A REVIEW OF INFLATION TARGETING AS A FRAMEWORK FOR MONETARY POLICY IN SOUTH AFRICA

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1. INTRODUCTION

"We call on government and the Reserve Bank to urgently review our disastrous monetary policy interventions. Our monetary policy approach must take into consideration our primary economic challenges of radically reducing unemployment and poverty!" (COSATU 2007)

COSATU has been against inflation targeting (IT) since its inception in 2000. The union claims that this regime is not appropriate for a developing country like South Africa (SA), and that monetary policy should rather target a real variable like employment. Although few would disagree that SA's high unemployment rate is one of the country's most pressing issues (Kingdon & Knight 2004: 391), a major flaw in the argument that a real variable should be targeted, is that monetary policy is not able to influence the level of economic activity in the long-run (Friedman 1968: 9-10). In fact, the only role that the monetary authorities can play in reducing unemployment is by stabilising inflation and the output-gap (Van der Merwe 2004: 11-12).

The purpose of this essay is to show that IT is the appropriate monetary policy framework for the country. This will be done in three steps; firstly, it will be demonstrated why the main goal for monetary policy should be the upkeep of a low and stable inflation rate, secondly, the success of the SARB's regime will be evaluated, and lastly, the possible macroeconomic consequences of an alternative regime will be considered.

The remainder of this essay will proceed as follows. The subsequent section considers the suitable role for monetary policy in an economy. This is followed by a review of the theoretical foundations of IT in section 3. The ensuing section appraises the SARB's execution of the regime, while section 5 considers employment targeting (ET) as alternative to IT. Section 6 concludes.

2. THE APPROPRIATE ROLE FOR MONETARY POLICY IN AN ECONOMY

"...monetary policy can prevent money itself from being a major source of economic disturbance" (Friedman 1968: 12).

There has been a long-lasting debate in the economic literature about the relationship between monetary expansion and unemployment. The origin of this debate can be traced back to 1958 when Phillips (1958: 290) noted the existence of a stable negative relationship between unemployment and wage inflation. This negative correlation was believed to be a causal relationship that policymakers could exploit in order to attain the desired levels of inflation and employment (Friedman 1977: 454). However, in the late 1960s and early 1970s, the supposedly stable relationship broke down (Romer 2006: 252). This was true empirically, as well as theoretically. The theoretical argument against a permanent trade-off between inflation and employment was contended by Friedman (1968) and Phelps (1968) in their natural rate hypothesis. They argued that it is impossible for nominal variables to have a permanent effect on real variables. Thus, "...the 'real' forces that determine the wealth of a nation are the capacities of its citizens, their industry and ingenuity, [and] the resources at their command..." (Friedman & Friedman 1980: 249).

The preceding discussion suggests that monetary policy should not be aimed at influencing the level of economic activity in a country, since this will create an inflation bias, i.e. an inflation rate that is higher than optimal, with no gain in output. The best contribution that monetary policy can make to long-run growth in a country is by ensuring stability in the general price-level.

Not only can inflation not succeed in increasing growth, it can actually be harmful to growth (Fischer *et al.* 2005: 290-293). One question that remains is why one should aim for a *low* inflation rate. The costs of hyperinflation are evident, but not only extreme levels of inflation are costly. Inflation lowers the return on money, which causes people "...to economize needlessly on the benefits offered by the use of money to conduct transactions" (Champ & Freeman 2001: 55). Inflation may also drain investments from abroad, since international financial markets use a country's inflation rate as an indication of

macroeconomic stability (Mohr 2008: 3). There is also evidence that suggests that inflation harms the poor the most, since they are ill-equipped to hedge against inflation (Agénor 2004: 363). In addition, inflation makes it difficult to distinguish between absolute and relative price changes, which may induce, for example, a firm to decide wrongly to increase its production (Du Plessis 2003: 35-36).

3. THE THEORETICAL FOUNDATIONS OF INFLATION TARGETING

3.1 The importance of a nominal anchor for monetary policy

Kydland and Prescott (1977) proved that a central bank aiming to maximise the 'social objective-function' would have an incentive to diverge from its strategy in the following period in order to increase output above its natural level. Assuming rational expectations, the public will anticipate this action by the central bank, and adjust their expectation of inflation accordingly. This leads to an inflation bias in the economy. Thus, the dynamic inconsistency of the central bank's strategy diminishes its credibility. One way to solve this problem is by credibly committing to an explicit rule, e.g. IT (Houben 2000: 42-46). This will contribute to an anchoring of inflation expectations.

3.2 Salient features of an inflation targeting regime

Du Plessis (2003: 147-149) lists six features of an IT regime. The first is the public announcement of an explicit numerical target. Secondly, an IT regime can only work in the absence of other nominal anchors, such as the exchange rate. Thirdly, the government must acknowledge the target. Fourthly, the central bank should make use of a forecast strategy. This is important since monetary policy affects inflation with a considerable lag. Consequently, an inflation forecast should be used as an intermediate target for monetary policy. The next feature is a wide-ranging communications strategy. This is necessary in order to increase the transparency and accountability of monetary policy. The last distinguishing feature is an increase in the accountability of the central bank. It should further be

stressed that low and stable inflation is not the central bank's only goal in an IT framework; output stability is also a key objective (Svensson 1999: 625).

3.3 Benefits of inflation targeting

3.3.1 Increased transparency

Geraats (2002: 533) defines central bank transparency as "...the absence of asymmetric information between monetary policy makers and other economic agents". Since increased transparency reduces the amount of uncertainty in the economy, it could increase the efficiency of the economy. For instance, transparency improves the ability of economic agents to infer the **rationale** for a policy change; consequently, they can respond in an appropriate manner, e.g. distinguish between demand- and supply shocks (Walsh 2006: 3). Another advantage of transparency is that it can elucidate the central bank's **intentions**, thereby anchoring inflation expectations and increasing the flexibility available to monetary authorities (Walsh 2006: 22). Transparency also increases the accountability of a central bank.

IT has the ability to increase the transparency of monetary policy, since both the ultimate and operational goal of monetary policy is low and steady inflation (Du Plessis 2003: 153). IT nations have all made notable improvements in the transparency of their policy-making (Haldane 1997: 28). Examples include the publishing of monetary policy reports, appearances before parliament, and an increased frequency of speeches by monetary policy committee members.

3.3.2 Increased accountability

Accountability is a function of the ability of agents to monitor the central bank (Walsh 2003: 845). An improvement in accountability can help to foster support for an independent central bank (Mishkin 2000: 106). Since IT involves the specification of an explicit numeric target, this obviously increases the ability of agents to monitor the central bank, thereby making it possible for the public to judge to what extent the central bank is succeeding in its goal (Du Plessis 2003: 153).

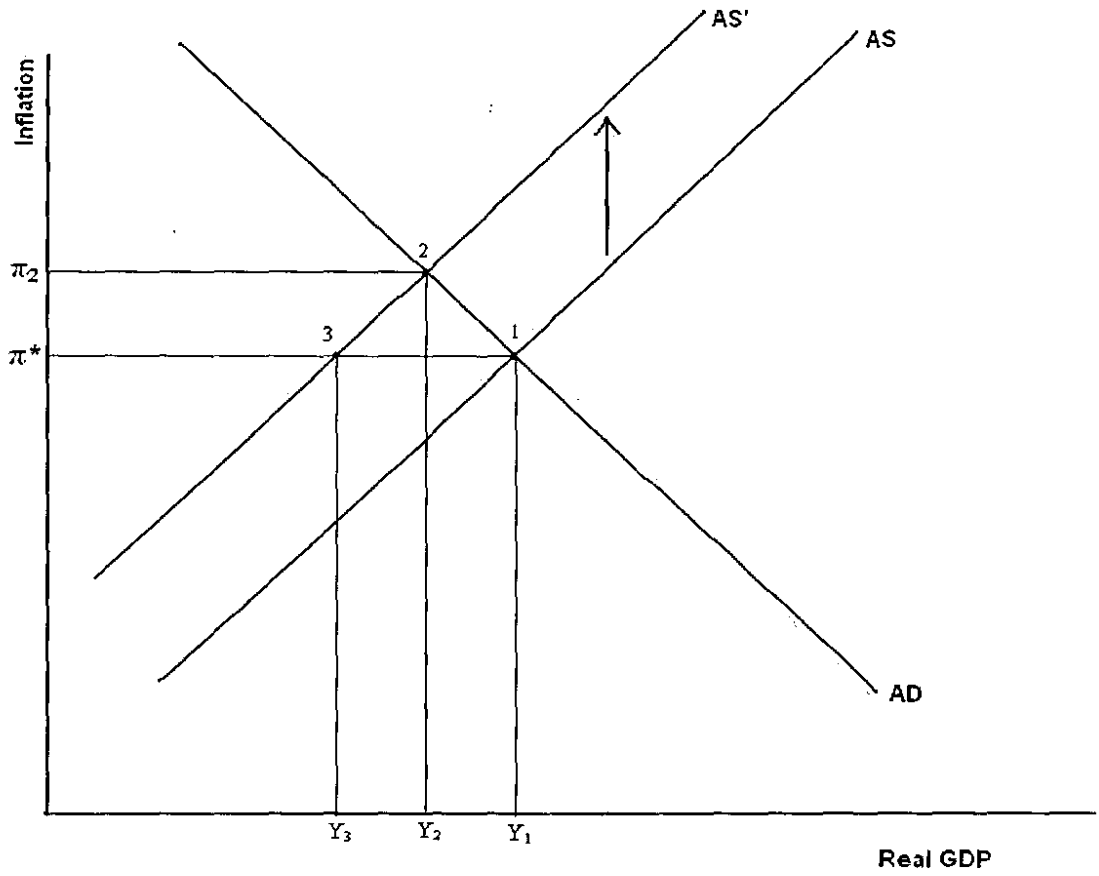
3.3.3 Improved coordination of policies

A successful IT regime requires an improved coordination of macroeconomic policies, in particular monetary- and fiscal policy (Mishkin 2000: 107). Subsequently, IT, if correctly implemented, can improve the effectiveness of monetary policy. This is evident from the following statement: "If the government stipulates an inflation target that it wants the central bank to deliver, it implicitly states that if fiscal policy is eased in a way that is inconsistent with that inflation target, the central bank will of necessity tighten monetary policy" (Brash quoted in Sterne 2001: 7).

3.3.4 Higher credibility

IT increases the credibility of the central bank by increasing transparency and accountability, and by improving coordination with other macroeconomic policies (Du Plessis 2003: 153). As noted in section 3.1, discretionary monetary policy is not credible; consequently, it leads to an inflation bias in the economy. The first advantage of attaining credibility is therefore the removal of this inflation bias. The second advantage is illustrated with the aid of an AD-AS framework. Figure 1 shows an economy that is initially in long-run equilibrium at point 1. Suppose there is an adverse supply shock in the economy, shifting AS up to AS'. In the absence of credibility, if π^* is the central bank's inflation target, they would have to increase the interest rate so that the economy ends up at point 3. If, however, the central bank is credible so that inflation expectations are fixed at π^*, the central bank need not do anything. They can keep interest rates unchanged, and wait for AS' to return to AS. As a result, the loss in output is less: (Y_1-Y_2) as opposed to (Y_1-Y_3).

Figure 1: The benefit of credibility



3.4 A brief response to some of the criticisms against inflation targeting

An often-heard statement is that IT is not a suitable monetary policy regime for a developing country. Mishkin (2008: 7-13) states that, as long as countries make the necessary institutional changes, such as developing strong monetary -, fiscal -, and financial institutions, *before* adopting IT, the framework can indeed be successful in lowering inflation and keeping it low by anchoring inflation expectations.

A common criticism of the IT regime in SA is that the SARB makes use of a 'blunt instrument', namely the short-term interest rate, to affect inflation. However, Ortiz and Sturzenegger (2008: 12) estimates a reaction rule for the SARB and finds that, in comparison with other emerging markets, the SARB puts a relatively lower weight on inflation. This might mean that interest rates are more effective

in SA than elsewhere. Furthermore, according to Du Plessis (2008), the SARB have behaved consistent with the Taylor-rule[1], and have not "chased the CPIX upwards".

4. A REVIEW OF INFLATION TARGETING IN SA

There are many problems one encounters when attempting to review a particular monetary policy regime. Du Plessis (2003: 192-196) stipulates three specific problems that arise. Firstly, the task is not one of determining whether IT has been a success *per se*, but whether it has been the best regime compared to what the counterfactual situation would have delivered. This counterfactual situation is, of course, never observed. Secondly, because of a complicated transmission mechanism, it is impossible to attribute changes in macroeconomic performance solely to the prevailing monetary policy regime. Lastly, exogenous shocks have a significant effect on the performance of the economy, thus further increasing the difficulty of linking macroeconomic performance with monetary policy decisions. Notwithstanding these problems, this section will attempt to review IT in SA.

4.1 Behaviour of macroeconomic variables

Figure 2 shows the evolution of the CPIX from 1998 to 2007. The CPIX was in the target range of 3-6% between 2003 and 2007. The substantial currency depreciation at the end of 2001 prevented the CPIX from approaching the target band sooner (Aron & Muellbauer 2007: 706). However, this should not be seen as a failure by the SARB, but instead as a confirmation that the Bank does not care solely about inflation, but also about output volatility, since interest rates were not raised excessively, as was done with the currency depreciation of 1997/1998. This response also shows that the SARB implements its regime with a forward-looking framework, as is appropriate. To get a better idea of the level of inflation before and after IT, figure 3 shows the evolution of the CPI from 1972 to 2007. A

[1]A simple Taylor-rule is of the form: $r=r^*+\pi_{t-1}+\alpha_1(Y - Y^*)+\alpha_2(\pi - \pi^*)$, where: r=repo rate, π_{t-1}=inflation in previous period, $(Y - Y^*)$=output gap, $(\pi - \pi^*)$=deviation of inflation from inflation target, r^*=equilibrium real interest rate, and α_1, α_2=parameters, with α_2 indicating how much the central bank cares for inflation volatility, relative to output volatility (Taylor 1993: 202).

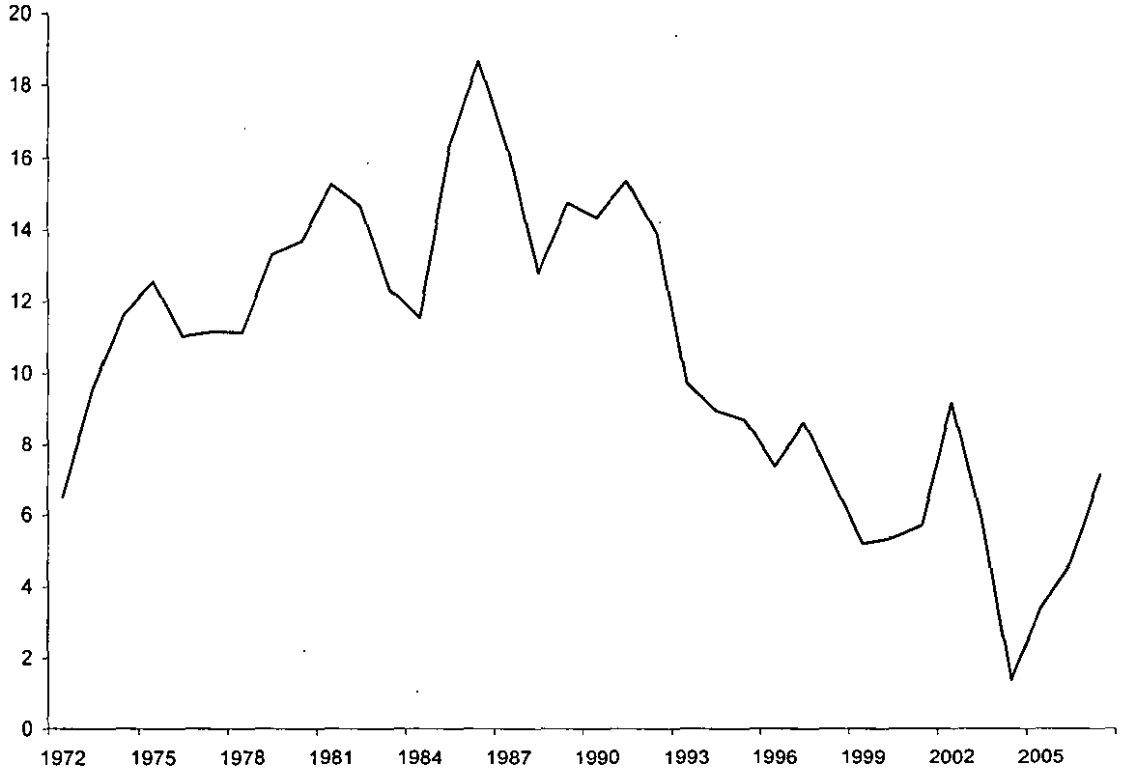
simple ordinary least squares regression confirmed that the CPI is statistically significantly lower with IT as the ruling monetary policy regime. Of course, as mentioned before, this does not imply causality.

Figure 2: CPIX, 1998 – 2007

Source: SARB (2009), own calculations

Note: The dashed lines show the CPIX ± one standard deviation.

Figure 3: CPI, 1972 – 2007



Source: SARB (2009), own calculations

Table 1 shows the evolution of various macroeconomic indicators from January 1981 to October 2008. Although inflation is much lower under IT, inflation volatility is higher. Furthermore, the depreciation of the currency is much less, whilst the volatility of changes in the exchange rate is higher. Further inspection also reveals a higher and less volatile real GDP growth rate. The real money market rate is lower in Mboweni's period than for Stals' period under the ANC, and higher than the other two periods. However, the low rates in the first two periods are due to the frequent occurrence of negative real interest rates, which is not desirable. Though these observations are indicative, one cannot attribute any improvement or deterioration of performance to a change in monetary policy without further analysis.

Table 1: Various macroeconomic indicators over different regimes

	Period			
Macro-variable	*1981M1 1989M7*	*1989M8 1994M3*	*1994M4 1999M7*	*1999M8 2008M10*
Change in nominal exchange rate (%)	-11.4	-5.7	-10.2	-0.8
Volatility of nominal exchange rate	15.6	6.4	7.6	19.3
Change in NEER (%)	-11.3	-3.9	-8	-0.3
Volatility of NEER	13.5	2	7.6	16.5
Change in REER (%)	-2.8	2.8	-4	-1.2
Volatility of REER	14.5	3.6	7.7	16.2
CPI (%)	14.7	12.3	7.5	5.8
Volatility of CPI	2.4	2.5	1.6	3.4
CPIX (%)	-	-	-	6.8
Volatility of CPIX	-	-	-	2.5
Money market rate (%)	14.5	15.5	14.6	9.0
Volatility of money market rate	4.2	3.7	2.6	1.9
Real money market rate (%)	-0.09	1.92	3.69	2.15
Volatility of real money market rate	5.04	2	3.36	2.04
Growth rate of real GDP (%)	1.8	-0.3	2.7	4.1
Volatility of growth rate	3.2	1.8	1.6	1.1

Source: SARB (2009) and IMF (2009)

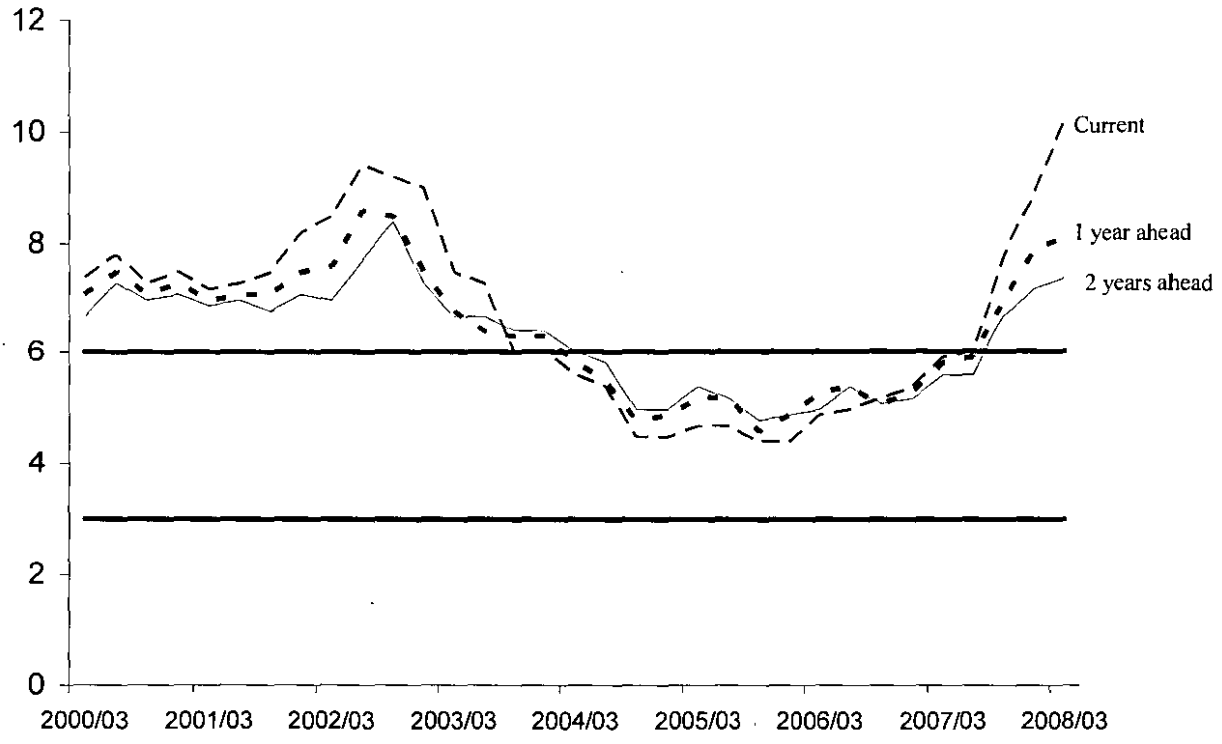
Notes: The first period (January 1981 – July 1989) is when De Kock was governor, the second period (August 1989 – March 1994) when Stals was governor under the National Party, the third period (April 1994 – July 1999) when Stals was governor under the ANC, and the fourth period (August 1999 – October 2008) is Mboweni's term as governor thus far (see Aron & Muellbauer 2007: 707). The changes in the various variables refer to the average percentage change over the entire period. The standard deviation of the variables over the entire period is used as a measure of volatility. All data are monthly, except for the growth rate of real GDP, which is quarterly. NEER = nominal effective exchange rate; REER = real effective exchange rate.

4.2 Credibility

A credible IT regime will be characterised by a convergence of inflation expectations to the inflation target (Aron & Muellbauer 2008: 16). The credibility of the SARB can thus be evaluated by examining the difference between inflation expectations and the inflation target. Figure 4 shows the evolution of the current -, one year ahead -, and 2 years ahead expectations of CPIX of trade union representatives, business representatives, and financial analysts (a simple average of the three groups' expectations).

Inflation expectations first came within the target band in the first quarter of 2004 and stayed there until the first quarter of 2008. However, from figure 5 it is clear that those agents that are supposed to be the best predictors of monetary policy outcomes had a much rosier outlook. The financial analysts' expectations of CPIX 2 years ahead were aligned with the target band as soon as the first quarter of 2000, and never left the band except for a brief period in 2002/2003. Thus, it would seem that the analysts' expectations are anchored, but the trade unions and business representatives appear to remain sceptical of the SARB's ability and/or commitment to keep inflation within the target band.

Figure 4: CPIX expectations of all surveyed participants



Source: SARB (2009)

Note: The CPIX expectations are a simple unweighted average of the expectations of trade union representatives, business representatives, and financial analysts.

Figure 5: CPIX expectations of financial analysts

Source: SARB (2009)

4.3 Transparency

Transparency can be measured by examining the amount, quality, and clarity of information supplied by a central bank. The clearer the central bank is about its intentions, and the better the bank explains its rationale for a decision, the less costly disinflation would be (see section 3.3.4). Eijffinger and Geraats (2006) identified different aspects of transparency and then devised an index of transparency based on these aspects. Aron and Muellbauer (2007: 715-716) calculated this index for SA for 2 periods, 1994 and 2004. They find that central bank transparency has improved from a score of 5 in 1994 to a score of 9 in 2004 (out of a possible 15). Because the SARB has since published its core model (see Ehlers *et al.* 2007), its score would now be 10, which is comparable to that of developed countries (Aron & Muellbauer 2008: 24).

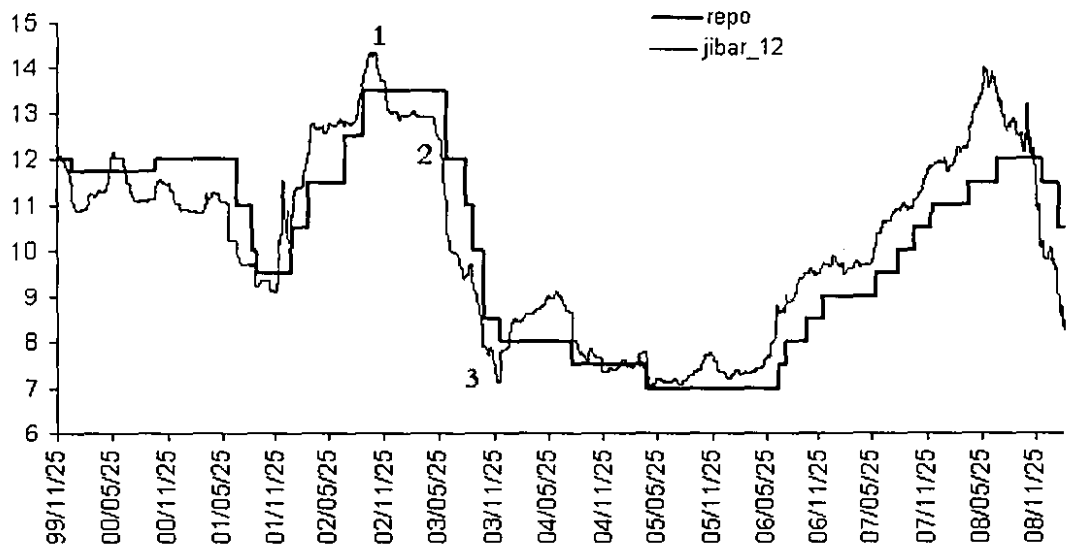
4.3.1 Predictability

"If markets are efficient, anticipated policy actions are already reflected in economic variables – markets respond only to unexpected policy actions." (Poole *et al.* 2002: 66)

It is postulated that an increase in central bank transparency would increase the predictability of monetary policy decisions. Thus, a further measure of determining whether transparency has increased under IT, is to examine whether the ability of market agents to anticipate interest rate decisions have improved. Figure 6, which shows the movements of the 12-month Johannesburg interbank agreed rate (JIBAR), reveals that the JIBAR moves in anticipation of interest rate decisions (see, for example, the movement from point 1 to 2, and 2 to 3). Yet, there still seems to be a relatively big adjustment on the day of the MPC-meeting.

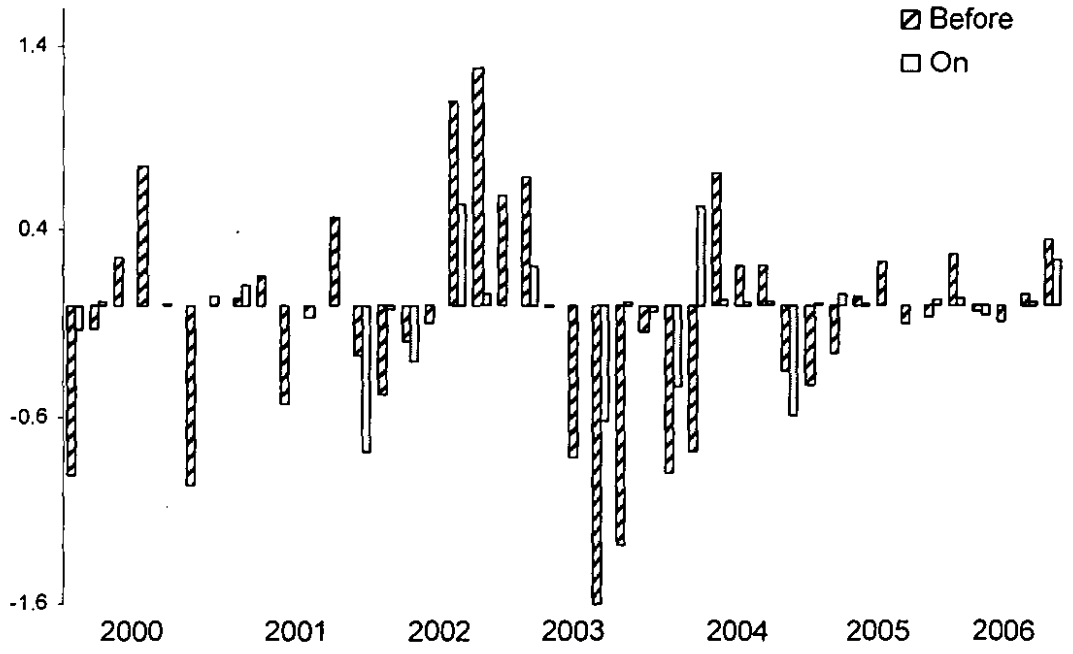
To get a better sense of the ability of the market to anticipate the SARB's decisions, figure 7 shows the movement of the 12-month JIBAR between, and on the days of MPC-meetings. In most cases, the bulk of the change in the JIBAR occurs between meetings; however, in some instances the movement on the day is actually bigger (e.g. in 2001 and 2004). Thus, although the transparency of the SARB has increased under IT (which is evident from the increase in public appearances and statements by the governor), there is room for much improvement. The SARB can further increase transparency by publishing, *inter alia*, more detailed forecasts that are not based on a constant interest rate assumption, the minutes of MPC-meetings, and the forecast errors of the SARB (Aron & Muellbauer 2008: 4-5).

Figure 6: Movements of the repo-rate and the 12-month JIBAR, November 1999 – November 2008



Source: SARB (2009) and SAFEX (2009), own calculations

Figure 7: Movements of the 12-month JIBAR between MPC-meetings and on the day of the meetings, 2000 – 2006



Source: SARB (2009) and SAFEX (2009), own calculations

5. EMPLOYMENT TARGETING AS ALTERNATIVE TO INFLATION TARGETING

COSATU has long been calling for the replacement of IT with a regime that targets a real variable instead. One of the regime's major proponents, Gerald Epstein, argues that it would be more appropriate, especially in a developing country, to target a variable that will "...contribute directly to economic welfare..." (Epstein 2003: 5). He proposes that, depending on the particular circumstances in a country, employment, investment growth, or GDP growth should be targeted, and claims that employment targeting (ET) will be ideal in the case of SA.

5.1 How would employment targeting be implemented?

According to Epstein (2003: 5), the central bank would either choose an employment target, or be given one by the government. The central bank would then be responsible for achieving this target subject to an inflation constraint[2]. Due to Tinbergen's golden rule of monetary policy (Acocella 2005: 109), the central bank would then need new instruments in order to attain both the employment- and the inflation target.

5.2 Problems with employment targeting

The first obvious problem with an ET framework is that, as described in section 2, monetary policy is unable to affect real variables in the long-run. It is ludicrous to think that by simply increasing the quantity of money in the economy, SA can lower its unemployment rate permanently. The country's high unemployment rate is due to structural factors, and can thus only be reduced by making structural changes (see Rodrik 2006: 22-23).

Epstein (2008: 255) proposes that the SARB uses credit allocation and capital management policies to contribute to the achievement of the employment target. For example, he recommends that the SARB

[2] It should be stressed that Epstein only regards inflation rates of above 20% p.a. as problematic (Epstein 2003: 4).

establishes lending quotas which financial institutions must adhere to (Epstein 2003: 7). However, the use of such direct intervention methods has been tried in the past and was dismissed for good reason, since it caused distortions, leading to inefficient outcomes, and had virtually no effect on the way credit was allocated in the long run (Mayer 1975: 1472).

Epstein (2003: 9) also suggests the use of incomes policies (where government, business, and trade unions would agree to adjustments to prices and wages); to reduce inflation if an increase in the interest rate would compromise the employment target. However, incomes policies attempt to achieve what IT achieves in a decentralised manner. Thus, considering the information requirements necessary to accomplish this, an incomes policy is inferior to IT (Du Plessis 2003: 154).

5.3 Macroeconomic consequences of replacing IT with ET

Since ET will be less stringent on inflation, it is reasonable to assume that nominal and real interest rates would decrease. Thus, output may increase, but this is not a long-run equilibrium. Economic agents will adjust their inflation expectations, and thus also their price- and wage-setting behaviour, so that the only difference between the equilibrium outcomes of the two regimes will be a higher inflation rate in the new regime. However, as discussed in section 2, high inflation hampers growth, so that output may actually be lower when an ET regime is implemented. Furthermore, higher inflation may cause capital flight, leading to a depreciation of the currency. Altogether, ET has no advantages over IT, and may in fact have disastrous consequences.

6. CONCLUSION

COSATU desperately wants government to replace its IT regime with one that targets a real variable, like employment, instead. However, this essay has shown that the union's antagonism towards IT is unfounded. The statements that IT is not suited for a developing country, and that the interest rate is a blunt instrument, are false as it is not supported by empirical evidence. The author's review of IT in the country has shown that the SARB has been relatively successful in terms of reaching its mandate, anchoring inflation expectations, and increasing transparency. However, there still remains much room for improvement. The one area where the SARB has not been very successful is at convincing the public of the tenability of its decisions (Du Plessis 2008). This has led to weaker political and social support for the SARB's regime. Hence, the SARB should ameliorate its communication strategy and improve transparency to guarantee the necessary backing it needs to execute its monetary policy strategy most efficiently. A clear statement by government assuring its support for the regime is also crucial.

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