than their industrialised counterparts. The authors note that emerging-market countries which target inflation have more open economies than their industrialised country counterparts, with significantly higher ratios of traded goods and services to gross domestic product. Emerging-market economies are also more vulnerable to currency crises and crashes in comparison with industrialised countries. They are also more subject to larger real economic shocks.

5.2 Comparison of inflation targeting frameworks and institutional arrangements

As can be seen from Table 6 on page 71, the inflation targeting frameworks of the seven countries analysed in this study (including South Africa) differ somewhat in design and operational procedures.

Headline CPI or some variant thereof appears to be the favoured target index. Brazil, Chile, Poland, and Israel target headline CPI while New Zealand and South Africa target a variant of headline CPI. Whether headline CPI or a variant of headline CPI is targeted, the targeted measure in these cases excludes interest costs. Interestingly, only the Czech Republic targets a variant of core CPI. Interest costs and other components may be excluded if monetary policy has a direct influence on those or if they are totally exogenous. However, this has to be weighed against the need to have a representative index to target.

The target widths vary considerably. South Africa currently has a 300-basis point scope for its target range. The width was narrowed to 200 basis points after an announcement in October 2001 but reversed a year later after a sharp increase in inflation (SARB, 2002: 1; SARB 2003b: 1). Brazil's band remained at a constant 400 basis points wide for the first three years. The Czech Republic initially opted for a 100-basis-point band before moving to a 200-basis-point band for the third and fourth year after continued target breaches. Chile's band has gradually fallen from 500 basis points to 200 basis points a decade after the introduction of the framework. Israel began with a 100-basis-point band before moving to a point target for two years and subsequently settled on a 200- to 300-basis-point band. New Zealand's band has been fairly constant at 200 basis points, widening to 300 basis points from 1997 onwards with the political change. A wider target band is, clearly, easier to hit and may be a wise choice under conditions of volatility or uncertainty.

An interesting point to note is that escape clauses seem to be unpopular. Of the countries surveyed, New Zealand (whose escape clause has been modified substantially over time), South Africa and the Czech Republic have formal escape clauses making allowances for events like natural disasters, exchange rate shocks, and other unforeseen events beyond the control of the central bank. The remaining four countries deal with target misses either by issuing an open letter to the Minister of Finance, as in the case of Brazil, or a public explanation, as in the case of Israel. In South Africa's case the escape clause was changed to an explanation clause that appears to be more akin to Israel's method. New Zealand has an escape clause but also has to publicly explain the target breach. It is the only central bank where the Governor can be dismissed should the Minister of Finance deem it appropriate in the face of a target breach.

The countries analysed in this study also differ vastly in terms of their transparency. The basic standard appears to be the publication of an inflation report (see Fracasso et al., 2003), although Israel and Chile only began publishing their reports seven and nine years, respectively, after the introduction of inflation targeting. The delay arose because Israel and Chile were not true inflation targeters initially but rather they operated a dual exchange rate and inflation target. Some form of inflation projections either in numerical form or in the form of a fan chart is released by Brazil, Chile, the Czech Republic, Poland, New Zealand and South Africa. The exception is Poland. The publication of explicit models is uncommon, with only Brazil falling into this category (Fracasso et al., 2003: 20).

In most instances the inflation target is set either by the government in consultation with the central bank or by one of them in consultation with the other. However, in the Czech Republic and Poland the targets are set by the central bank alone.

The monetary policy decision-making body i.e. the interest-rate setting body, in most cases is a committee or policy board. The interest rate is frequently decided on by a vote among the members. However, in Israel the Governor makes the decision in consultation with senior staff and in New Zealand the Governor can break a tie in the voting as can be seen in Table 6. Although South Africa's consensus decision-making process may appear to be something of an anomaly among this group of countries, there are in fact a number of countries which use consensus-seeking methods in their interest rate decisions. These include countries such as Australia, Canada, Switzerland and Thailand (Fracasso et al., 2003: 3).

Table 6: Design of inflation targeting frameworks in selected countries

Country	Date introduced	Target price index	Target width	Interest-rate setting body	Decision process	Escape clauses	Accountability of target misses	Target set by	Transparency and accountability
Brazil	June 1999	Headline CPI	1999: 8% +-2% 2000: 6% +-2% 2001: 4% +-2%	MPC; 9 members	Voting. The Governor can break a tie; dissenting votes are reported in the minutes.	None	Open letter to Minister of Finance	Government in consultation with central bank	Publication of inflation report, inflation projections and fan chart, minutes, and explicit models
Chile	January 1991	Headline CPI	1991: 15-20% 1992: 13-16% 1993: 10-12% 1994: 9-11%	Board of Directors; 5 members	Voting. The Governor can break a tie; dissenting votes are reported in the minutes.	None	None	Central bank in consultation with government	Publication of inflation report from 2000, extracts of policy meeting minutes, inflation projections and fan chart
Czech Republic	January 1998	Core CPI (excluding regulated prices & indirect taxes)	1998: 5.5% – 6.5% 1999: 4 – 5% 2000: 3.5 – 5.5% 2001: 2 – 4%	Bank Board; 7 members	Voting. The Governor can break a tie; dissenting votes are reported in the minutes.	Natural disasters, commodity prices, exchange rate shocks, etc.	None	Central bank	Publication of inflation report from 1998, policy meeting minutes (12-day delay), inflation projections
Israel	January 1992	Headline CPI	1992: 14-15% 1993: 10% 1994: 8% 1995: 8-11%	Senior Monetary Forum but decisions taken by Governor	Governor	None	Public explanation of deviation of inflation forecast from target in excess of 1%	Government in consultation with central bank	Publication of inflation report from 1998, inflation projections

Country	Date introduced	Target price index	Target width	Interest-rate setting body	Decision process	Escape clauses	Accountability of target misses	Target set by	Transparency and accountability
New Zealand	March 1990[1]	Headline CPI (Prior to 1999 the target index excluded interest charges & other first-round effect prices; since 1999 the target index excludes interest charges)	1990: 3-5% 1991: 2.5-4.5% 1992: 1.5-3.5% 1993 to 1996: 0-2%	MPC; variable number of members	Governor (can break a tie)	Unusual events provided they do not cause general inflationary pressures	Public explanation of target breach and measures taken; Minister of Finance may ask for Governor to resign	Jointly by government and central bank	Publication of inflation report from 1990, inflation projections
Poland	October 1998	Headline CPI	1998: <9.5% 1999: 6.6-7.8% 2000: 5.4-6.8% 2003: <4%	MPC; 10 members	Voting	None	None	Central bank	Publication of Inflation report, voting record,
South Africa	February 2000	CPIX (Headline CPI excluding mortgage interest costs)	2002: 3-6% 2003: 3-6% 2004: 3-6% (initially 3-5%) 2005: 3-6% (initially 3-5%)	MPC; 8 members	Consensus	Major unforeseen events outside bank's control (changed to explanation clause in 2003)	Public explanation	Government in consultation with the central bank	Publication of Inflation Report; inflation projections (fan chart)

Source: Mishkin & Schmidt-Hebbel, 2001; Fracasso, Genberg & Wyplosz, 2003

1. As Fracasso, Genberg & Wyplosz (2003:2) note there is some debate about the date when inflation targeting was announced in some countries. These authors note the start date of inflation targeting in New Zealand as April 1988 with the first Inflation Report being released in April 1990.

5.3 Stress tests, monetary policy responses and achievement of targets

5.3.1 Israel

Israel adopted inflation targets in 1991 in conjunction with an announcement of a crawling exchange rate band in that year. Monetary policy was therefore based on two nominal anchors – an exchange rate band and an inflation target (Leiderman & Bufman, 1999: 72). Rather than communicating an upfront commitment to inflation targeting, Schaechter et al. (2000: 16) observe that Israel shifted slowly to an inflation targeting framework as the central bank's commitment to achieving the inflation targets became clear and the authorities demonstrated that achieving the targets was the primary objective of monetary policy. They argue that Israel only became a fully-fledged inflation targeter in 1997 when the exchange rate band was widened.

The first target for Israel was set at a maximum inflation rate of 14 to 15 per cent for 1992 (Nagar, 2002: 16). The target for 1993 was set at 10 per cent and for 1994 the target was set at 8 per cent, as can be seen in Table 7. Israel suffered severe stress tests to its inflation targeting framework throughout the 1990s (Leiderman & Bufman, 1999: 72). There was a confluence of stress tests in the early years of inflation targeting as well as the presence of long-term obstacles in the form of administered prices and high wage settlements.

The largest deviation from the inflation target occurred in 1994 when annual inflation reached 14.5 per cent against a target of 8 per cent. This was a result of the combination of large price increases in housing, fruit and vegetables which resulted in a massive 650-basis-point deviation from the 1994 target. The price rise was, in the main, caused by a number of factors including a rise in domestic demand as a result of the successful absorption of large numbers of immigrants into the employment pool. A large increase in public sector wages and money supply during the latter half of 1993 also contributed. The deviation from the target compelled policy-makers to set the 1995 target at 8 to 11 per cent (Ben-Bassat, 1995: 39). In response to the massive breach of the target, the Bank of Israel tightened monetary policy decisively in 1994 to counter an expansionary fiscal policy, demand pressures and a rise in inflation expectations (Leiderman & Bufman, 1999: 72).

Israel's monthly CPI generally fluctuates widely because of housing prices, fruit and vegetable prices and the prices of government-controlled goods. However, these factors, which constitute some 40 per cent of CPI, are not excluded from the index as this would have damaged its credibility as an appropriate target (Ben-Bassat, 1995: 42).

Table 7: Israel's early experience under inflation targeting

Year (for target attainment)	**Target (headline CPI)**	**Outcome**	**Shocks**
1992	14 – 15%	9.4%	
1993	10%	11.2%	
1994	8%	14.5%	Fruit, vegetable, housing price rises; administered prices, macroeconomic policy

Source: Ben-Bassat, 1995; Mishkin & Schmidt-Hebbel, 2001

Administered prices or government-controlled prices constitute some 15 per cent of the index (Ben-Bassat, 1995: 35). Although the Minister of Finance announced that price increases in these goods would be consistent with the inflation target, in 1994 these prices rose by an average of 12 per cent against an inflation target of 8 per cent. Ben-Bassat (1995: 37) notes that government-controlled prices have a large impact since they reflect government policy and, therefore, influence inflation expectations. The incongruity between the inflation target and the rate of increase of government-controlled prices undermines the credibility of a policy of inflation targeting. This underscores the importance of a supportive context for the inflation targeting framework.

Israel was also plagued by the rigidity of real wages as a result of the strength of the labour unions in the early years of its inflation targeting regime. The government's wage policy in 1994 harmed the inflation target due to an increase in public-service wages by a nominal 27 per cent after several years of moderate wage rises. This was well above the 8 per cent inflation target. The move threatened to undermine public confidence in the government's commitment to the inflation target (Ben-Bassat, 1995).

Despite these early tests to the framework and the massive target breach in 1994, Schaechter et al. (2000: 50) consider Israel's overall experience with inflation targeting to have been a success. The authors note that during the 1990s most of the inflation targets were met and inflation was reduced from 18 per cent at the end of 1991 to about 1 per cent at the end of 1999. Disinflation, they say, was facilitated by improvements in productivity and a programme of fiscal consolidation.

During the 2000s, Israel entrenched its success with the inflation targeting framework. From 1999 to 2004 annual inflation averaged 1.4 per cent (Bank of Israel, 2004) and marked the end of a decade of high inflation. The Bank of Israel noted in its *Inflation Report* of 2001 (Bank of Israel, 2001) that monetary policy, and particularly the inflation targeting framework, had succeeded in lowering Israel's annual inflation rate from 15 to 20 per cent to less than 3 per cent, akin to the low rate accepted in western countries. There were, however, some deviations to below the target band. Despite these deviations, the framework was beneficial since the public perceived monetary policy as credible thereby preserving price and financial stability within a country vulnerable to shocks (Bank of Israel, 2001).

5.3.2 Brazil

Brazil adopted inflation targeting in June 1999 after abandoning its crawling exchange rate peg in January of that year. Schaechter et al. (2000: 47) note that the exchange rate was under pressure following the Asian/Russian financial crisis in August 1998. The move towards inflation targeting was a way of restoring credibility and indicating the long-term orientation of monetary policy (Schaechter et al., 2000: 46). Brazil's initial target band, adopted in mid-1999, was set at 6 to 10 per cent, gradually ratcheting down, as can be seen in Table 8. Prior to this Brazil had already achieved rapid disinflation with the introduction of the crawling exchange rate peg which was used as an anchor for monetary policy from the middle of 1994.

Table 8: Brazil's early experience under inflation targeting

Year	Target[1] (Headline CPI)	Outcome[2]	Shocks
1999	6 – 10%	8.94%	Exchange rate depreciation
2000	4 – 8%	5.97%	Oil price rise
2001	2 – 6%	7.67%	Domestic energy crisis; 9/11; Argentine crisis

Source: 1. Schaechter et al., 2000
2. Central Bank of Brazil, 2000, 2001, 2002

Although on the surface Brazil's early experience under the inflation targeting framework appears benign with the targets achieved in the first two years and missed in the third year, Bogdanski et al. (2001: 93) identified a total of eight "shocks" in the first 18 months of the new policy framework being adopted, between July 1999 and November 2000. The shocks, tabulated in Table 9, included a variety of supply and financial shocks and stress tests associated with food market conditions, backward-looking prices (BLP) and international oil prices. BLP, viewed as a stress test in this instance, refer to the setting of public utility fees based on past indices. Interestingly most of Brazil's policy reactions to these initial shocks were to hold or reduce interest rates, rather than to increase interest rates and respond to shocks that were clearly outside the control of monetary policy. This mirrors the consensus that monetary policy should concern itself with second-round effects.

Aside from the shocks in the first 18 months, Brazil suffered a number of other shocks in 2001 and 2002 (Minella et al., 2003). These had a significant impact on inflation. In 2001 Brazil was affected by a domestic energy crisis, the deceleration of growth in the world economy, the terrorist attacks on the US, and the Argentine crisis which put pressure on the exchange rate. By 2002, the currency depreciated sharply again, mainly as a result of increased risk aversion in international capital markets and a confidence crisis about the uncertainties of future macroeconomic policies under a new government. The Brazilian economy experienced a sudden halt in capital inflows to the country, which led to significant currency depreciation. The energy crisis from 2001 to the beginning of 2002 and the deregulation of the domestic market for oil by-products also led to direct inflationary pressures.

The central bank's response to the various shocks – mainly the currency depreciation and the increase in administered prices – was aimed at trying to limit the impact of the shocks on other prices in the economy. The Bank raised the Selic rate, the rate controlled by the central bank, by 375 basis points between March and July 2001. Minella et al. (2003: 111) conclude that although the actual inflation rate breached the upper limit of the inflation target in 2001 and 2002, the inflation targeting framework was successful in anchoring expectations. This was a result of the central bank's strong reaction to deviations and the subsequent credibility gains achieved.

Table 9: Main shocks and policy reaction in Brazil

Shock	**Timing**	**Description**	**Policy reaction**
Backward-looking prices (BLP)[1]	July 1999	BLP higher than expected by the market; oil price	Interest rate reduced from 22% to 21%
Financial	August 1999	Disagreement with monetary policy, increased hedging demand	Interest rate held constant at 19.5%
Financial	October 1999	Inflation above expectations; trade deficit; concerns about pass-through and Y2K-related capital flows	Interest rate held constant at 19%; net international reserve floor reviewed

Table 9: continued

Shock	Timing	Description	Policy reaction
Oil prices	December 1999	Concerns about monetary policy tightening abroad, oil price developments and BLP for 2000; unexpected rise in food prices	Interest rate held constant at 19%; foreign exchange auctions
Financial	April/May 2000	International stock market volatility; oil price upsurge; robustness of fundamentals	Interest rate held constant at 19%
Food prices	June 2000	Inflation much lower than expected in the first half	Interest rate reduced from 18.5% to 17.5%
Backward-looking prices (BLP)	July/August 2000	Accompanied by adverse oil and food prices	Interest rate held constant at 16.5%
Financial	November 2000	Oil price; Argentine crisis	Interest rate held constant at 16.5%

Source: Bogdanski et al., 2001: 94

1. Bogdanski et al. (2001: 93) use the term backward-looking prices for administered prices. They are termed backward-looking prices because the annual resetting of public utility fees such as electricity and telecommunications follows contracts linked to the past variation of general price indices.

In the more recent past Brazil once more experienced turmoil in its inflation targeting efforts. In 2002 and 2003 increased risk aversion and instability in the domestic financial markets pushed inflation well outside of the central bank's target range. Towards 2004 and 2005 price pressures abated somewhat (De Campos, 2003 & 2004).

Given the large number of shocks Brazil experienced in the initial stages of inflation targeting, the shocks were handled rather well. In the view of Minella et al. (2003: 114) a central bank's performance should not be measured only by whether the targets were achieved. They assert that the "evolution of inflation expectations and the role of the target should be more relevant variables for assessing the credibility of the Central Bank." They further conclude that the inflation targeting framework proved valuable in achieving low levels of inflation in Brazil, despite the large shocks the economy had to withstand. The central bank's commitment to the achievement of the targets acted as an important control of inflation expectations and created a more stable inflation environment.

5.3.3 Chile

Chile was the first developing country to adopt the inflation targeting framework. In the initial stages Chile, similar to Israel, operated a crawling exchange rate band which was implemented to reduce excessive exchange rate volatility. The country only adopted a floating exchange rate in September 1999 and therefore could not be considered a fully-fledged inflation targeter at the outset. However, the central bank gained independence in 1990.

The first inflation target was announced in September 1990 for the calendar year 1991 as shown in Table 10. Although the target was missed in the first year of inflation targeting, broadly speaking Chile was generally successful in attaining its targets. Inflation fell from 27.3 per cent in 1990 to 2.3 per cent in 1999 (Morande & Schmidt-Hebbel, 2000: 65). A key feature of the Chilean experience, according to Morande & Schmidt-Hebbel (2000), was the gradual nature of the framework, which allowed for the achievement of the targets without incurring substantial output costs.

Table 10: Chile's early experience under inflation targeting

Year	**Target (Headline CPI)**	**Outcome**	**Shocks**
December 1991	15 – 20%	22%	Effects of oil price rise, previous expansionary policies
1992	13 – 16%	15.6%	
1993	10 – 12%	12.7%	

Source: Mishkin and Schmidt-Hebbel, 2001 and Central Bank of Chile (2005)

However, from the outset Chile faced two stress tests in the form of a significant rise in inflation caused by expansionary policies in 1989 and the oil price shock related to the Gulf war (Morande & Schmidt-Hebbel, 2000: 63). In response to this the central bank tightened monetary policy and decided to adopt inflation targeting as its anchor for monetary policy. Chile had undergone two major stabilisation programmes based on a nominal exchange rate anchor in the late 1950s/1960s and the late 1970s/1980s. According to Morande & Schmidt-Hebbel (2000: 64) both failed dismally. Using the exchange rate as an anchor for monetary policy for a third time would have irreparably damaged the central bank's credibility, so it opted for inflation targeting as an anchor.

According to Landerretche et al. (2001: 28) a few main lessons emerge from Chile's experience. The first is that initial progress in reducing inflation to within the target range was slow as the public was becoming educated about the true commitment of the central bank to attain the target. Second, the gradual phasing in of inflation targeting contributed to declining inflation by lowering inflation expectations and changing wage and price dynamics.

Chile is comparable to Israel in that the initial targets were interpreted as official inflation projections rather than formal targets. It was only after seeing some convergence between the "projections" and the actual inflation rate that the projections became hard targets for which the central bank would be held accountable (Mishkin, 2000: 7). As part of the hardening of the targets, the central bank switched from target ranges to point targets in 1994.

Chile's early experience, then, cannot be taken as a hard-and-fast example for other countries that introduced inflation targets. Its experience was substantially different given the gradualist approach it adopted. This gradualist approached, however, appears to have served the country well with lower inflation expectations being entrenched. However, Mishkin (2000: 8) points out that the success of the gradual disinflation in Chile can also be attributed to supportive government policies, such as small fiscal deficits and the scrupulous regulation and supervision of the financial sector. This is evident from Chile's experience in recent years. The country's inflation target has fallen to a central point of 3 per cent with a range of 2 to 4 per cent (Fracasso et al. 2003: 2) and inflation has gradually converged around the target range over recent years. Such has been the success of the inflation targeting framework that the IMF was prompted to note in a recent Article IV consultation that it recognised the success of Chile's inflation targeting framework in anchoring inflation expectations (IMF, 2004).

5.3.4 Czech Republic

Both the Czech Republic and Poland are considered transition economies. They are relatively new democracies that are in the process of developing new governmental institutions and their economies are undergoing radical restructuring as part of the transition from communism to capitalism (Jonas & Mishkin, 2003: 2).

The Czech Republic was the first transition economy to introduce an inflation targeting regime in 1997 after abandoning its fixed exchange rate regime. The targeted measure was initially the so-called net inflation, which is CPI excluding regulated or government-controlled prices and is adjusted for changes in indirect taxes or subsidy elimination.

As can be seen in Table 11, the Czech Republic's early experience with inflation targeting was rather disappointing. The Czech National Bank (CNB) significantly undershot its targets during the first three years of inflation targeting. The targets were achieved in 2001 but undershot again in 2002. During a panel discussion in 2002 at the Federal Reserve Bank of St Louis, Vàclav Klaus, the former Finance Minister and Prime Minister of the Czech Republic, candidly observed that the country's short-term results with inflation targeting were "very dubious" (Klaus, 2002: 161). The Czech experience "shows as well the problems of inflation targeting in a transition economy. Our central bank did not have sufficient experience with monetary policy, and, in addition, chose an extremely low inflation target which slowed down the economy too much. After that we could not get out of deflation" (Klaus, 2002: 161).

Table 11: Czech Republic's early experience under inflation targeting

Year	Target[1]	Outcome	Shocks
1998	5.5 – 6.5%	1.7%	Credit crunch
1999	4 – 5%	1.5%	Credit crunch, declining food prices
2000	3.5 – 5.5%	3%	
2001[2]	2 – 4%	2.2%	

1. CPI excluding regulated prices & indirect tax changes, referred to as net inflation
2. In April 2001, the target was changed to headline inflation
Source: Marshall (2002: 15) and Jonas & Mishkin (2003: 24)

At the outset of inflation targeting, the CNB noted the obstacles that lay ahead. These included institutional rigidities, cost pressures from regulated prices and rigid inflation expectations coupled with political uncertainties (CNB, 1998: 2). However, the stress tests lay in other areas. According to Jonas and Mishkin (2003: 24-26) inflation was rising rapidly when the CNB launched inflation targeting, but the economy was also slipping into a recession. The expected stronger growth for 1998 and 2000 did not materialise and when a major banking crisis occurred in 1997-98, economic activity declined and resulted in a more rapid disinflation than envisaged by the CNB's inflation targets and forecasts. This was coupled with the 1997/1998 international financial crises and weak global economic activity which contributed to falling commodity and energy prices.

Jonas & Mishkin (2003: 24) note that other structural shocks also contributed to the lower than projected inflation such as the continuing unexpected decline in food prices in 1998 and 1999. The CNB ascribes the undershooting of the 1998 target to falling global prices of raw materials and the local currency's, the koruna's, appreciation. Without these factors, the *Inflation Report* of January 1999 (1999: 1) notes that the targeted inflation measure (net inflation) would have been 2 to 3 percentage points higher rather than 3,8 percentage points below the floor of the target range.

Jonas & Mishkin (2003: 16) argue that only considering the Czech Republic's success in hitting the inflation targets may be too narrow a perspective for assessing the performance of inflation targeting. They observe that the main purpose of the inflation targeting framework for transition economies is to allow them to reduce inflation to a level qualifying them for European Monetary Union (EMU) membership. Evaluated from this perspective, these countries' preliminary inflation targeting experience should be judged more positively, as Jonas & Mishkin (2003) argue.

Judged from this perspective, the CNB was successful in that the Czech Republic became a new member state of the European Union (EU) on 1 May 2004. As a result the CNB was integrated into the European System of Central Banks (ESCB) although the euro was not immediately adopted (European Central Bank, 2004).

Prior to EU membership the CNB had gradually decreasing inflation targets and from 1999 onwards inflation was contained below 5 per cent. By the time the Czech Republic became a member of the EU, inflation had, therefore, dropped to levels compatible with the EU's definition of price stability (Frait, 2004: 7). The level for the harmonised index of consumer prices (HICP) is below, but close to, 2 per cent.

5.3.5 Poland

Poland was the second transition country to adopt inflation targeting, after the Czech Republic. At the time Poland announced the introduction of inflation targeting, the country still had in place an exchange rate band. It was only in April 2000 that the band was changed to a managed float. Unlike the Czech Republic, the National Bank of Poland (NBP) did not introduce an escape clause or conditions under which missing the target would be justified. Similar to the Czech Republic, Poland’s initial experience with inflation targeting was difficult, to say the least.

The NBP met the targets for the broad CPI index for the first year, 1998, and missed the next three years’ targets, as can be seen in Table 12. According to the NBP’s *Inflation Report* of 1999 (NBP, 1999: 138), the main stress tests to the framework were an increase in world oil prices, an increase in food prices as a result of official intervention in the market for agricultural goods and the relaxation in monetary policy in January following a series of gradual cuts in late 1998. The NBP dropped interest rates, somewhat prematurely in hindsight, following a rapid decrease in inflation during 1998. The NBP (1999: 145) noted its concerns that the persisting high inflation of 1999 would foster higher inflation expectations.

Table 12: Poland’s early experience under inflation targeting

Year	**Target (Headline CPI)**	**Outcome**	**Stress tests**
1998	<9.5%	8.6%	
1999	8 – 8.5% changed to 6.6 – 7.8%	9.8%	Weakening currency towards the second half of the year; crawling peg
2000	5.4 – 6.8%	8.5%	Food & oil price rise; managed float
2001	<4%	3.6%	Collapse in domestic demand

Sources: Marshall (2002: 15) and Mishkin & Schmidt-Hebbel (2001)

Fiscal policy in 1999 was also more expansionary than the NBP expected, and this further fuelled domestic demand. The NBP tightened monetary policy significantly and it kept monetary policy tight even when inflation began to fall in late 2000 and 2001. The tight monetary policy caused tension between the NBP and the government, which threatened at the end of 2001 to reduce the central bank’s independence.

Coupled with missing the targets in the initial years, inflation became increasingly unstable (Jonas & Mishkin, 2003: 24). After declining rapidly from 17.8 per cent at the beginning of 1997 to 5.6 per cent in February 1999, it rose again to 11.6 per cent in July 2000, and fell again to 0.8 per cent in December 2002. Jonas & Mishkin (2003: 23) note that these repeated large deviations of inflation from the inflation target appeared to suggest that inflation targeting was not very successful in Poland.

However, the mere fact that Poland, similar to the Czech Republic, gained membership of the EU on 1 May 2004 is a measure of success in containing inflation. Indeed, inflation fell from double-digit figures in 1997 to an annual level of 1.9 per cent in 2002 and is currently around the 4 per cent mark (NBP, 2005).

5.3.6 New Zealand

On the whole, New Zealand's early experience was far less turbulent than some emerging-market countries that adopted the inflation targeting framework almost a decade after this pioneer. According to Brash (1999) and Archer (1995: 246) the Reserve Bank of New Zealand Act 1989 which was enacted law on 1 February 1990 set the first Policy Targets Agreement at 0 to 2 per cent to be achieved before the end of 1992. The targeted measure is the annual consumer price index inflation rate which has to fall within the target band at all times, barring exceptional circumstances where shocks occur outside the control of monetary policy.

New Zealand succeeded in lowering its inflation rate to below that of the OECD countries. Since 1992 the CPI inflation rate averaged 2 per cent per annum, as against an average of 12 per cent per annum in the 1970s and 1980s (Bollard, 2003). It was only in the mid-1990s that New Zealand overshot the target when the central bank underestimated the strength of the economy and inflationary pressures. Brash (1999) notes that the 0 to 2 per cent target was reached by the end of 1991.The targets were exceeded by 0.2 per cent in the year to June 1995 as a result of a spike in fruit and vegetable prices. Inflation returned to within the target range for six months and then remained above the target band during 1996. The target band was subsequently widened to 0 to 3 per cent in December 1996.

The current target band is 1 to 3 per cent which was set in the Policy Targets Agreement 2002. In the past three years New Zealand's CPI was 2.7 per cent, 1.6 per cent and 2.7 per cent in the years to December for 2002, 2003 and 2004 respectively (RBNZ, 2005).

Over the years there have been numerous changes to the inflation targets themselves as well as the measurement thereof. Initially the Policy Targets Agreement (PTA) of March 1990 (RBNZ, 1990) defined price stability as an achievement of 0 to 2 per cent in headline CPI. However, the agreement made note of the fact that New Zealand's CPI differed to that of OECD countries in that it included both the purchase price of dwellings as well as the cost of mortgage finance. For this reason the central bank was tasked to devise a more appropriate measure. However, over the next couple of years the Reserve Bank of New Zealand (RBNZ) simply used the All Groups CPI and published a separate housing-adjusted CPI (RBNZ, 1990a). The target band was altered to 0 to 3 per cent (RBNZ, 1996). A year later, in 1997, the targeted measure was altered to the All Groups CPI excluding credit services, the so-called CPIX (RBNZ, 1997) and was then changed back again in the subsequent Policy Targets Agreements of 1999 and 2002.

5.4 Comparison with South Africa

5.4.1 Stress tests and responses

Israel faced a confluence of stress tests in its third year of inflation targeting, similar to South Africa's early challenges. The sources of Israel's stress tests were increases in housing prices, and fruit and vegetable prices which led to a large deviation from the target. However, unlike the SARB, the Israeli authorities saw fit to tighten monetary policy decisively. The underlying reason for this decision was a result of expansionary fiscal policy, demand pressures and a rise in inflation expectations

Comparable to South Africa, Israel's experience shows that a supportive context is important to some degree for the success of an inflation targeting framework. Israel was similar to South Africa in that it faced a government policy which was contrary to the inflation targeting principles in terms of high increases in administered prices and wage settlements. Administered prices, in both Israel and South Africa, constitute a large proportion of the inflation basket. However, some buy-in was obtained from both governments after which the increases in administered prices began to coincide with the inflation targets.

It appears that the exchange rate problem exists whether in the form of a floating exchange rate or a crawling band. Israel's experience shows the problems of basing monetary policy on dual anchors. As Leiderman & Bufman (1999: 73) observe, the level of interest rates necessary to achieve the inflation target may differ from the level needed to sustain the given currency band. This can also create credibility issues. South Africa's experience with a very volatile floating exchange rate shows that an unambiguous response to exchange rate pressures is necessary to ensure that all stakeholders are certain about what to expect from the central bank within the inflation targeting framework.

Brazil is very similar to South Africa in terms of its early experience of inflation targeting. Like South Africa, Brazil has a floating exchange rate regime and sound fiscal policy. Brazil faced numerous stress tests in the early years, including high international oil prices and a 39 per cent currency depreciation. Brazil also faced rigidities in its administered prices (referred to as backward-looking prices in Table 9) similar to South Africa. Interestingly most of Brazil's policy reactions to these initial shocks were to reduce interest rates or keep them the same, rather than to respond to shocks that were clearly outside of the control of monetary policy, mirroring the consensus that monetary policy should concern itself with second-round effects.

On balance and when viewed in the context of the stress tests Brazil was subject to, it appears that Brazil was more successful than most emerging markets in containing the effects of the stress tests. As Minella et al. (2003) note the Brazilian central bank concentrated on inflation expectations and sought to neutralise the second-round effects of the shocks. It is often said in central banking circles that central banking is more an art than a science, which may explain why Brazil weathered the storm so well when compared to other emerging market countries.

Similar to Brazil, Chile's experience appears fairly benign in the face of stress tests in the form of expansionary government policies and the oil price rise associated with the Gulf War. Given the gradual nature of Chile's inflation targeting framework, it is difficult to compare it with other countries. The country's initial targets were more akin to official inflation projections. However, the gradualist nature of the framework served the country well with lower inflation expectations being entrenched.

It can be argued that the SARB, for all intents and purposes, also followed a gradualist approach. The SARB "indicated" in March 1998 a range of 1 to 5 per cent as an inflation objective which would be taken into account when monetary policy was formulated (Casteleijn, 1999: 65; see page 28 of this document). However, in the absence of a formal inflation targeting framework, the SARB lacked the transparency and communication necessary to educate the public about this approach and therefore still battled with high inflation expectations when inflation targeting was officially adopted. It was only with the official adoption of inflation targeting that the SARB brought its communication strategy and institutional arrangements in line with the requirements of an inflation targeting framework.

The Czech Republic's and Poland's experiences with inflation targeting were difficult from the start. The Czech Republic's insufficient experience with inflation targeting led to overreaction on the part of the monetary authorities. Although questions were raised about South Africa's depth of experience, this does not seem to be an issue when the SARB's early performance is assessed.

Like South Africa, both Poland and the Czech Republic faced long-term obstacles in the form of rigid administered prices and rigid inflation expectations. Jonas & Mishkin (2003: 23) point out that after a period of high inflation, economic agents formulate their inflationary expectations on the basis of past experiences. This is very similar to the South African problem where the monetary authorities struggled to instil a forward-looking decision-making process in economic agents in the various sectors of the economy.

The key difference with South Africa is that the Czech Republic undershot its targets while South Africa overshot its targets. Still, as noted, an undershoot is as serious as an overshoot. The early stress tests to the Czech framework were almost diametrically opposed to South Africa in the form of falling food prices and falling commodity prices. South Africa, by contrast, faced rising food prices and a spike in oil prices as well as the long-term obstacles of high wage settlements and administered prices. However, Poland's stress tests in 2000 concerned rising oil and food prices, mirroring South Africa's experience in 2002.

Both Poland and the Czech Republic tightened monetary policy decisively in the face of the early stress tests. In Poland this caused tension with the government. The Czech Republic was unfortunate in that it overestimated the strength of the economy.

Once again it is emphasised that judging the performance of these countries solely on the basis of whether they achieved the targets is too narrow a perspective. The main purpose of inflation targeting in Poland and the Czech Republic was not only to hit the targets but to bring inflation down to a level acceptable for EU membership, which they succeeded in doing.

5.4.2 Institutional and policy adjustments

Although the central banks in this study all conform to the general principles of transparency and accountability, institutional and policy adjustments to the inflation targeting frameworks do not appear to be unusual. Some countries adjusted their frameworks and procedures when they faced continual challenges to their inflation targeting frameworks. Even when in benign conditions, small refinements are not unusual simply as a result of the changing economic conditions within which the inflation targeting framework operates. Sherwin (1999: 8) notes of New Zealand that as the pioneer of inflation targeting, “it would have been a surprise if all aspects were ‘right’ from day one. Perhaps more importantly, even if the framework had been conceived immaculately, the environment in which we operate today is not the same as that applying a decade earlier. Some degree of adaptation was necessary simply to meet those changing circumstances.”

Although New Zealand’s early experience was a work in progress, most of the major changes occurred after the initial years of inflation targeting. Aside from the initial uncertainty about the targeted measure – whether it should be headline CPI or some underlying measure – the first major change was the widening of the inflation target range from 0 to 2 per cent to 0 to 3 per cent in December 1996. This occurred after the election of a coalition government (Schaechter et al., 2000: 51). The range was changed because of the public perception that the previous range was too narrow and therefore lacked credibility.

Many other countries have made changes to the width of their targets as they consolidated their inflation targeting experience. During Israel’s first three years very narrow target ranges or point targets were set in order to focus expectations (Schaechter et al., 2000: 50). After the 1994 inflation target was exceeded by 650 basis points the point target was replaced by target ranges of between 200 and 300 basis points wide without impacting on inflation expectations. In the Czech Republic a 1 percentage point band was targeted in 1998 and 1999, but from 2000 the band was widened to 2 percentage points. This decision was driven by the accuracy with which the Bank thought it could achieve the targets as well as the historic volatility of the targeted net inflation measure. Similarly, South Africa’s target band was set at 3 to 5 per cent for the years 2004 and 2005 but then widened after difficulties were experienced in meeting the targets in 2002.

The CNB also changed the target measure from net inflation to headline CPI from April 2001 onwards because the Bank contended that headline CPI reflected price developments more comprehensively and was more relevant for economic decision-making. However, the CNB pointed out that there were risks to targeting headline CPI, which were due mainly to the uncertainty about the development of regulated prices and the effects of changes in administered prices.

Another major area of adjustment is the procedure to deal with shocks or unexpected events that make attaining the targets difficult. Towards the end of 1998, the CNB introduced “exceptions” that could justify missing an inflation target. These are exceptional and unpredictable supply-side factors outside of the CNB’s sphere of responsibility which cause actual inflation to deviate from the inflation target. They included large unexpected movements in commodity prices and the exchange rate, as well as natural disasters and other events that cause price shocks (Jonas & Mishkin, 2003: 9).

South Africa’s escape clause, which was later changed to an explanation clause, is similar in that it is confined to unanticipated extraordinary events that are outside the influence of monetary policy. These include a sharp rise in oil prices, drought and exchange rate movements. The RBNZ, similarly, changed its approach to dealing with external shocks and extended the policy horizon from 4 quarters to a 6 to 8 quarter timeframe (Sherwin, 1999). New Zealand’s caveats as provided for in the Policy Targets Agreements are, by its own admission, unusual when compared with other countries (Scrimgeour, 2002: 77). The caveats, as contained in the 1999 PTA are a non-exhaustive list of specific circumstances in which breaches may occur. However, the RBNZ’s caveats have changed over the years to include a variety of things from a provision to renegotiate the targets on the part of the governor with the finance minister in the face of a breach, to an acknowledgement that the bank should focus on medium-term inflation developments which may be obscured temporarily by “unusual events”.

Brazil appears to be a slightly different case to the other emerging-market economies that experienced shocks during the initial years of inflation targeting. In spite of the raft of difficulties it faced within the first 18 months under the new framework, the framework did not really evolve as such. However, when Brazil experiences a shock its central bank is permitted to use an adjusted target when it can no longer aim at the previous target. On the whole, the Brazilian central bank appears to have been successful in addressing the continued assaults on its inflation targeting framework with firm resolve and commitment rather than through gradual refinements of the framework.

A further area of improvement concerns the pressure that wage settlements at times bring to bear on meeting the inflation targets. Given this concern, the CNB initiated meetings with trade union representatives and employees in order to clarify its inflation expectations going forward and to reduce inflation expectations. Similarly, senior officials at the SARB engage in discussions at public forums with a range of stakeholders, including trade unions. In line with this the SARB Governor has also made pointed statements about unacceptably high wage settlements in South Africa.

From the above discussion it is reasonable to conclude that the changes to South Africa’s framework and institutional procedures should not be deemed a result of bad planning or conceptualisation but a natural process of establishing the best approach for the prevailing climate.

5.4.3 Credibility

Breaches of the inflation target can impair a central bank’s credibility, regardless of whether the breach is above the inflation target or below.

Schaechter et al. (2000: 27) contend that breaches of the floor or ceiling require decisive action from monetary authorities and that both are equally serious. Breaches below the target require a swift response in order to prevent deflation and, employment and output losses. Breaches of the ceiling require strong action to maintain credibility, especially by emerging-market countries. However, damage to credibility can be contained if the central bank provides a firm but transparent policy response.

As can be inferred from the discussion above, there are some commentators who believe that the success of the inflation targeting experience should not be based solely on the success in meeting the targets but also on the lowering of inflation expectations and the credibility of the process. Although credibility is built by meeting the targets, decisive action by a central bank, as in the Brazilian case, would appear to work just as effectively.

From the various country experiences, it can be seen that a number of factors other than achieving the inflation target impinge on credibility as well. Supportive government policy is key to both the credibility of the process as well as to the success in meeting the targets. In Israel's case, Ben-Bassat (1995: 34) notes there is no doubt that "cooperation between the government and the Bank of Israel in attaining the inflation target increases policy efficiency, has credibility and makes its achievement more likely." For example, Ben-Bassat (1995) asserts that the public-service wage rise impaired the credibility of the inflation target in Israel. Similarly, South Africa's inertial inflation expectations have been due, in part, to the persistently high wage settlements as well as high increases in administered prices.

Although disinflation in Israel was facilitated by improvements in productivity and fiscal consolidation, Schaechter et al. (2000) note that the length of the disinflation period in Israel reflected the limited degree of public support "for an active programme to reduce inflation to single-digit levels if that programme meant incurring real costs in terms of lost output or higher unemployment… Consequently, monetary policy aimed to encourage more forward looking behaviour on the part of wage and price-setters and a move away from indexation" (Schaechter et al., 2000: 17). South Africa was faced with a similar problem in the form of backward-looking wage settlements.

By comparing the inflation target with expected inflation and the yield gap between unindexed and CPI-indexed bonds, Ben-Bassat (1995: 40) comes to the conclusion that for most of the first three years of inflation targeting in Israel the targets were not credible. Ben-Bassat (1995: 41) offers as the reason the fact that the unemployment target (of the government) and macroeconomic policy in 1994 were not consistent with the inflation target. However, in a sense this was to be expected, at least initially, given the policy conflict (Leiderman & Bufman, 1999) due to the dual anchors for monetary policy and the central bank's gradual commitment to inflation targeting.

Building credibility in Brazil was a fundamental task for the central bank implementing an inflation targeting framework. Minella et al. (2003: 4) note two necessary conditions to guarantee that inflation expectations remain under control. Firstly, monetary policy needs to be consistent with the inflation targeting framework. Secondly, clear communication with the public is necessary for controlling inflation expectations. They assert (2003: 15) "It is important that private agents understand why actual inflation was above the target and how monetary policy is being conducted in order to drive inflation back to the target."

On the first point, the policy of the Brazilian monetary authorities was to accommodate the first-round effects of supply and cost-push shocks and to "neutralise" the second-round effects. These actions are similar to the actions of South Africa and various other central banks and coincide with international consensus on the issue. Unlike the SARB, Brazil's central bank uses an adjusted target when in a situation of shocks it can no longer aim for the previous target. However, Minella et al. (2003) note that there is a credibility loss resulting from the target change but there is a consequent gain in terms of transparency and communication.

On the second point, communication is a difficult issue for the SARB and just how transparent a central bank can be is still a question it grapples with. Communication is the one area where South Africa fails. Although there is a comprehensive programme of stakeholder interactions, public forums and meetings, speeches by the governors and televised press conferences, there appears to be some ambivalence on certain issues. The one is the use of the escape clause or explanation clause as it is now known. The second is some ambiguity regarding how to address currency depreciations as occurred in 2001. A silent central bank simply fuels speculation and panic, as was seen in 2001.

There are some who hold the view that missing the inflation targets as well as too many modifications of the targets could jeopardise the credibility of a central bank. In respect of Poland, Horská (2001: 23) held the view that missing the inflation targets for 2001 would be very negative for the credibility of monetary policy and the prospects for meeting the long-run inflation target for the year 2003. She also argued against too many modifications of the inflation targeting framework, saying that overly frequent modifications could endanger the NBP's credibility. However, from the experience of other countries and judging from the literature, frequent modifications do not appear to affect credibility. What appears to be more important is a steadfast commitment by the bank to the principles of inflation targeting and clear communication with the public.

New Zealand is somewhat different to the other countries in that a breach of the target can cause the Governor to be removed from his post. The seriousness of this instils public confidence in the framework (Brash, 1999). Changes to the Policy Targets Agreement must be made public immediately. As a result Brash (1999) notes that the inflation targeting framework helped to reduce inflation expectations and increase the credibility of the RBNZ's commitment to low inflation.

Although this stipulation has never been invoked, on the two occasions during the first decade when inflation slipped outside of the range in 1995 and 1996, the Finance Minister formally asked the directors of the Bank whether the Governor's performance under the agreed framework had been adequate.

5.5 Summary

What becomes clear from the survey presented in this Chapter is that South Africa is not alone in experiencing early challenges to its inflation targeting framework. What is also clear is that the early challenges do not appear to be detrimental to the success of the inflation targeting frameworks in the long term.

Inflation targeting in emerging-market economies appears to be a challenging task compared with the developed countries whose job is largely to maintain low inflation levels. The emerging-market countries surveyed, Israel, Poland, the Czech Republic, Chile and Brazil, all experienced some sort of shock causing them to miss the targets at some point during the first three years of implementing the inflation targeting framework. There are numerous references in the literature to the problems encountered by emerging markets when attempting to implement inflation targeting. Minella et al. (2003: 4) note: "The conduct of monetary policy has to build credibility and reduce inflation rate levels, and simultaneously deal with a greater vulnerability to shocks." Similarly Fraga et al. (2003: 3) note that emerging markets under inflation targeting have to break the "vicious circle" of low credibility and more fragile institutions on the one hand and on the other hand higher macroeconomic instability and vulnerability to external shocks.

There appear to be common stress tests that the surveyed countries experienced. Related to the domestic socio-political and economic landscape is the problem of administered or government-controlled prices and public-sector wage increases. This problem was experienced by South Africa, Israel, and the Czech Republic. Although this factor in isolation has not appeared to cause a breach of the inflation targets, it is an obstacle and points to a lack of government support for the inflation targeting framework. Government support and buy-in is key to build the credibility of the process.

The other common stress tests to the framework have been rigid, backward-looking inflation expectations. This was a problem in South Africa and filtered into high public-sector wage settlements. The Czech Republic, Poland, and Brazil with its backward-looking prices, have all experienced this problem. A key lesson from this is that government support of the framework, and actions consistent with it, are necessary to build credibility for the framework. Secondly, there is consensus that inflation expectations will only gradually fall in line with the inflation targets once the monetary authorities have proved their intentions, capability and commitment to the targets. The lesson South Africa can learn from this is that building credibility is a process and takes time.

Externally, the countries surveyed have been faced with currency depreciations and oil price spikes. The commonly accepted practice is that central banks should stick to the fundamentals of inflation targeting and use monetary policy to prevent the second-round effects of the various shocks from feeding into other prices in the economy. Virtually all the countries surveyed have adopted this strategy, in line with international consensus on the subject. However, there is the consequent problem of identifying and anticipating the second-round effects.

While credibility is important in the initial stages of inflation targeting, a key instrument to establish credibility is communication. This is especially so in the face of large shocks and potentially large deviations from the target (Minella et al., 2003). However, the SARB's insistence in the face of the large-scale depreciation of the rand in 2001 that the Bank had not yet missed the targets, despite all indications that it would do so, was short-sighted. The only explanation was that the central bank feared losing even more credibility.

South Africa is not alone in modifying and refining the operational and institutional arrangements of its inflation targeting framework. New Zealand, the pioneer of inflation targeting, made several important changes to its framework as circumstances evolved. It widened the range of the target and extended the policy horizon. Given that there was no international experience that New Zealand could draw upon, the changes made were possibly more easily accepted. Changes to the target band appear common from the foregoing analysis, especially when the countries are facing a shock that could cause a target breach. Brazil, the Czech Republic and South Africa have all altered or, as in Brazil's case, are able to adjust their targets in the face of significant shocks (see Section 5.4.1 "Stress tests and responses"). Although too frequent modifications might negatively impact on credibility, South Africa and the other countries seem to have emerged relatively unscathed on this score with relatively little criticism.

In conclusion it can be deduced that achieving the inflation targets is only part of the success of the inflation targeting framework. What appears to be equally important is the gradual convergence of inflation expectations with the inflation targets and the anchoring of these expectations. South Africa's early experience is not unusual when compared with the early experiences of Chile, Israel, Brazil, the Czech Republic, and Poland. New Zealand's experience differs in that its early years of inflation targeting implementation appear to be far less turbulent than that of the emerging-market countries surveyed. Consequently, there are no big differences in South Africa's reactions to the various shocks and obstacles that have so far arisen as challenges to the inflation targeting framework, that warrant concern.

6. Summary and key lessons

6.1 Introduction

This study explored the early experiences of a number of countries under an inflation targeting framework for monetary policy. The general purpose of the study was to determine how South Africa's early experience with the inflation targeting framework compares with the early experiences of five other emerging-market countries (Brazil, Chile, Israel, the Czech Republic and Poland) and one developed country (New Zealand). The experiences of these countries were compared along three dimensions: the stress tests the frameworks were subjected to and the monetary authorities' responses; the adjustments made to the frameworks, operational and institutional procedures (if any); and the credibility losses or gains as a result of the experiences. The problems of country comparisons were noted.

In order to arrive at a satisfactory conclusion to the problem a number of questions were explored. Firstly the theoretical basis of inflation targeting was analysed; secondly the nature of South Africa's framework was assessed to see how it conformed to general practices; thirdly South Africa's experience under the inflation targeting framework was assessed; and lastly South Africa's experience was compared with the experiences of the six countries under investigation.

6.2 Summary of findings

The inflation targeting framework for monetary policy gained popularity throughout the 1990s and the twenty-first century. It is based on a public announcement of inflation targets; price stability as the primary goal of monetary policy; an information-inclusive strategy; and increased transparency and accountability. Despite the popularity of the framework there is some scepticism about the value of the inflation targeting policy. Some commentators claim that the framework remains untested because global inflation has been fairly benign since the rise of the framework.

From the vast amount of literature on the subject, however, it is clear that the introduction of inflation targeting leads to positive changes in the conduct of monetary policy for the countries that adopt the framework. One of the crucial positive changes are the enhanced transparency and accountability that the framework imposes on central banks. In many ways it also makes the central bank’s job more difficult in that broad political and public consensus and a supportive context are necessary to ensure, at least partially, the success of the framework. This has important implications for the credibility of the process, a key ingredient for the success of the framework.

It is also clear that emerging-market countries appear to face more rigorous challenges than their more developed counterparts when conducting monetary policy within an inflation targeting framework. Many emerging-market countries face structural adjustments, extreme exchange rate volatility and have more open economies than their industrialised counterparts. This serves to heighten the uncertainty of the environments in which they operate.

South Africa adopted the inflation targeting framework a decade after New Zealand pioneered the framework. Inflation was already on a downward trend and South Africa met the preconditions for adopting the framework with the existence of well-developed financial markets and the SARB having the necessary formal independence, skills and resources. A number of institutional changes were brought about and the SARB is, at present, a much more transparent institution.

South Africa’s inflation targeting framework generally conforms to accepted international practices in terms of framework design and the institutional arrangements necessary to implement such a framework. For instance, the SARB established a Monetary Policy Committee which makes monetary policy decisions, it publishes a semi-annual inflation report (the *Monetary Policy Review*) and the Governor reports quarterly to parliament. In adopting an inflation targeting framework, the SARB made great strides in transforming itself into a much more transparent institution. The SARB's disappointing performance in the early years was clearly not due to a failure in the design of the framework or errors in its implementation.

From the outset, South Africa faced challenges to its new policy framework. The combined stress tests of the rapid depreciation of the rand and a spike in oil and food prices caused the SARB to miss the target in the first two years. Two long-run obstacles in the form of high wage settlements and high rises in administered or government-controlled prices contributed to inflation inertia. In all instances commentators observe that the SARB acted flexibly and wisely to the systemic shocks.

Compared with the other countries' experience, South Africa is not alone in experiencing early challenges and stress tests to its inflation targeting framework. Broadly speaking, the initial years of many emerging-market economies' experience with inflation targeting has been fraught with difficulty for the reasons explored – that many are in transition or undergoing structural change, that many are more open than their industrialised counterparts and that as a group they are more vulnerable to external economic shocks and currency crises. All countries surveyed, except for New Zealand, overshot or undershot their targets at least once within the first three years.

There are some commonalities in the stress tests and long-run obstacles experienced by the countries surveyed. Administered prices and public-sector wage increases were common problems in Israel, the Czech Republic, Brazil and South Africa. Rigid inflation expectations are also a common problem and are linked to the credibility of the process. Among the stress tests, oil price shocks, high food price rises and currency depreciations were common challenges in Brazil, Israel and South Africa. In response to these shocks all the central banks surveyed attempted to prevent the second-round effects of the shocks from becoming entrenched in general prices, in line with the international consensus on the subject. However, as noted, central banking is more of an art than a science and the appropriateness of the monetary policy response is often only apparent in hindsight.

South Africa was, perhaps, unfortunate in the timing of its introduction of inflation targeting. The SARB had to contend with immediate challenges to its inflation targeting framework unlike some other countries that experienced a relatively stable international climate when they introduced their frameworks. However, against the backdrop of a global decline in inflation, the SARB's performance was disappointing. If South Africa was unfortunate in the timing of its introduction of inflation targeting then so too were the other emerging-market countries surveyed that experienced target breaches in their early years.

As a result of its early experience the SARB made various changes along the way to the framework and operational procedures. The narrower target for 2004 and 2005 was widened; the target was re-specified as a continuous target rather than a calendar-year average; and the escape clause was renamed an explanation clause. Other changes were made to the composition of the MPC and the timing of the MPC meetings.

South Africa is not alone in refining its framework and the procedures set to achieve the inflation targets. As Mishkin (2000) notes, the framework does need continual refinement as experience provides new insights. New Zealand, the Czech Republic and Israel all made adjustments to their frameworks in the early years. Changes to the target band are common, especially in the face of a large shock. Although too many modifications could negatively impact on credibility, South Africa emerged relatively unscathed on this score.

Credibility is a key ingredient for the success of inflation targeting. A public that trusts the central bank's ability and commitment to the inflation targets impinges on inflation expectations and makes the central bank's job easier. Almost every factor that impacts on the inflation targeting framework will potentially have an effect on credibility. The SARB's credibility was not fully established in the early years of inflation targeting, similar to the experience of its emerging-market peers. Early problems such as the lack of government support reflected in the high wage settlements and high rises in administered prices contributed to the problem. As noted, an unambiguous focus on inflation targeting and a sophisticated communication strategy are key to building credibility.

The issue of credibility is closely associated with the issues of transparency and accountability. To be credible, a central bank has to show that it is transparent and, therefore, accountable. Although insiders at the SARB contend it is among the most transparent in the world, some commentators suggest the SARB could make further institutional and technical changes to ensure greater transparency. Suggestions include releasing details of the econometric models and forecasts.

In conclusion it can be seen that South Africa's initial problems are not unusual when viewed within the context of the other emerging-market countries' experiences. The stress tests were unfortunate events outside of the control of monetary policy. Although the targets were breached in the early years, South Africa's performance should not be judged solely on the achievement of the inflation targets. As has been mentioned, this is a superficial judgement and ignores several other important developments. Among these are that, throughout its short experience with inflation targeting, the SARB has succeeded in obtaining some semblance of government support for the inflation targeting framework as indicated by the government's willingness to address administered price increases. Further, the inflation expectations of the labour, financial and public sector have, on the whole, been trending down towards the targeted band.

6.3 Key lessons

The key lessons to be gleaned from the survey are the following: firstly, the yardstick by which success is judged should not be solely whether the central bank achieves the targets. There are secondary considerations including whether a broad trend of disinflation was achieved; whether inflation expectations converge with the inflation targets; and whether the credibility of the central bank is enhanced. Further, the early hits or misses of the targets provide a valuable base for refinements and improvements to the framework.

The second lesson is that the key to building credibility is effective communication, which enhances the transparency of the framework and the accountability of the central bank. Central bank communication, especially in the face of large shocks which may cause a deviation from the target, should be regular and honest. Veiled communication or non-communication causes uncertainty and can exacerbate the initial problem. Connected to this point is that the central bank must exhibit a clear and unambiguous commitment to the inflation targeting process through its communication with the public. A multi-anchored approach, such as having dual targets for the currency and for inflation, makes the conduct of inflation targeting difficult and causes uncertainty about the focus of the central bank.

Thirdly, building credibility is a process and takes time. Inflation expectations are generally characterised by inertia and converge slowly with the targets. It is a process whereby the central bank needs to build up a track record to earn credibility. An important factor is that the various elements of society, including the government, the public, the labour sector, business and the financial markets should eventually demonstrate an acceptance and belief that inflation targeting is an appropriate goal for monetary policy.

The fourth key lesson is associated with the volatility which characterises the modern global economy. Emerging-market countries are often more open economies than their developed country counterparts and are thus more vulnerable to shocks and instability. This must be taken into account and the difficulties of conducting an inflation targeting policy under these conditions should be clearly communicated. Under these circumstances, monetary policy must remain focused on the primary goal and must act to prevent the second-round effects of the shocks from impacting on the general level of prices.

The final broad lesson is that a supportive context is necessary for the success of the inflation targeting framework. Government policies, including wage settlements and government-controlled prices, must be aligned with the inflation targeting policy in order to provide a supportive context and enhance the credibility of the policy.

6.4 Further research opportunities

This study explored the early years of inflation targeting implementation in various countries. The methodology followed forms a good basis for further research into these countries' experiences once they have become mature inflation targeters. This specifically relates to South Africa, whose experience with inflation targeting implementation is currently in its fifth year. Allowing South Africa's experience to mature would afford the researcher a broader view of the process. Further, the emphasis of the methodology can be altered somewhat and expanded upon to provide a deeper view of the different strands of the inflation targeting experience in the various countries.

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