Monetary Policy Review

November 2006

South African Reserve Bank

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Enquiries relating to this *Review* should be addressed to:
Executive General Manager and Chief Economist
Research Department
S A Reserve Bank
P O Box 427
Pretoria 0001
Tel. 27-12-3133668/3944

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Introduction

Although inflation remains within the target range, recent economic developments indicate that there are significant risks to the inflation outlook. Since the publication of the previous *Monetary Policy Review* in May, the domestic economy has continued to grow strongly, with buoyant domestic demand supported by strong credit extension. The exchange rate has depreciated somewhat, pressure from production prices has emerged, and the deficit on the current account of the balance of payments continues to be at higher levels. The outlook for domestic economic growth, however, remains generally positive. International oil prices, having reached record high levels in August, have receded somewhat, and this has impacted positively on domestic petrol prices. Global growth is expected to moderate slightly in 2006 and 2007, while world inflation is anticipated to remain under control with tighter monetary conditions prevailing in most parts of the world.

These and other developments resulted in the Monetary Policy Committee (MPC) raising the repo rate by 50 basis points at the June 2006 meeting, the first change in the monetary policy stance since April 2005. This was followed by successive 50-basis-point increases at the August and October 2006 meetings, as the MPC sought to ensure that the monetary policy stance remains consistent with achieving the inflation target.

This review of monetary policy begins by analysing inflation developments and the factors that impact on inflation. This is followed by an assessment of recent monetary policy developments and a discussion of the outlook and uncertainties relating to some of the factors that are considered by the MPC in setting monetary policy. As usual, three topical issues are addressed in the boxes. The first box reports on research into the estimation of a trimmed mean measure of core inflation for South Africa, while the second box provides information on surveys that measure business confidence and trade conditions. The final box assesses the accuracy of the forecasts of inflation provided by the Bank's suite of models.

Recent developments in inflation

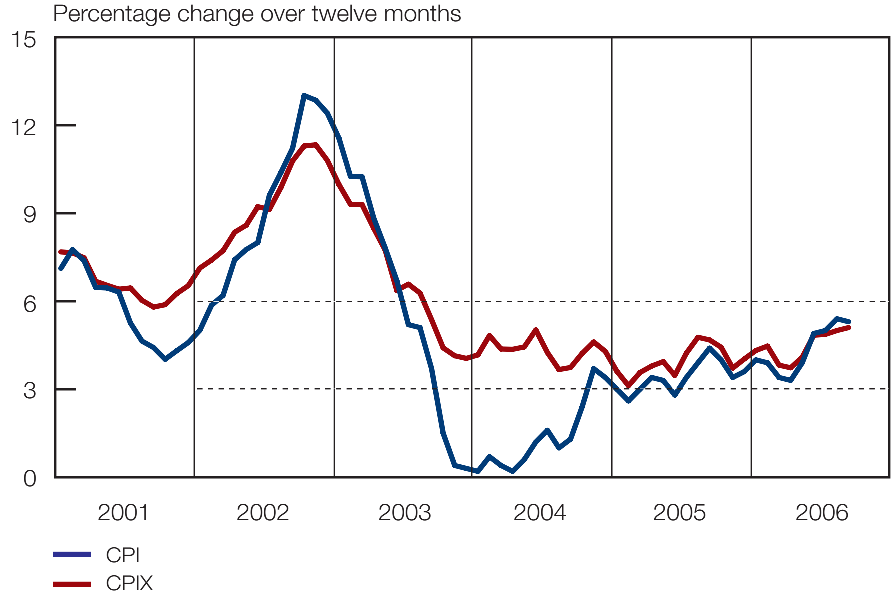
This section analyses recent trends in the main inflation indices, and reviews developments in the primary factors impacting on inflation in South Africa.

The evolution of indicators of inflation

The Bank's targeted measure of inflation, the year-on-year increase in the consumer price index excluding mortgage interest cost for metropolitan and other urban areas (CPIX), has remained within the inflation target range of 3 to 6 per cent for the past 37 months. However, as Figure 1 shows, the inflation rate has risen in the period under review. When the previous *Monetary Policy Review* was published in May 2006, the latest available CPIX inflation rate, for March, was 3,8 per cent. Since then CPIX inflation has increased to 5,1 per cent in September 2006, with its evolution influenced mainly by developments in food and energy prices.

Inflation measured in terms of the headline consumer price index for metropolitan areas (CPI) declined marginally from 3,4 per cent in March 2006 to 3,3 per cent in April, and then increased significantly to reach 5,4 per cent in August before slowing once again to 5,3 per cent in September.

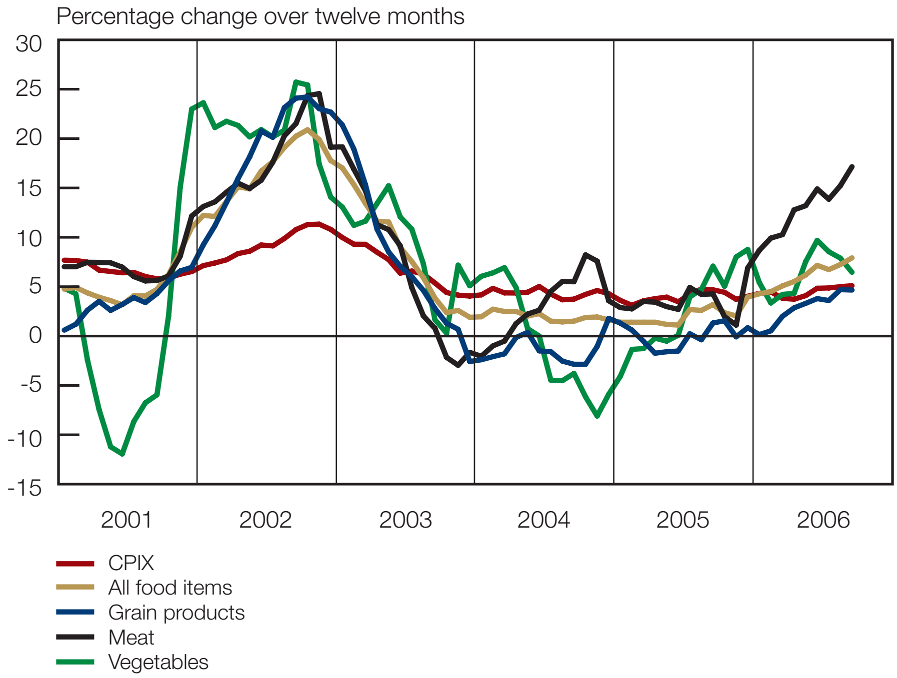
Figure 1 Consumer price inflation: CPIX and CPI



Source: Statistics South Africa

Developments in the food and transport components of the CPIX contributed significantly to the fluctuations noted above. Figure 2 reveals that the year-on-year inflation rate for food prices, which have a weight of 25,7 per cent in the index, has exceeded that of the overall CPIX in each month since February. By September, food price inflation was 7,9 per cent, contributing 2,0 percentage points to the overall CPIX inflation rate of 5,1 per cent (Table 1). Of the food price components, meat prices have risen particularly strongly, growing by 17,2 per cent year on year in September.

Figure 2 CPIX and food inflation



Source: Statistics South Africa

The contribution of the transport component to CPIX inflation is largely driven by movements in petrol prices, which have been volatile in the period under review. The inland pump price of 93 octane unleaded petrol increased from R5,39 per litre in March to R6,92 per litre in August 2006, before declining to R5,85 per litre in November. Table 1 shows that the contribution of the transport component to overall CPIX inflation therefore increased from 0,5 percentage points in April to 1,2 percentage points from June to August 2006, before declining to 0,7 percentage points in September.

Table 1 Contributions to CPIX inflation

Percentage change over twelve months* and percentage points

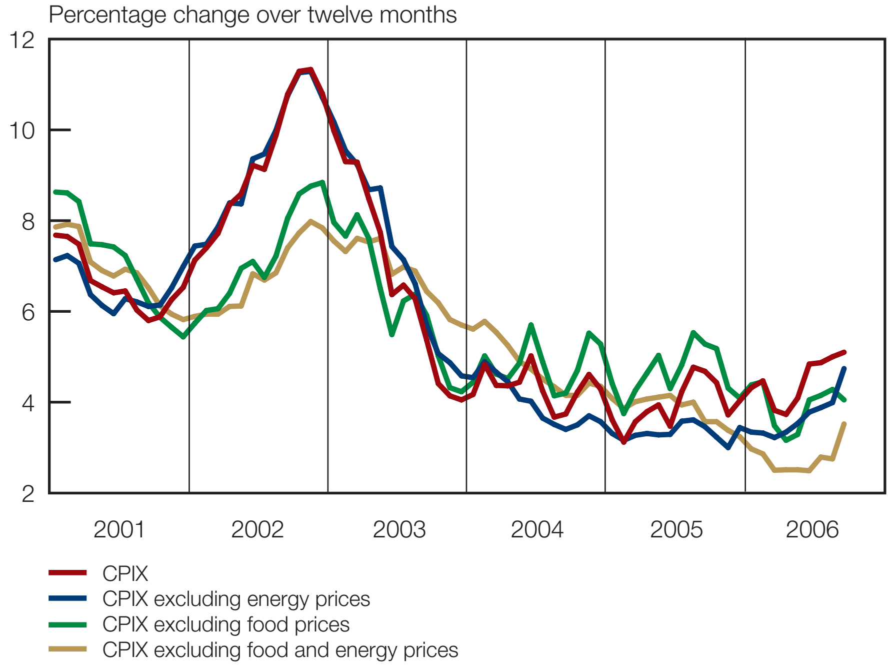
	2006						
	Mar	Apr	May	Jun	Jul	Aug	Sep
Total*	3,8	3,7	4,1	4,8	4,9	5,0	5,1
Of which:							
Food	1,2	1,4	1,5	1,8	1,8	1,9	2,0
Housing	0,5	0,5	0,5	0,5	0,6	0,6	0,6
Medical care and health expenses	0,6	0,6	0,6	0,6	0,6	0,6	0,6
Transport	0,7	0,5	0,8	1,2	1,2	1,2	0,7
Education	0,4	0,4	0,4	0,4	0,4	0,4	0,4
Fuel and power	0,1	0,1	0,1	0,1	0,2	0,2	0,3
Other	0,3	0,2	0,2	0,2	0,1	0,1	0,5

Source: Statistics South Africa

The contributions of the other main components of the CPIX index in this period remained relatively subdued. The housing component, which contributed 0,5 percentage points between March and June 2006, contributed 0,6 percentage points from July to September 2006. The marginal increase reflected the results of the July survey of non-mortgage property costs (i.e. property taxes, rent and insurance). The fuel and power component's contribution increased from 0,1 percentage points from March to June 2006 to 0,2 percentage points in July and August, and 0,3 percentage points in September.

Figure 3 illustrates the effect of excluding energy prices and food prices from the CPIX inflation measure. Box 1, presented at the end of this section, reports on related research by the Bank to estimate a trimmed mean measure of core inflation for South Africa. As the discussion above suggests, the exclusion of both energy and food prices from the CPIX has a significant impact on inflation, with the year-on-year inflation rate recording a value of 2,5 per cent from March to June 2006 before accelerating to 3,5 per cent in September. Excluding only food, CPIX inflation declined from 3,5 per cent in March 2006 to 3,2 per cent in April before increasing to 4,3 per cent in August, and then slowing to 4,1 per cent in September. CPIX excluding energy inflation increased from 3,2 per cent in March to 4,7 per cent in September.

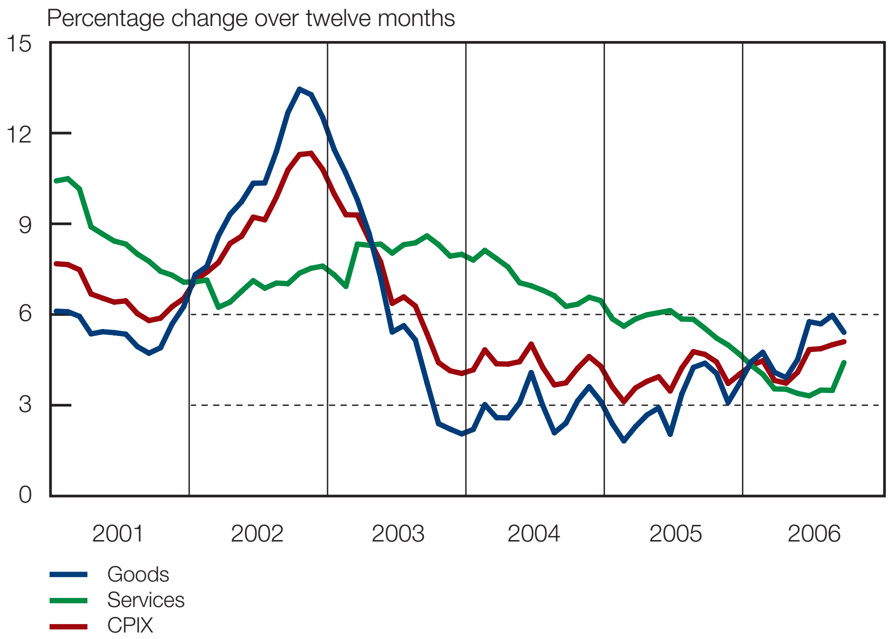
Figure 3 The effect of food and energy prices on CPIX inflation



Source: Statistics South Africa and SARB calculations

The inflation rates for the goods and services categories of CPIX inflation, presented in Figure 4, indicate that goods prices continue to advance at a faster pace than services inflation. The year-on-year inflation rate for goods prices declined from 4,1 per cent in March to 3,9 per cent in April before increasing to 6,0 per cent by August 2006 and then slowing to 5,4 per cent in September. These developments can be attributed mainly to

Figure 4 CPIX: Goods and services inflation

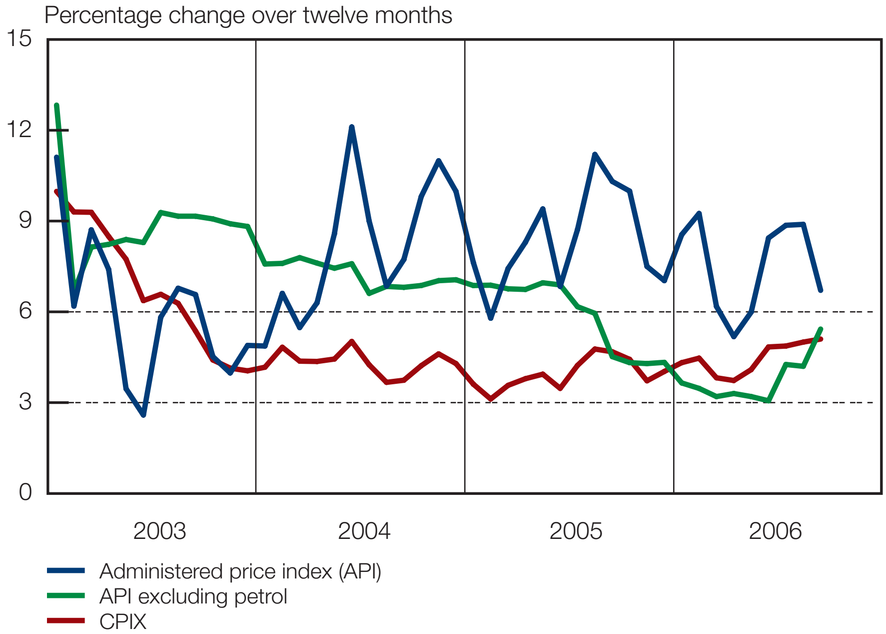


Source: Statistics South Africa

price increases in the food and transport components of the index, moderated by the prices of goods such as clothing and footwear which continued to decline. Services price inflation fluctuated between 3,5 and 3,3 per cent from June to August 2006, before rising to 4,4 per cent in September. The acceleration in September could partly be attributed to an increase in the rate of change in the domestic workers wages component of the index.

The year-on-year inflation rate for the administered price index (API) declined from 6,2 per cent in March to 5,2 per cent in April, rebounded to 8,9 per cent in August 2006 before slowing once again to 6,7 per cent in September (Figure 5). As is generally the case, however, fluctuations in petrol prices had a significant impact on the index. Once petrol prices are excluded from the API, the inflation rate for the remaining administered prices initially increased from 3,2 per cent in March to 3,3 per cent in April before declining to 3,1 per cent in June. Since June, however, even when petrol prices are excluded, API inflation increased significantly to reach 5,4 per cent in September.

Figure 5 CPIX and administered prices



Sources: Statistics South Africa and SARB calculations

Table 2, which presents the contributions of the various components to the overall API inflation rate, provides more insight into these movements in API inflation. Besides the impact of petrol prices, the contribution of increases in electricity prices to these movements is notable. The contribution of the petrol component declined from 3,8 percentage points in March to 2,6 percentage points in April before increasing to 5,9 percentage points in June. Thereafter, however, the contribution of the petrol component decreased to 5,3 percentage points in August and to 2,5 percentage points in September. The table shows that the increase in the overall API inflation rate from 8,4 per cent in June to 8,9 per cent in July and August was therefore mainly attributable to an increase in the electricity component of the index. The contribution of this component to the overall API inflation rate increased sharply to 0,7 percentage points in July and August 2006, and to 1,1 percentage points in September.

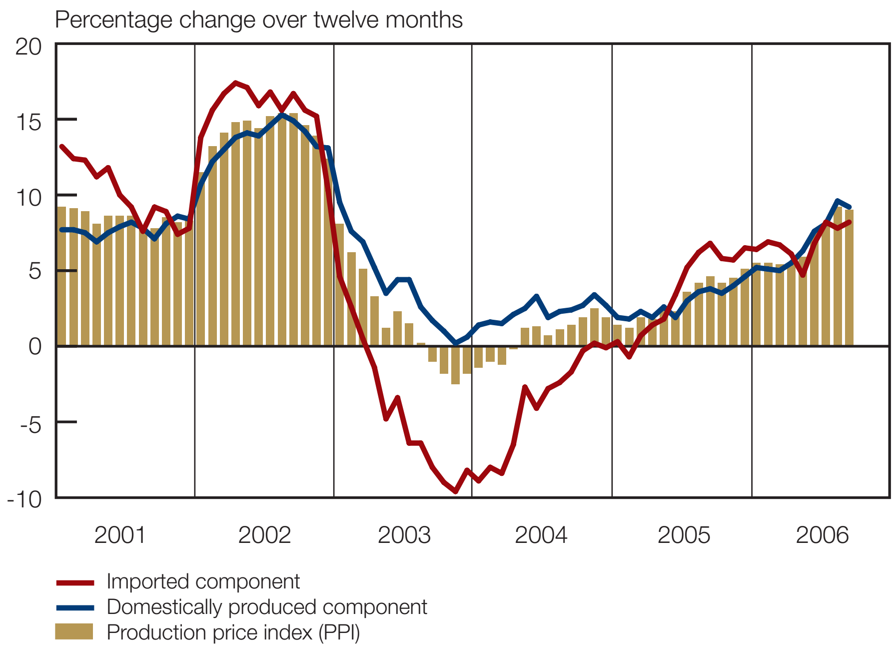
Table 2 Contributions to administered price inflation
Percentage change over twelve months* and percentage points

	2006						
	Mar	Apr	May	Jun	Jul	Aug	Sep
Total*	6,2	5,2	6,0	8,4	8,9	8,9	6,7
Of which:							
Petrol	3,8	2,6	3,4	5,9	5,4	5,3	2,5
Electricity	0,0	0,1	0,1	-0,1	0,7	0,7	1,1
Assessment rates	0,5	0,5	0,5	0,5	0,5	0,5	0,5
Education services	1,1	1,1	1,1	1,1	1,1	1,1	1,1
Medical services	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1	-0,1
Communication	-0,4	-0,4	-0,4	-0,4	-0,4	-0,4	-0,0
Other	1,3	1,4	1,4	1,5	1,7	1,8	1,6

Source: Statistics South Africa

Inflation measured in terms of the production price index (PPI) accelerated significantly in the period under review, with the overall PPI inflation rate increasing from 5,4 per cent in March to 9,2 per cent in August before easing slightly to 9,0 per cent in September. Figure 6 shows that the domestic component of PPI inflation rose at a faster pace than the imported component since May, mainly as a result of robust increases in the agricultural and manufacturing food prices components, to record a year-on-year inflation rate of 9,2 per cent in September. The imported component of the inflation rate initially declined from 6,7 per cent in March to 4,7 per cent in May, and then increased to 8,2 per cent in September. The weighted contribution of the domestic component increased from 3,8 percentage points in March to 7,2 percentage points in August before declining to 6,8 percentage points in September, while that of the imported component declined from 1,6 percentage points to 1,2 percentage points in May before increasing to 2,1 percentage points in September.

Figure 6 Production price inflation



Source: Statistics South Africa

Box 1 Measuring core inflation for South Africa: A trimmed mean approach

It is generally agreed that monetary policy should focus less on short-term, reversible movements in prices and inflation rates, and more on the persistent sources of inflationary pressures. Measures of core inflation aim to capture these persistent inflationary pressures by abstracting from short-run volatility and attempting to distinguish "the signal from the noise" in inflation data (Blinder, 1997: 157). This box reports on research by the South African Reserve Bank (Bank) on the measurement of a trimmed mean core inflation rate for South Africa (Blignaut et al., 2005).

The overall inflation rate π_t may be viewed as consisting of an underlying component π_t^U and a transitory component π_t^{Tr}. While there is agreement on what core inflation should depict – namely underlying inflationary pressures – there is no consensus regarding a single measure that consistently and accurately captures these inflationary pressures.

Three main approaches are used to measure core inflation, namely the behavioural or exclusion-based approach (which entails permanently excluding certain items such as food and/or energy prices from the headline measure of inflation), the model-based set of methods that extend econometric techniques to non-price variables and are more deeply rooted in economic theory, and finally a set of techniques that use statistical methods to extract the persistent or underlying trend component, π_t^U, of the inflation rate.

The trimmed mean measure of core inflation, introduced by Bryan and Cecchetti (1993), falls into the last of these broad approaches. The rationale for the measure is the finding that when the data are not drawn from a normal distribution, the sample mean is not the most efficient (minimum variance) estimator of the first moment. Internationally, research has found that price changes are not normally distributed, a finding replicated in this study for South African data.[1]

The study used monthly price indices and weights published by Statistics South Africa for 33 components of the consumer price index (CPI for metropolitan areas). The sample period ran from January 1980 to January 2005, providing 301 observations which generated 289 12-month changes over the sample period January 1981 to January 2005. The trimmed mean estimator of inflation then removed from the overall CPI for each month those components for which the 12-month percentage changes were ranked the smallest or largest. A proportion of each tail of the distribution of the price changes was therefore trimmed, and the weighted average price change of the remaining central region of the distribution was calculated.

As theory provides little guidance regarding the size of the trim or its symmetry, an "optimal" trim was chosen from a range of trimmed means on the basis of the ability to track a proxy for the trend component of inflation. Following Bryan, Cecchetti and Wiggins (1997), one option is to choose a centred 36-month moving average (MA36) of the overall CPI inflation rate as the benchmark.[2] Various trimmed mean estimators were computed and compared using the mean absolute deviations (MADs) between the trimmed series and trend inflation proxied by the centred 36-month benchmark. This comparison was undertaken for both the case where only symmetric trimming was undertaken and for the case where asymmetric trimming was permitted. In the case of a symmetric trim, the minimum MAD (1,528 percentage points) was achieved when 14 per cent was trimmed from each tail of the distribution ($\pi^T_{14,14}$). The MAD of this symmetric trim was 3,16 per cent lower than that of the overall CPI inflation rate. When an asymmetric trim was allowed, a minimum MAD of 1,484 percentage points was achieved with 26 per cent trimmed from the lower tail and 21 per cent from the upper tail ($\pi^T_{26,21}$). The MAD is 5,91 per cent lower than that of the overall CPI inflation rate. The trim which best reproduces the benchmark is therefore an asymmetric one which removes a larger proportion of the lower tail.[3] The $\pi^T_{14,14}$ and $\pi^T_{26,21}$ trimmed mean estimators are plotted in Figure B1.1.

For the $\pi^T_{26,21}$ trimmed mean estimator, an analysis was undertaken to determine the number of times that each of the 33 product groups was ranked in the tails of the distribution and also to consider the incidence in the upper and lower tails of the distribution. The results show that the most volatile elements are scattered across a variety of product sub-groups and are not necessarily confined to any particular main group(s). The analysis also compared the products excluded in the calculation of core CPI by Statistics South Africa[4] to ascertain if they correspond to those identified by the trimmed mean methodology. The analysis shows that the product categories excluded in the calculation of the official core inflation measure have not necessarily experienced the most volatile price movements in practice.

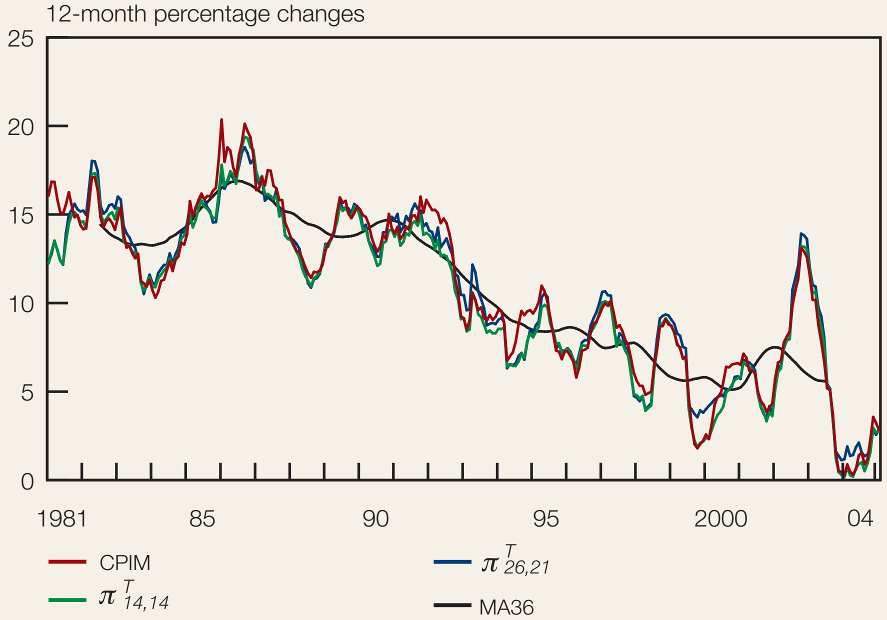
1 On average, the distribution of the price changes of the South African CPI is positively skewed and leptokurtic.

2 This benchmark cannot be used in real time as an indicator of the trend, which is a key requirement of a core measure, but may be useful in an historical context. The choice of an MA36 is essentially arbitrary, and alternative filters have been proposed and used in the literature. Comparisons were therefore undertaken using a range of benchmarks, although results are reported only for the MA36 benchmark.

3 This is consistent with the finding that the distributions of the CPI component price changes are positively skewed.

4 Products excluded by Statistics South Africa in the calculation of the Core CPI are mainly confined to five categories, namely meat; fish and other seafood; fruit and nuts; vegetables; and housing.

Figure B1.1 The $\pi^T_{14,14}$ and $\pi^T_{26,21}$ trimmed mean CPI inflation rates



The analysis presented in the paper has significant potential usefulness for policy-makers. The calculation of the trimmed mean measure of core inflation improves the ability to dissect inflation data and helps to distinguish the signal from the noise in these data. The performance of the measure in this regard, and indeed in other areas such as the forecasting of inflation, can and should be compared with that of alternative measures. Moreover, once a sufficiently long data sample is available, the methodology can be applied to the CPIX measure employed in the inflation-targeting framework. In fact, with certain restrictions in place, this type of analysis is already possible.

References

Blignaut, Z, Farrell, G N, Munyama, T V and Rangasamy, L. 2005. Measuring Core Inflation for South Africa: A Trimmed Means Approach. *South African Reserve Bank Discussion Paper* DP/05/10.

Blinder, A S. 1997. Commentary. *Federal Reserve Bank of St. Louis Review*. May/June.

Bryan, M F and Cecchetti, S G. 1993. Measuring Core Inflation. *NBER Working Paper No 4303*, NBER, Washington.

Bryan, M F, Cecchetti S G and Wiggins, R L. 1997. Efficient Inflation Estimation. *NBER Working Paper No 6183,* NBER, Washington.

Cecchetti, S G. 1996. Measuring Short-run Inflation for Central Bankers. *NBER Working Paper No 5786,* NBER, Washington.

Factors affecting inflation

Recent developments in some of the main variables influencing inflation in South Africa are reviewed in this section, while the outlook for these variables and their likely impact on inflation are discussed in a later section.

International economic developments

Global economic expansion remains vigorous, with the most recent International Monetary Fund (IMF) data showing global real gross domestic product (GDP) having grown by 4,9 per cent in 2005 and being projected to increase by 5,1 per cent in 2006 (Table 3). This growth has been broad based, with both the advanced and emerging-market and developing economies contributing strongly. However, major global imbalances have continued widening as the United States of America (US) current-account deficit rose to its second-highest level ever in the second quarter of 2006. There are also indications that sustained high rates of global growth have absorbed spare capacity and led to emerging signs of inflationary pressures in various countries.

Growth in the US, which was strong in the first quarter of the year before slowing in the second quarter, is forecast to reach 3,4 per cent in 2006 compared with 3,2 per cent in 2005. However, a complex situation of rising inflation in a slowing economy appears to be developing, with the inflation rate projected to increase to 3,6 per cent this year from 3,4 per cent in 2005.

Table 3 Annual percentage change in real gross domestic product and consumer prices

	Real GDP		Consumer prices	
	2005	2006 (estimate)	2005	2006 (estimate)
World	**4,9**	**5,1**	**3,7**	**3,8**
Advanced economies	**2,6**	**3,1**	**2,3**	**2,6**
United States	3,2	3,4	3,4	3,6
Japan	2,6	2,7	-0,6	0,3
Euro area	1,3	2,4	2,2	2,3
United Kingdom	1,9	2,7	2,0	2,3
Other advanced economies	3,1	3,6	2,1	2,3
Other emerging-market and developing countries	**7,4**	**7,3**	**5,3**	**5,2**
Africa	5,4	5,4	8,5	9,9
Central and eastern Europe	5,4	5,3	4,8	5,3
Commonwealth of Independent States	6,5	6,8	12,3	9,6
Developing Asia	9,0	8,7	3,5	3,8
China	10,2	10,0	1,8	1,5
India	8,5	8,3	4,0	5,6
Middle East	5,7	5,8	7,7	7,1
Western hemisphere	4,3	4,8	6,3	5,6

Source: IMF *World Economic Outlook,* September 2006

The Japanese economy is expected to grow by 2,7 per cent this year on account of solid domestic demand, after recording growth of 2,6 per cent in 2005. Business investment and consumer spending accelerated in the second quarter of 2006, and there is increasing confidence that the economy has emerged from seven years of deflation. In the euro area, growth has picked up and is expected to rise to 2,4 per cent in 2006 from the 1,3 per cent recorded in 2005, while the United Kingdom (UK) economy has regained momentum, with growth accelerating from 1,9 per cent in 2005 to a forecast 2,7 per cent in 2006. However, inflation pressures have increased steadily amid rising energy costs, and inflation is expected to rise to 2,3 per cent in 2006.

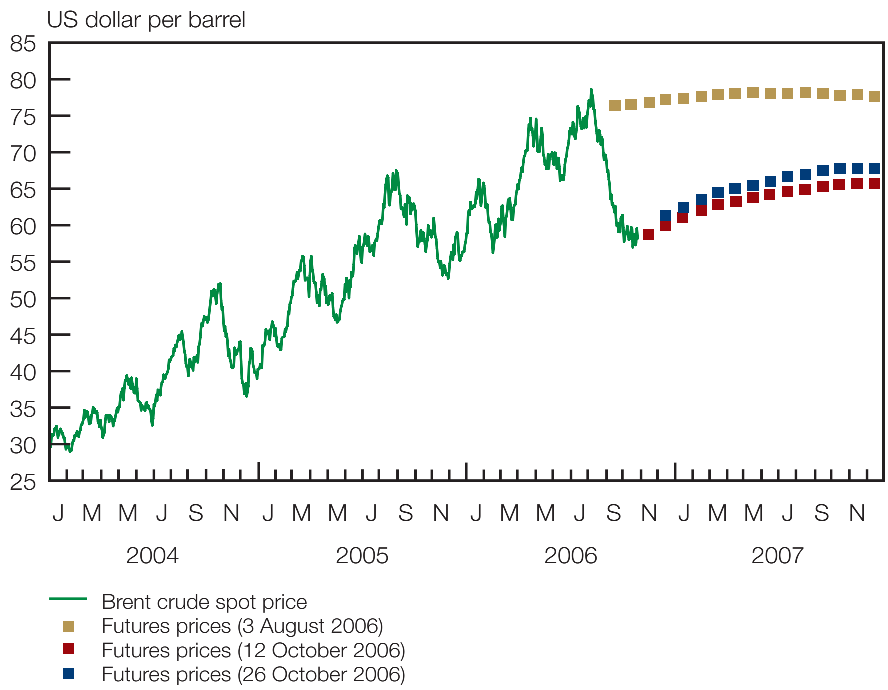
In Africa, GDP growth of 5,4 per cent is expected this year, the same rate recorded in 2005. Sub-Saharan Africa is experiencing its strongest period of sustained economic expansion since the early 1970s, with regional growth expected to be above 5 per cent for the third successive year. While oil-exporting countries are contributing significantly to this strong performance, growth in many oil-importing countries has also been surprisingly robust as the rise in non-fuel commodity prices has helped to cushion the impact of higher oil prices.

Developing Asia continues to grow strongly. The IMF forecasts that China will grow by 10 per cent in 2006 (its fourth year of double-digit growth), and India is expected to record 8,3 per cent growth in 2006 compared with 8,5 per cent in 2005. Growth in Latin-American economies, by contrast, continues to lag behind other emerging economies, although prospects have improved in the region and these economies are forecast to grow by 4,8 per cent in 2006 compared with 4,3 per cent in 2005. Middle Eastern economies are forecast to expand by 5,8 per cent this year compared with 5,7 per cent in 2005, with the management of the windfall gain from rising energy prices presenting a challenge to the region's oil producers.

Oil prices

Crude oil prices remained volatile during 2006 amid strong global oil demand, mounting geopolitical concerns, supply constraints and limited spare capacity. Figure 7 shows that the daily spot price of Brent crude oil reached levels of around US$75 per barrel towards the end of April, fuelled by geopolitical tensions in Nigeria, Iran and Iraq, falling US fuel inventories as a result of refinery maintenance and unplanned outages as well as supply constraints in the Gulf of Mexico. Prices then trended downwards, reaching levels below US$67 per barrel by mid-June due to rising US fuel and crude oil inventories, the decision by the Organization of the Petroleum Exporting Countries (OPEC) in June to leave production quotas unchanged, and global monetary policy tightening.

Figure 7 Price of brent crude oil



However, towards the end of June oil prices began to increase sharply once more, reaching levels approaching US$80 per barrel at the start of August 2006. This was due to robust US fuel demand, mounting tensions in Nigeria, North Korea, Iran, Israel and Lebanon, and the partial shutdown of the largest US oil field in Alaska (Prudhoe Bay).

Oil prices then decreased throughout August and September, reaching an eight-month low of around US$57 per barrel in mid-October. The decrease was due to the easing of tensions in the Middle East and increasing US fuel and crude oil inventories towards the end of the summer driving season. In addition, supply uncertainties faded as output levels at the Prudhoe Bay oil field were restored by late September, and above-average US fuel and crude oil inventories helped restore confidence as the US prepares for strong winter demand. A milder-than-expected Atlantic hurricane season also added to output assurances.

The oil price rebounded towards the end of October to levels of around US$60 per barrel after OPEC announced cutbacks of 1,2 million barrels per day, effective from the start of November, to prevent oil prices from declining further. However, the futures price for Brent crude oil to be delivered in the first quarter of 2007 is nevertheless currently almost US$15 per barrel lower than the corresponding price at the time of the MPC meeting on 2 and 3 August 2006.

International monetary policy developments

Higher oil prices and sustained strong global economic growth have adversely influenced inflationary prospects in several countries. Central banks around the globe therefore generally continued to tighten monetary policy in recent months (see Table 4).

Table 4 Selected central bank interest rates

Per cent

Countries	1 Jan 2006	26 October 2006	Latest change (percentage points)	
United States	4,25	5,25	29 Jun 2006	(+0,25)
Japan	0,00	0,25	14 Jul 2006	(+0,25)
Euro area	2,25	3,25	11 Oct 2006	(+0,25)
United Kingdom	4,50	4,75	3 Aug 2006	(+0,25)
Canada	3,25	4,25	24 May 2006	(+0,25)
Denmark	2,25	3,25	6 Oct 2006	(+0,25)
Sweden	1,50	2,50	6 Sep 2006	(+0,25)
Switzerland	0,50 – 1,50	1,25 – 2,25	14 Sep 2006	(+0,25)
Australia	5,50	6,00	2 Aug 2006	(+0,25)
New Zealand	7,25	7,25	8 Dec 2005	(+0,25)
Israel	4,50	5,25	1 Nov 2006	(-0,25)
China	5,58	6,12	19 Aug 2006	(+0,27)
Hong Kong	5,75	6,75	30 Jun 2006	(+0,25)
Indonesia	12,75	10,75	5 Oct 2006	(-0,50)
Malaysia	3,00	3,50	26 Apr 2006	(+0,25)
South Korea	3,75	4,50	10 Aug 2006	(+0,25)
Taiwan	2,25	2,625	28 Sep 2006	(+0,125)
Thailand	4,00	5,00	7 Jun 2006	(+0,25)
India	5,25	6,00	25 Jul 2006	(+0,25)
Brazil	18,00	13,75	18 Oct 2006	(-0,50)
Chile	4,50	5,25	13 Jul 2006	(+0,25)
Mexico	8,25	7,00	21 Apr 2006	(-0,25)
Czech Republic	2,00	2,50	27 Sep 2006	(+0,25)
Hungary	6,00	8,00	25 Oct 2006	(+0,25)
Poland	4,50	4,00	28 Feb 2006	(-0,25)
Russia	12,00	11,00	23 Oct 2006	(-0,50)

Source: National central banks

In the US, the Federal Open Market Committee has been concerned about inflationary pressures and increased the target for the federal funds rate at seventeen consecutive meetings, before keeping it unchanged at 5,25 per cent since June 2006. The Bank of Japan ended its quantitative easing monetary policy in March 2006 and increased the uncollateralised overnight call rate in July by 25 basis points. The European Central Bank increased the repo rate in early October to 3,25 per cent, the fifth increase in ten months, while the Bank of England raised the official bank rate in early August 2006 by 25 basis points to 4,75 per cent.

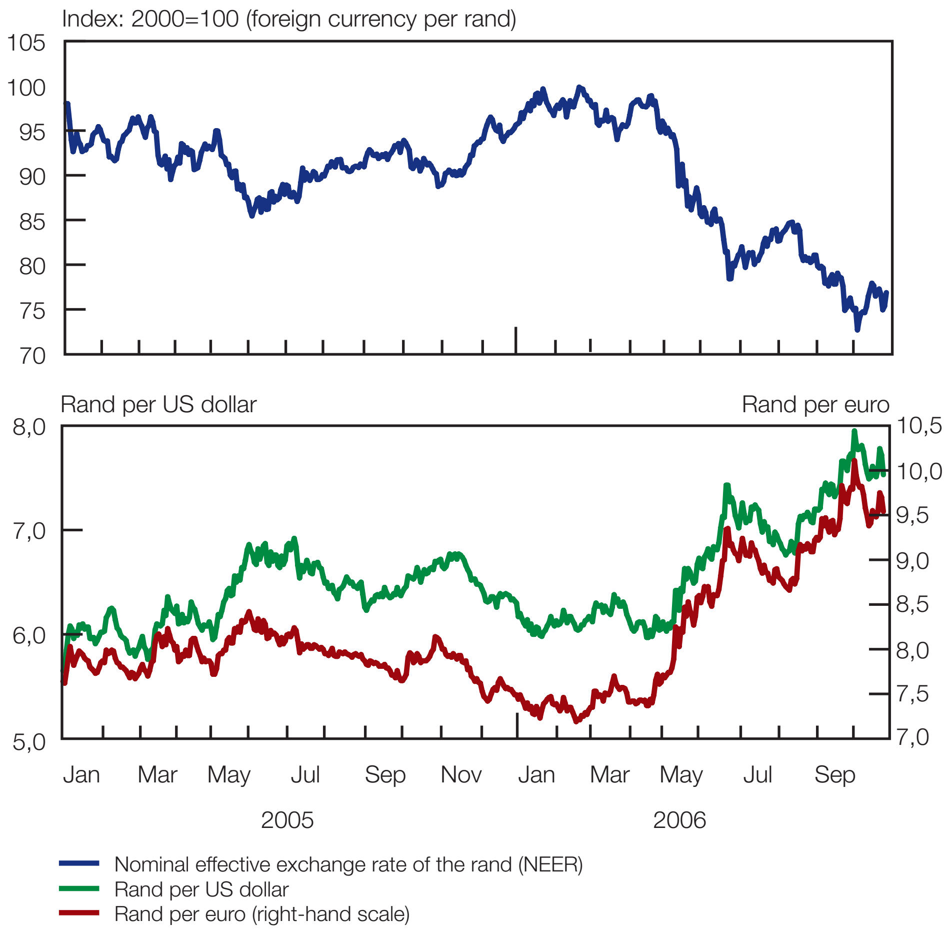
Monetary policy was also tightened in recent months in other countries, including Australia, Canada, Chile, China, the Czech Republic, Denmark, Hong Kong, Hungary, India, Malaysia, South Korea, Sweden, Switzerland, Taiwan and Thailand. However, the central banks of Brazil, Indonesia, Israel, Mexico, Poland and Russia recently lowered interest rates.

Exchange rate developments

The exchange rate of the rand exhibited considerable volatility in the period under review. Along with other emerging-market currencies, the rand came under pressure in May as global risk aversion increased, resulting in a re-rating of emerging-market risk amid concerns regarding global growth prospects and the path of interest rates. More recently, concerns about the deficit on the domestic current account of the balance of payments and global commodity prices have influenced developments in the foreign exchange rate of the rand.

Figure 8 shows that the nominal effective exchange rate of the rand (NEER), which measures the foreign exchange rate against a basket of thirteen currencies, depreciated

Figure 8 Exchange rates of the rand



from a level of 98,9 index points on 20 April 2006 to 78,4 index points on 23 June. The NEER then recovered to 84,8 on 14 August but subsequently depreciated once more and is currently trading at levels of around 77 index points. Measured on a bilateral basis against the US dollar and the euro, the rand performed similarly to the NEER, depreciating from R5,97 on 20 April to R7,50 on 26 October against the US dollar and from R7,72 to R9,54 against the euro over the same period.

Labour markets

The labour market developments detailed in Figure 9 reveal that the year-on-year increase in economy-wide unit labour cost (i.e. wage increases adjusted for productivity changes in the formal non-agricultural sector), rose from 2,3 per cent in the final quarter of 2005 to 7,3 per cent in the first quarter of 2006, before slowing to 3,2 per cent in the second quarter of the year. These movements reflect to some extent the low base for year-on-year calculations established by employment data for the first quarter of 2005, which influenced in particular the labour productivity component of nominal unit labour cost.

Figure 9 Remuneration per worker, labour productivity and unit labour cost in the formal non-agricultural sector

Growth in nominal remuneration per worker in the formal non-agricultural sector rose from 4,4 per cent in the final quarter of 2005 to 7,3 per cent in the first quarter of 2006, before declining to 4,5 per cent in the second quarter. By contrast, growth in labour productivity (measured by the ratio of real value added to employment in the formal non-agricultural sector) slowed from 2,1 per cent in the final quarter of 2005 to 0,0 per cent in the first quarter of 2006, before rising once again to 1,3 per cent in the second quarter of the year.

The average level of wage settlements, according to Andrew Levy Employment Publications, was 6,2 per cent in the first six months of 2006, compared to 6 per cent in the first half of 2005 and the annual average of 6,3 per cent for 2005 as a whole. It must be borne in mind, however, that the impact of these settlements on inflation depends on what happens to labour productivity over time.

Demand and output

The South African economy has continued to expand at a firm pace in 2006. The latest available data show that the economy grew at an annualised rate of 4,9 per cent in the second quarter, an increase of 0,9 percentage points on the growth of 4,0 per cent achieved in the first quarter of the year (Table 5).

Table 5 Growth in real gross domestic product and expenditure components

Per cent*

	2005				2006	
	2nd qr	3rd qr	4th qr	Year	1st qr	2nd qr
Final consumption expenditure:						
Households	6,7	6,1	6,8	6,9	7,1	8,0
Government	5,9	5,5	14,7	5,6	-2,3	16,1
Gross fixed capital formation	5,4	8,3	8,6	9,2	10,7	11,3
Changes in inventories (R billions)**	6,1	13,3	2,3	8,5	12,9	14,9
Gross domestic expenditure	**5,8**	**7,3**	**3,8**	**5,9**	**14,5**	**7,4**
Exports of goods and services	23,5	10,5	-4,1	6,7	-19,3	23,2
Imports of goods and services	23,2	21,6	-1,2	10,1	17,5	28,6
Gross domestic product	**5,3**	**4,1**	**3,2**	**4,9**	**4,0**	**4,9**

* Quarterly data refer to quarter-on-quarter growth at annual rates of seasonally adjusted data
** Constant 2000 prices

The robust performance in the second quarter reflected brisk growth in the secondary and tertiary sectors, which grew at rates of 7,0 and 5,5 per cent, respectively. In the secondary sector, a growth rate of 14,0 per cent was recorded in construction and 6,0 per cent in manufacturing, with the latter benefiting from both buoyant domestic demand and the relatively weaker foreign exchange rate of the rand. The primary sector, by contrast, contracted largely on account of a fall of 8,5 per cent in the real value added by the agricultural sector.

Table 5 shows that domestic expenditure continues to grow at a robust rate. Gross domestic expenditure recorded annualised growth of 7,4 per cent in the second quarter of the year, supported by strong increases in all components of domestic final demand. Household consumption expenditure grew at a rate of 8,0 per cent, government consumption expenditure at 16,1 per cent and gross fixed capital formation at 11,3 per cent in the quarter. The last of these categories contributed to the ratio of gross fixed capital formation to GDP rising to 18,4 per cent, its highest level since 1990.

Although the deficit on the trade account widened in the second quarter of 2006, a decline in net service and income payments to non-residents resulted in the deficit on the current account of the balance of payments narrowing slightly to 6,1 per cent of GDP from 6,4 per cent in the first quarter. The adjustment in the exchange rate of the rand combined with relatively high international demand and commodity prices contributed to export growth recovering to 23,2 per cent in the second quarter. Real exports had contracted in the preceding two quarters. However, import volumes continued to be supported by strong domestic demand, resulting in imports of goods and services rising by 28,6 per cent in the second quarter.

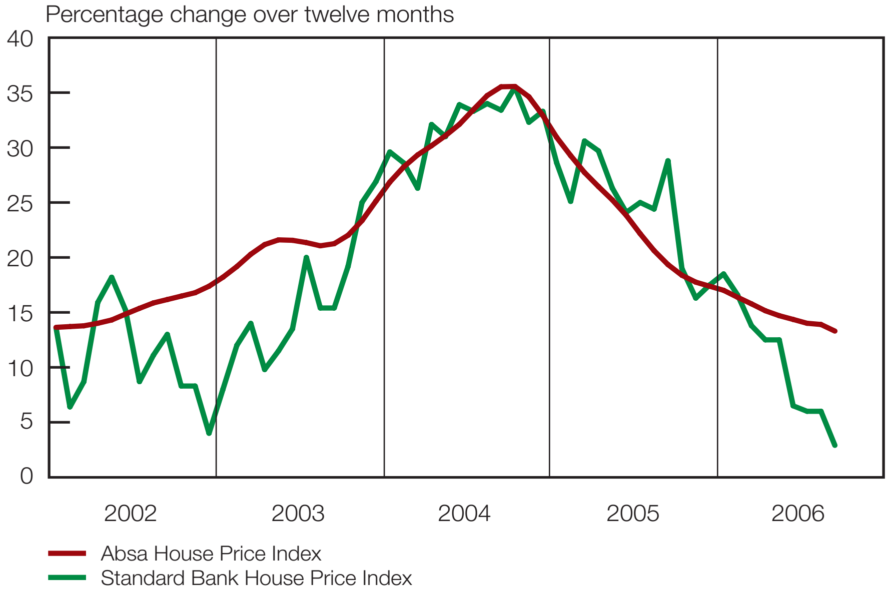
Both the gross gold and other foreign exchange reserves and the international liquidity position of the Bank rose moderately over the past six months to reach levels of US$24,6 billion and US$21,2 billion, respectively, at the end of September 2006.

Real-estate and equity prices

According to both the Absa and Standard Bank nominal house price indices, growth in house prices has continued to slow in recent months.[1] In nominal terms, Figure 10 shows that the year-on-year rate of increase in the Absa index slowed from a revised 15,8 per cent in March 2006 to 13,3 per cent in September 2006, while that of the Standard Bank index declined from 13,8 to 2,9 per cent over the same period.

1 *The Absa House Price Index records the total purchase price of houses in the 80 – 400 m² size category, valued at R2,6 million or less in 2006 and for which loan applications were approved by Absa. The Standard Bank index is based on the median price of the full spectrum of recorded house prices. Standard Bank has a market share of about 27,7 per cent, and states that these prices are generally highly correlated with those of the Deeds Office.*

Figure 10 House prices



Source: Absa and Standard Bank

The building statistics published by Statistics South Africa suggest that the level of economic activity in the real-estate sector has also slowed in the period under review (Table 6). The real value of buildings completed rose by 15,3 per cent in the first eight months of 2006 compared with the same period in 2005, a lower rate than the 36,6 per cent recorded for 2005 as a whole.

Table 6 Real value of building plans passed and buildings completed in larger municipalities

Annual percentage change

	2003	2004	2005	2006*
Building plans passed				
Total	**11,3**	**35,7**	**45,2**	**3,2**
Residential	16,3	42,0	37,9	1,2
Non-residential	3,5	23,8	66,3	13,6
Additions and alterations	6,3	29,1	50,4	0,5
Buildings completed				
Total	**6,8**	**26,2**	**36,6**	**15,3**
Residential	8,1	38,4	44,6	14,2
Non-residential	8,7	8,2	16,6	10,6
Additions and alterations	1,4	7,9	26,4	24,0

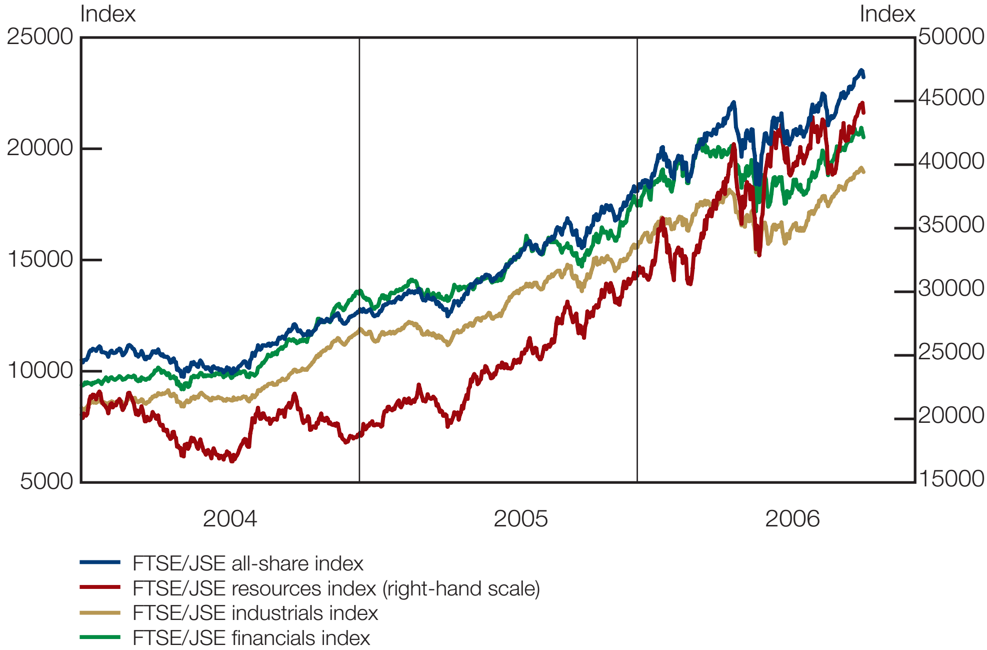
* Figures in this column are the percentage changes for the first eight months of 2006 compared to the first eight months of 2005

Source: Statistics South Africa

Furthermore, the corresponding real value of building plans passed (an indication of future construction activity) points to a slowdown in building activity, particularly in the residential sector. The real value of building plans passed grew by 3,2 per cent year on year in the first eight months of 2006, compared to growth of 45,2 per cent in 2005. So far in 2006, the value of the residential buildings plans and additions and alterations components grew by 1,2 and 0,5 per cent, respectively, while growth in the real value of non-residential buildings plans was 13,6 per cent.

On the JSE Securities Exchange SA (JSE), the reassessment of emerging-market exposure by international investors which was noted earlier led to a correction in May and June of 2006 (Figure 11). The closing levels of the daily indices receded from the record highs that had been experienced in the preceding period, and the daily all-share index declined by 16,8 per cent from a level of 22 094 on 11 May to 18 380 on 13 June. The resources index fell by 21,0 per cent from 41 609 to 32 860 over the same period. However, with the support of stronger international commodity prices, the demand for resources shares led to an improved performance of the resources index from mid-June. The index recorded a new record high of 44 863 on 25 October 2006, supporting the all-share index to a high of 23 489 on the same date. The recent performances of financial and industrial stocks have been more subdued, however, partly as a result of tighter international and domestic monetary conditions.

Figure 11 Share price indices



Fiscal policy

Revised estimates of key public finance data for the fiscal year 2006/07, together with the medium-term projections for the fiscal years to 2008/09, were published in the *Medium Term Budget Policy Statement* (MTBPS) released on 25 October 2006 (Table 7). The budget deficit for 2006/07 is estimated at R7,8 billion, or 0,4 per cent of GDP, compared to the 1,5 per cent of GDP projected in February 2006. A budget surplus amounting to 0,5 per cent of GDP is expected in 2007/08, followed by deficits amounting to 0,2 and 0,4 per cent of GDP, respectively, for fiscal years 2008/09 and 2009/10.

Table 7 Public finance data
R billions and per cent

	2005/06	2006/07		2007/08	2008/09	2009/10
	Actual	Budget	Revised estimates	Medium-term estimates		
National government						
Revenue	411,7	446,4	466,4	543,0	586,4	633,5
Expenditure	416,7	472,7	474,2	533,7	590,2	643,7
Budget balance*	-5,0	-26,4	-7,8	+9,3	-3,8	-10,2
As percentage of GDP:						
Budget balance*	-0,3	-1,5	-0,4	+0,5	-0,2	-0,4
Total net loan debt	30,1	29,6	28,3	25,6	23,7	22,0
PSBR**	-0,7	2,4	1,2	0,5	1,5	1,8

* A positive number reflects a surplus and a negative number a deficit
** PSBR: Public-sector borrowing requirement

Source: National Treasury 2006 *Medium Term Budget Policy Statement*

The revenue estimate for 2006/07, at R466,4 billion or 26,7 per cent of GDP, is R20,0 billion more than the estimate provided in the February 2006 Budget. The growth in revenue is in part attributable to the strong growth performance of the economy and robust consumer expenditure. The revised estimate for expenditure in 2006/07 is R474,2 billion, or 27,2 per cent of GDP, which is slightly above the R472,7 billion projected in the 2006 Budget in February. The revised public-sector borrowing requirement is estimated at 1,2 per cent of GDP in 2006/07, and is projected to decline to 0,5 per cent of GDP in 2007/08 before increasing to around 1,8 per cent of GDP by 2009/10.

Monetary conditions

Growth in the broad monetary aggregate (M3) showed a downward trend in the period under review, although the twelve-month rate of increase remained at a relatively high level (Figure 12). The growth rate for M3 declined from a peak of 26,8 per cent in March 2006 to 21,9 per cent in September, while the corresponding rates for the narrower M1 and M2

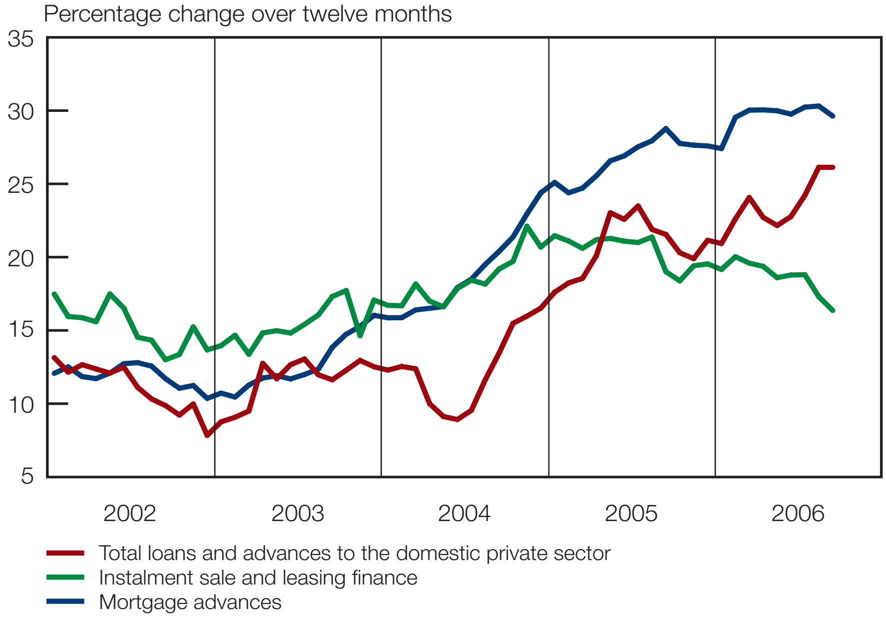
Figure 12 Growth in M3 and in bank loans and advances

aggregates slowed from 24,5 to 15,7 per cent and from 23,3 to 18,9 per cent, respectively, over the same period.

The twelve-month growth in total loans and advances to the private sector[2] declined from 24,1 per cent in March 2006 to 22,2 per cent in May before increasing to 26,1 per cent in September. Of the asset-backed finance categories, mortgage advances contributed significantly to total loans and advances (Figure 13). Mortgage advances grew at a rate of around 30 per cent on a year-on-year basis between March and September, while instalment sale credit and leasing finance continued to moderate, declining from 19,6 to 16,4 per cent over this period as banks continued with securitisation activity. In the other loans and advances category, credit card advances continued to grow strongly at 40,8 per cent in September, although this was well below the rate of 47,4 per cent recorded in December 2005.

2 Total loans and advances to the private sector consist of instalment sale credit, leasing finance, mortgage advances, overdrafts, credit card and general advances. The first three categories are referred to as asset-backed credit, while the last three are referred to as other loans and advances.

Figure 13 Bank loans and advances

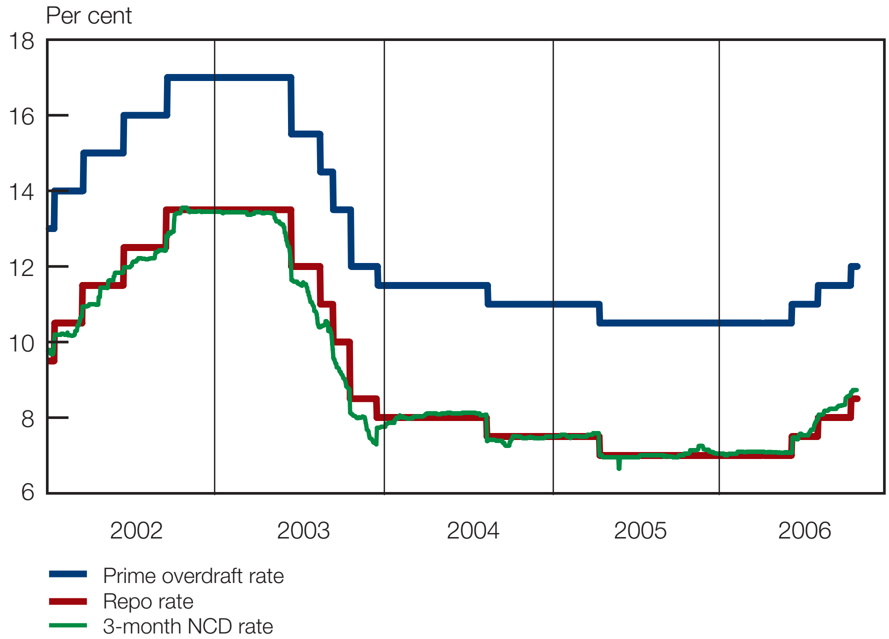


Monetary policy

Since the publication of the previous *Monetary Policy Review* there has been a significant change in the monetary policy stance. In the previous *Review* it was noted that the MPC had to balance the benign inflation outlook at that time with the evolution of a number of risk factors affecting the outlook that had been emerging. In the statement issued after the April meeting, the MPC had warned of these upside risks to the forecast. During the past few months the view of the MPC was that these risks had increased sufficiently to justify pre-emptive action in order to keep CPIX inflation within the target range. Accordingly the repo rate was increased by 50 basis points at each of the past three meetings of the MPC.

At the June meeting, the forecast generated by the Bank's forecasting models showed a marked deterioration compared to the previous benign outlook. Whereas the previous forecast had projected CPIX inflation to peak at a level just below 5 per cent in the first quarter of 2007, it was now expected to breach the upper end of the target range at that time and peak at a level of 6,2 per cent. By the following quarter it was expected to be back below the upper end of the target, and to decline gradually to reach 4,8 per cent by the end of 2008. The main reason for the higher trajectory was a significant upward revision of the international oil price assumptions.

Figure 14 The repo and other short-term interest rates



A number of risk factors were identified and the risks were seen to be on the upside. On the domestic front, the strong rate of growth of household real consumption expenditure was underlined. Consumer demand was showing no sign of tapering off, and continued to be reflected in the growth of credit extension in excess of 27 per cent, and rising household indebtedness, which had risen to 68 per cent of annualised household disposable income.

Of further concern to the committee was the impact of the higher consumer demand on the deficit on the current account of the balance of payments, which in the first quarter of 2006 had reached a level of 6,4 per cent of GDP. The deficit had averaged 3,4 per cent and 4,2 per cent of GDP in 2004 and 2005, respectively. The MPC had previously expressed concern about the deficit on the current account and its possible impact on inflation.

At the time of the June meeting, the exchange rate was also identified as a potential risk factor. Previously, the relative stability of the exchange rate that had prevailed for some time had contributed to the positive inflation outlook. By June, the rand had depreciated by 13 per cent on a trade-weighted basis since early May. The move in the rand was mainly a result of the re-rating of emerging-market risk and a decline in commodity prices. In light of these uncertain developments and combined with the possible reaction to the current-account deficit, the committee saw the exchange rate outlook as posing a potential risk to the inflation outlook.

International developments also weighed heavily on the committee's decision. The primary concern was the international oil price. The price of Brent crude oil had reached a new record high of just below US$75 per barrel in the third week of April and at the time of the meeting was at a level of around US$68 per barrel. Tight supply and demand conditions and geopolitical tensions were identified as the factors that would keep the oil price at these levels or higher. These developments had by then resulted in the domestic petrol price increasing by almost R1 per litre between April and June 2006.

At that stage the economy had shown signs of sustained growth in the second quarter of 2006 and the view of the committee was that overall growth in 2006 would remain more or less in line with potential output. The outlook for world growth, however, remained uncertain. Although forecasts indicated that robust world growth would continue, it was unclear at that stage whether the uncertainties prevailing at the time in the international financial markets were a reflection of a temporary correction or of a more sustained period of volatility which could undermine world growth in general and in emerging markets in particular.

There were some favourable factors to the inflation outlook which included continued fiscal discipline, the moderate trend in unit labour costs and wage settlements, and benign world inflation forecasts. Although the latest inflation expectations survey indicated that there was a slight deterioration in expectations for 2007 and 2008, expectations were still firmly entrenched within the inflation target range. Overall, the committee concluded that although the forecast was showing that inflation was likely to remain within the target range for most of the forecast period, inflation was likely to trend towards the upper end of the range and the risks to the forecast were firmly on the upside. Accordingly, the repo rate was increased by 50 basis points.

This move, which took a number of analysts in the market by surprise, was interpreted in some quarters as representing a change in the objectives or goals of the MPC. In particular it was noted that the concern of the MPC was no longer with inflation but with macroeconomic balance, whether it is the current account, consumer debt, consumer demand or the exchange rate. However, although the MPC is and should be concerned with such imbalances, the primary objective remains the inflation target, and the overriding concern about developments in these variable relates to the impact of these imbalances on the inflation outlook.

In the subsequent meetings in August and October, the risks to the outlook remained generally the same. Consumer demand growth continued unabated and in fact increased further, supported by continued strong credit extension growth, and higher asset prices. The deficit on the current account of the balance of payments, although slightly narrower in the second quarter, remained a concern. On the positive side, unit labour costs, fiscal policy and world inflation trends remained supportive of the inflation outlook.

There were, however, a number of new developments which are highlighted below. By the time of the August 2006 meeting, CPIX inflation had risen to 4,8 per cent, more or less in line with the Bank's short-term forecast. The longer-term forecast, however, had deteriorated moderately, and CPIX inflation was expected to peak marginally above the upper end of the target range for the first two quarters of 2007 and then to decline slowly to reach a level marginally above 5 per cent. The October forecast, which is reproduced later in this *Review*, showed a marginal improvement in 2007, where the peak was expected to be around 6 per cent, but the longer-term forecast showed inflation declining to a level of around 5,4 per cent by the end of 2008. The October forecast incorporated the two previous repo rate increases.

Compared to the previous quarter, inflation expectations in the third quarter of 2006 increased in respect of every forecast year. Market inflation expectations as indicated in the breakeven inflation rates also showed that expectations had deteriorated. Expectations, as reflected in the surveys, were nevertheless still entrenched within the inflation target range during all the forecast years.

By the August meeting the exchange rate had depreciated by a further 2,5 per cent on a trade-weighted basis from the previous meeting. In late June the rand had reached a level of around R7,50 to the US dollar as a result of increased global risk aversion as well as concerns relating to the deficit on the current account of the balance of payments. However, following expectations that the global monetary policy tightening was at or near its peak, it appreciated to around R6,90 at the time of the August meeting. By October the rand had depreciated by almost 22 per cent on a trade-weighted basis since May. The MPC noted that at these levels, it is possible that some pass-through to higher domestic prices may occur, and stressed that the challenge for monetary policy is to ensure that any inflationary effect is minimised.

Production price inflation was highlighted as a particular concern in the statement released after the October meeting. By this time, production prices were rising at year-on-year rates in excess of 9 per cent, and this was perceived to be a short-term indicator of possible pressures on consumer prices. Food price developments were also highlighted. Trends in meat prices were a particular concern, as was the fact that higher maize prices were still not fully reflected in grain product prices at the consumer level.

Finally, oil prices remained a risk factor over the past months, although by the time of the October meeting, the price of Brent crude had fallen to below US$60 per barrel. The MPC welcomed this development, particularly at the time of a depreciating rand. Nevertheless the committee still viewed the oil price as a potential risk given the tight supply and demand conditions in the market, the sensitivity of oil prices to geopolitical tensions and the OPEC response to the downward trend in the price.

By October there had as yet been little response to the changes in interest rates as demand and credit extension remained robust. However, the MPC recognised that there are lags in the responsiveness to interest rate changes. For example, the biggest component of credit extension is mortgage advances. Given the time taken to effect property transfers, the current mortgages that are being registered probably reflect transactions that were undertaken two to three months ago. One tentative indication of a possible slowdown in demand growth has been seen in new motor vehicle sales which declined by 3,6 per cent in September on a month-on-month basis. In the third quarter of this year, sales of new motor vehicles declined by 0,3 per cent. The MPC carefully monitors the response to the repo rate increases, and although inflation is still expected to remain within the target range, albeit at the upper end, the risks are still seen to be on the upside.

The outlook for inflation

The outlook and uncertainties relating to some of the international and domestic factors that are considered by the MPC in setting monetary policy, including indicators of inflation expectations and the fan chart representation of the Bank's forecast, are discussed below.

International outlook

The world economy continues to perform well, with broad-based expansion experienced in the first half of 2006. Inflation in most major countries remains low by historical standards, although sustained high rates of global growth have absorbed spare capacity and signs of inflationary pressures are beginning to emerge in a number of countries. According to the projections published by the IMF in the September 2006 *World Economic Outlook* (WEO), reproduced in Table 8, world inflation will be 3,8 per cent in 2006 and 3,7 per cent in 2007. While the inflation projection for 2006 is unchanged from that published in the April 2006 WEO, the projection for 2007 has been revised upward by 0,2 percentage points.

Table 8 reveals that global growth is projected at 5,1 and 4,9 per cent in 2006 and 2007, respectively. Both projections are 0,2 percentage points higher than those published in the April 2006 WEO, although the IMF anticipates the balance of risks to be decidedly on the downside. These risks include the possibility of higher interest rates as monetary policy tightens in response to building inflationary pressure; the threat of volatility in the oil market related primarily to ongoing geopolitical uncertainties; and the potential for a slowdown in the US economy partly owing to the cooling down of the housing market. The potential for a disorderly unwinding of global imbalances remains a concern, even though a smooth unwinding of these imbalances is seen to be the most likely outcome.

Table 8 IMF projections of world growth and inflation for 2006 and 2007
Per cent

	Real GDP				Inflation rates			
	2006		2007		2006		2007	
World	**(4,9)**	**5,1**	**(4,7)**	**4,9**	**(3,8)**	**3,8**	**(3,5)**	**3,7**
Advanced economies	**(3,0)**	**3,1**	**(2,8)**	**2,7**	**(2,3)**	**2,6**	**(2,1)**	**2,3**
USA	(3,4)	3,4	(3,3)	2,9	(3,2)	3,6	(2,5)	2,9
Japan	(2,8)	2,7	(2,1)	2,1	(0,3)	0,3	(0,6)	0,7
Euro area	(2,0)	2,4	(1,9)	2,0	(2,1)	2,3	(2,2)	2,4
United Kingdom	(2,5)	2,7	(2,7)	2,7	(1,9)	2,3	(1,9)	2,4
Other advanced economies	(4,1)	4,1	(3,7)	3,7	(2,3)	2,3	(2,1)	2,2
Other emerging-market and developing countries	**(6,9)**	**7,3**	**(6,6)**	**7,2**	**(5,4)**	**5,2**	**(4,8)**	**5,0**
Africa	(5,7)	5,4	(5,5)	5,9	(9,1)	9,9	(7,3)	10,6
Central and eastern Europe	(5,2)	5,3	(4,8)	5,0	(4,1)	5,3	(3,4)	4,6
Commonwealth of Independent States	(6,0)	6,8	(6,1)	6,5	(10,4)	9,6	(9,7)	9,2
Developing Asia	(8,2)	8,7	(8,0)	8,6	(3,9)	3,8	(3,5)	3,6
China	(9,5)	10,0	(9,0)	10,0	(2,0)	1,5	(2,2)	2,2
India	(7,3)	8,3	(7,0)	7,3	(4,8)	5,6	(4,9)	5,3
Middle East	(5,7)	5,8	(5,4)	5,4	(8,7)	7,1	(8,5)	7,9
Western hemisphere	(4,3)	4,8	(3,6)	4,2	(5,8)	5,6	(5,6)	5,2

IMF projections for 2006 and 2007 as at April 2006 in parentheses

Source: IMF *World Economic Outlook*, April and September 2006

Growth in the US, while still strong, is slowing in response to developments in the housing market, higher fuel costs and a tighter monetary policy environment. It is expected that the economy will grow by around 3,4 per cent in 2006 before slowing to 2,9 per cent in 2007. Inflation is expected to be 3,6 per cent in 2006 and 2,9 per cent in 2007. For both 2006 and 2007, the inflation rates forecast for the US reflect an upward revision from the April WEO.

In the euro area, it is expected that growth will slow to 2,0 per cent in 2007 from 2,4 per cent in 2006, although both projections have been revised upwards from those published in April. Inflationary pressures continue to build, with inflation expected to average 2,3 per cent in 2006 before edging up to 2,4 per cent in 2007. Domestic activity in Japan has been supported by continued strength in consumption and business investment spending, although growth is expected to slow from 2,7 per cent in 2006 to 2,1 per cent in 2007. Inflation is expected to increase from 0,3 per cent in 2006 to 0,7 per cent in 2007. The UK economy is expected to expand by 2,7 per cent in both 2006 and 2007, with expected inflation rates closely resembling those of the euro area.

Emerging-market and developing countries appear set to continue their recent strong growth performances, and are projected to grow at 7,3 and 7,2 per cent, respectively, in 2006 and 2007. Growth in developing Asia, with strong contributions from China and India, is expected to be 8,7 per cent this year and 8,6 per cent in 2007. Compared to the forecasts in the April WEO, these rates represent increases of 0,5 and 0,6 percentage points, respectively. Africa, and in particular sub-Saharan Africa, is projected to extend its strongest period of sustained economic expansion since the early 1970s, growing at 5,2 per cent this year and by 6,3 per cent in 2007 as oil output recovers in Nigeria and new oil fields in Angola and Equatorial Guinea come on stream.

The IMF's projection that growth will slow in the advanced economies is supported by the latest OECD composite leading indicators (CLIs). August 2006 data show weakening performance in the CLI's six-month rate of change in all the G-7 economies except Canada. The CLI for the OECD area decreased by 0,1 percentage points from 109,7 in July to 109,6 in August, and its six-month rate of change declined for the fifth consecutive month.

Finally, crude oil prices remain a volatile factor in the international environment. Although prices have fallen below US$60 per barrel recently, OPEC will trim its daily production of crude oil by 1,2 million barrels from the beginning of November. Oil prices also remain sensitive to geopolitical developments. The outlook as indicated by the futures price of Brent crude oil is for oil prices in the region of US$64,50 per barrel in March 2007 (futures prices as at 26 October were presented in Figure 7).

Outlook for domestic demand and supply

The outlook for the South African economy remains favourable, but most forecasts suggest that the growth rate for 2006 will slow to below the 4,9 per cent recorded last year. Although it is too early to assess fully the impact of monetary policy actions, and even though indicators such as sales of new motor vehicles suggest some slowing, domestic demand remains resilient and continued high levels of consumer and business confidence indicate that significant strength will be sustained in the domestic economy into the second half of 2006.

The latest Reuters consensus forecast, based on the September 2006 survey, is for real GDP growth of 4,3 per cent in 2006 and 2007. These forecasts represent the mean of 16 individual forecasts ranging between 4,0 per cent and 4,6 per cent for 2006, and between 3,8 per cent and 5,5 per cent in 2007. The National Treasury in its MTBPS expects real economic growth of 4,4 per cent in both 2006 and 2007.

Household consumption expenditure is expected to ease somewhat from the rapid pace of the past two years. Consumer confidence, as measured by the FNB/BER consumer confidence index, declined modestly by 3 percentage points to +17 in the third quarter of 2006. The relatively high level of overall consumer confidence (zero is neutral, and the reading for the third quarter is only 4 percentage points below the all-time high achieved in the first quarter) implies sustained buoyancy in consumer spending. However, the recent interest rate changes and increasing levels of household debt, as well as a further cooling down of house prices are expected to moderate consumer spending somewhat going forward.

By contrast, government consumption outlays can be expected to remain high given government's stated objectives as set out in the most recent MTBPS. Fixed capital formation growth will probably accelerate in 2007 given that fiscal policy has become more explicitly growth oriented with greater emphasis placed on the Accelerated and

Shared Growth Initiative of South Africa (ASGISA), plant and equipment expansions driven by high and increasing levels of capacity utilisation in various industries, and escalating infrastructural investment associated with the 2010 Soccer World Cup.

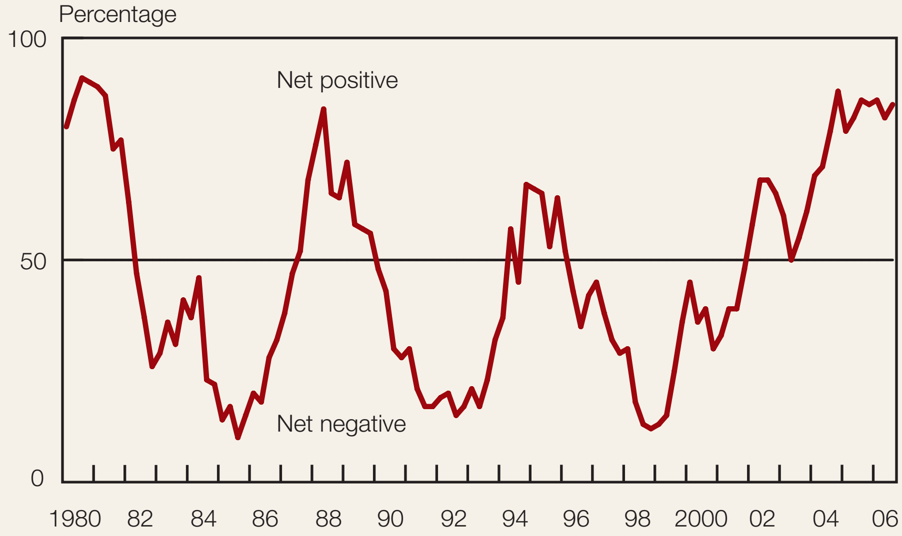
Business conditions indicators, discussed in more detail in Box 2, suggest that business confidence remains upbeat. The RMB/BER Business Confidence Index, which reports the gross percentage of respondents who perceive business conditions as satisfactory, rose to 85 per cent in the third quarter of 2006, pointing to sustained strong growth in the broader economy. While there is some evidence in certain subsectors of slowing business volumes, respondents' improving pricing power boosted confidence. The Trade Activity Index, compiled from the Absa/SACOB Trade Conditions Survey, registered a reading of 56 in August 2006 compared with 54 in July. The rise in the Trade Activity Index can be ascribed to a higher proportion of respondents who reported an increase in sales, new orders and supplier deliveries. The seasonally adjusted Investec/BER Purchasing Managers Index (PMI), which is a barometer of manufacturing activity, declined to 59,8 index points in August 2006, reversing the increase to a record high of 63,2 points in July. Manufacturing activity remains lively, despite the dip in the index, with supportive domestic demand conditions and export prospects improving on the back of a more competitive currency.

Box 2 Selected business conditions indicators

While monetary policy needs to be forward looking, much of the published official data is by its nature historical. Monetary policy decision-making is therefore based on a multi-criteria assessment using numerous forward-looking indicators, many of them survey-based and compiled by different institutions. A subset of these indicators comprising surveys that measure business confidence and trade conditions are discussed in this box. Three of the regular business surveys that are discussed in this *Review* are the RMB/BER Business Confidence Index, the Absa/SACOB Trade Conditions Survey and the Investec/BER Purchasing Managers Index (PMI).

Measures of business confidence provide important information regarding the current and expected state of the economy. It is widely recognised that business people's subjective individual expectations play a key role in economic developments. The Bureau for Economic research (BER) derives the RMB/BER business confidence index from the results of quarterly business surveys, conducted among some 940 manufacturers, retailers, wholesalers, the motor trade, building contractors, architects, quantity surveyors, engineers, manufacturing purchasing

Figure B2.1 RMB/BER Business confidence index



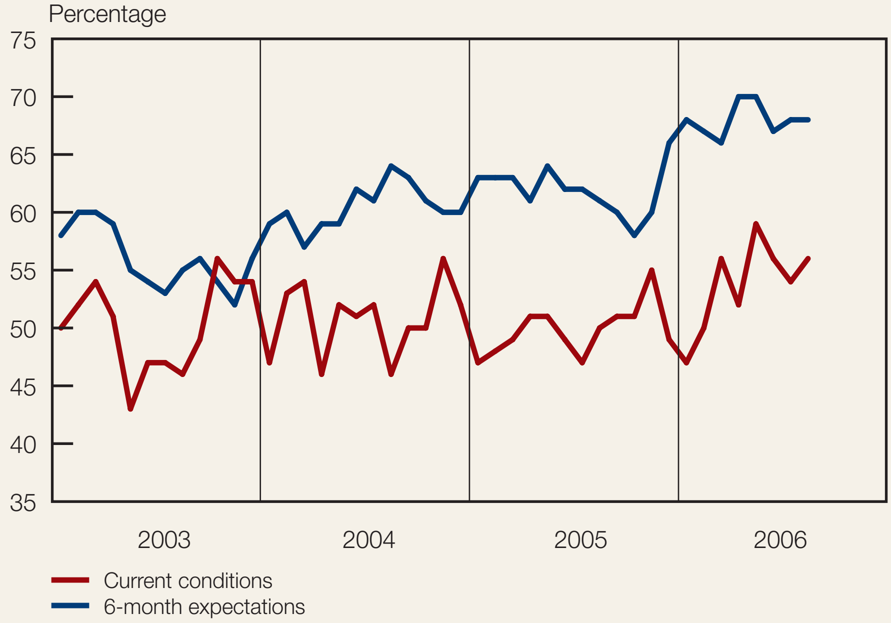
Sources: RMB and BER

managers, banks, asset managers and life insurers. The business survey questionnaire contains questions on, among other things, current and expected developments regarding sales, orders, employment, inventories, selling prices and constraints. All the above have an impact on business confidence. Poor sales, for instance, dampen confidence, as will a lack of orders received. The various determinants listed above do not always have a similar impact on confidence. This implies that the responses need to be weighted in order to obtain a reliable composite index. The weights do not remain constant over the course of the business cycle. Furthermore, it is difficult to use conventional statistical measures to obtain a weighted index based on subjective input.

The Trade Conditions Survey for South Africa is compiled by SACOB and is supported financially by Absa. The survey is conducted monthly to reflect the view, by business, on the levels of trade in the South African economy. It provides the following indices:

- SA Trade Activity Index (SATAI) – measures the view of business on current trade activity for the past month.
- SA Trade Expectations Index (SATEI) – measures the expectations of business for trade conditions six months ahead.

Figure B2.2 Trade conditions

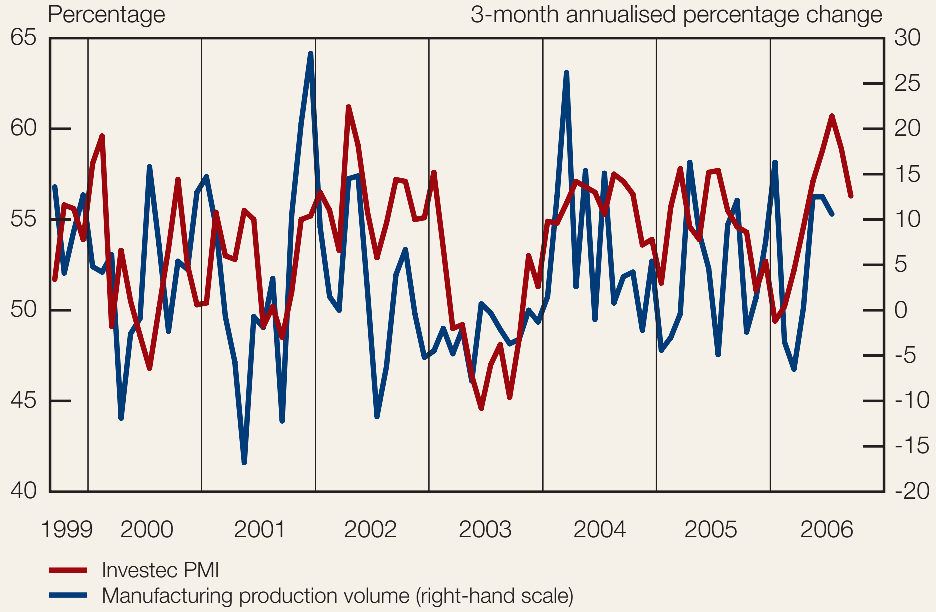


Sources: Absa and SACOB

This survey reflects a monthly business assessment of the trade environment in the country. The SATAI and SATEI are composite indices of sales volumes, new orders, supplier deliveries, inventory levels and employment. Although the SATAI and SATEI are the two most prominent indices of the survey, the overview of trading conditions also reports on inventory holdings, new orders, backlog on orders received, supplier deliveries, input and selling-price movements, export and import activity of business, and job creation activities and prospects. Approximately 750 businesses are polled.

The PMI is an economic activity index based on a survey conducted by the BER in conjunction with the Institute of Purchasing Managers in South Africa and sponsored by Investec Asset Management. The index is compiled on a monthly basis by the BER in collaboration with the Institute of Purchasing and Supply South Africa (IPSA) and focuses on business conditions in the manufacturing sector. Around 280 manufacturers are included in the sample. In all countries for which PMIs are available, the index serves as an important indicator of business conditions.

Figure B2.3 Investec Purchasing Managers Index



Source: Investec and BER

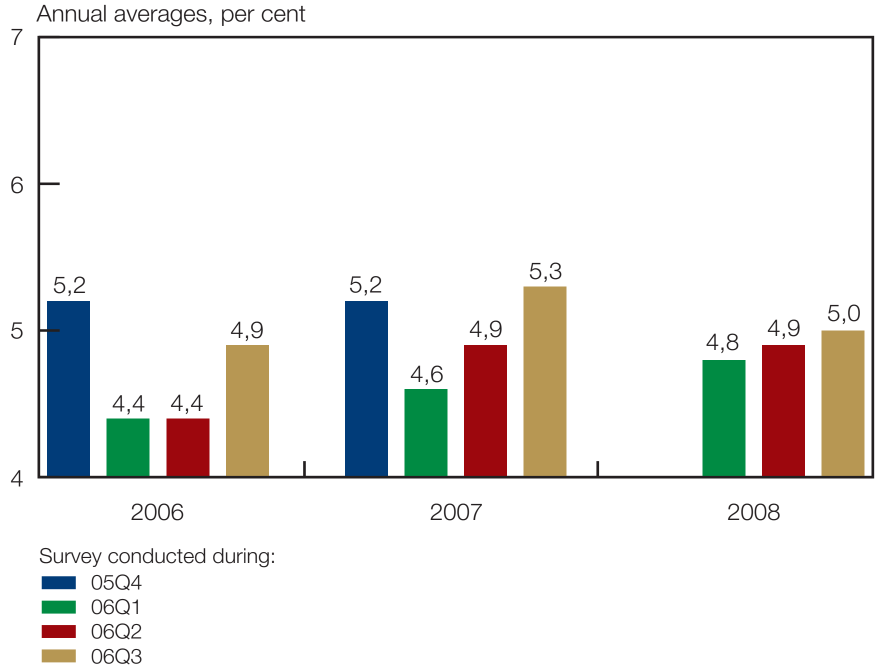
The BER questionnaire for the PMI consists of nine questions on the monthly changes in business conditions in the manufacturing sector. The respondents have to indicate qualitative changes only, i.e. whether a particular activity has increased, decreased or remained unchanged. The questions focus on business activity (production), new sales orders, employment, backlog of sales orders, purchasing inventories, purchasing commitments, purchasing supplier deliveries, purchasing prices and purchasing conditions. An index is compiled from the responses to each question. The index is constructed as the sum of the percentage of respondents who indicated an increase plus one-half of the percentage of respondents that indicated no change. This provides an index that ranges between 0 and 100, with 0 indicating a decline experienced by all the respondents and 100 indicating an increase experienced by all the respondents. An index value of more than 50 indicates increased activity. The questionnaires are completed during the second and third week of every month and processed during the final week of the month. The results are made available on the first working day of the following month.

Indicators of inflation expectations

Measures of CPIX inflation expectations have risen recently, although they remain consistent with the inflation target range of 3 to 6 per cent. The results of the latest BER quarterly survey of inflation expectations in the South African economy show that the average expectation for 2006 is 4,9 per cent, rising slightly to 5,3 per cent for 2007 and then decreasing again to 5,0 per cent in 2008 (Figure 15). Compared to the survey undertaken in the second quarter of 2006, these expectations have been revised upward by 0,5 percentage points for 2006, by 0,4 percentage points for 2007, and by 0,1 percentage points for 2008.

Table 9 shows the inflation expectations of financial analysts, business executives and trade unions. All expect that CPIX inflation will be higher in 2007 than in 2006, and all have revised upward their forecasts for both years since the survey undertaken in the

Figure 15 BER surveys of CPIX inflation expectations



Source: Bureau for Economic Research, University of Stellenbosch

second quarter of the year. With respect to 2008, analysts and union officials expect CPIX inflation to slow once more to 2006 levels. Business executives expect it to remain at the level they projected for 2007. While analysts and business executives revised their 2008 expectations upward, trade unions revised theirs downward, and now expect CPIX inflation to average 4,9 per cent in 2008.

Table 9 BER survey of CPIX inflation expectations: Third quarter 2006

Per cent

	2006	2007	2008
1. Financial analysts	[4,4] 4,8	[4,8] 5,4	[4,5] 4,7
2. Business	[4,5] 5,0	[4,8] 5,4	[5,0] 5,4
3. Trade unions	[4,4] 5,0	[5,0] 5,2	[5,1] 4,9
Average 1 – 3	[4,4] 4,9	[4,9] 5,3	[4,9] 5,0

Second-quarter 2006 results in parentheses

Source: Bureau for Economic Research, University of Stellenbosch

The BER inflation expectations are closely aligned with those obtained from the September Reuters survey of long-term forecasts for the South African economy, which reports that CPIX inflation is expected to average 4,7 per cent in 2006, rising to 5,3 per cent in 2007 and then receding to 4,7 per cent in 2008 (Table 10). The median forecasts are unchanged from the previous survey except for 2008, where CPIX inflation is expected to be 4,7 per cent as opposed to 4,4 per cent in the August survey.

Table 10 Reuters survey of CPIX forecasts: September 2006
Per cent

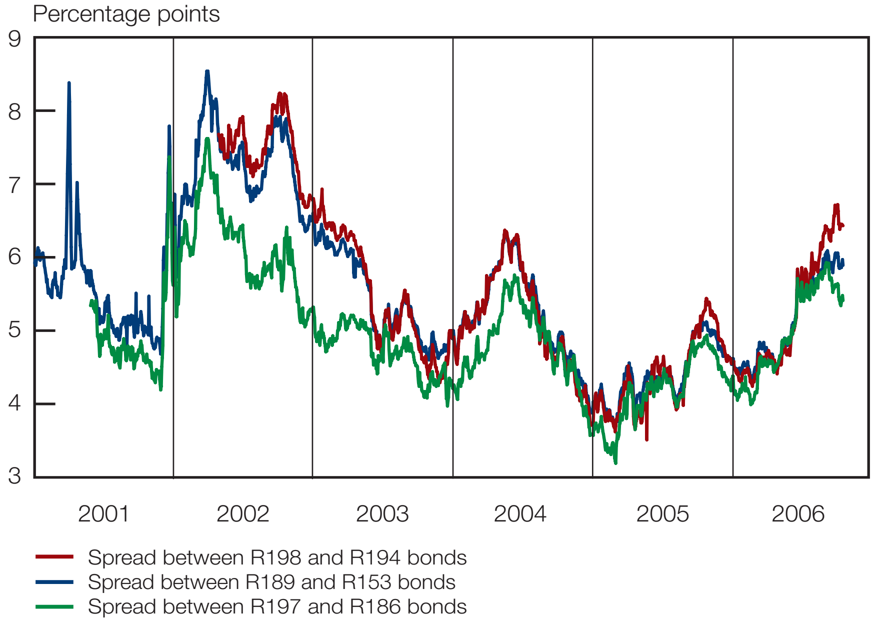
	2006	2007	2008
1. Mean	[4,7] 4,7	[5,3] 5,3	[4,4] 4,7
2. Median	[4,7] 4,7	[5,2] 5,2	[4,4] 4,7
3. Highest	[5,0] 4,9	[6,0] 6,0	[5,1] 5,8
4. Lowest	[4,6] 4,5	[4,5] 4,3	[3,9] 3,8
Number of forecasters	[15] 16	[15] 17	[9] 12

August survey results in parentheses

Source: Reuters

Market-based expectations of inflation, provided by the breakeven inflation rates presented in Figure 16, also suggest that inflation expectations have risen. These rates are measured as the spreads between the yields on South African government CPI inflation-linked bonds and conventional nominal bonds of similar maturity, and assuming no differences in the liquidity of the bonds and their payment patterns and no changes to the risk premium associated with future inflation, they provide an indication of expected inflation over the period until the bond matures.

Figure 16 Breakeven inflation rates



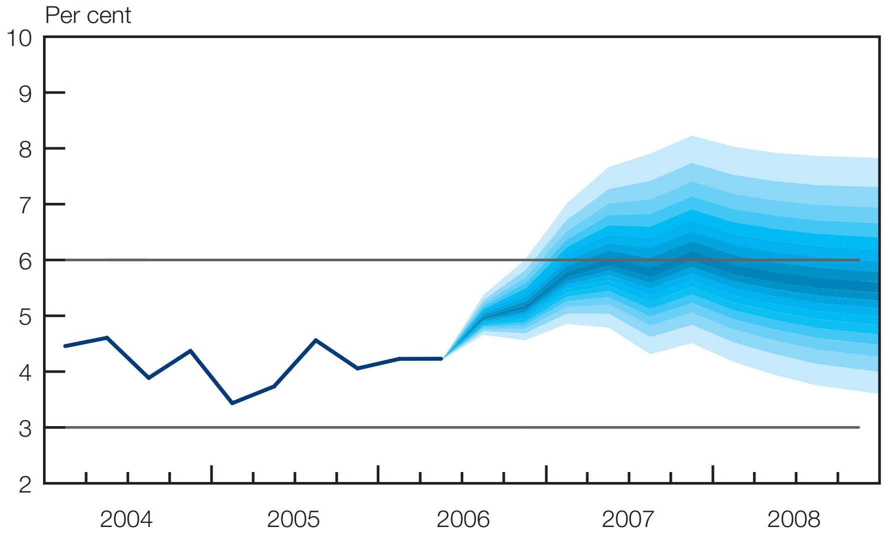
Breakeven inflation rates obtained from the R197 (maturing 2023), R189 (maturing 2013) and R198 (maturing 2008) inflation-linked bonds have increased from just above 4,0 per cent in late February 2006 to between 5,4 per cent for the longer-dated and 6,4 per cent for the shorter-dated spreads in late October. The spreads on both the R198 and R189 bonds have been above the upper limit of the inflation target range at times during September and October 2006.

The Reserve Bank inflation forecast

Figure 17 presents the Bank's latest quarterly forecast for CPIX inflation. The fan chart has a forecast horizon running to the fourth quarter of 2008, and was presented at the

MPC meeting on 11 and 12 October 2006. The Bank's forecast is for the CPIX inflation rate to rise towards the upper end of the target range and remain at levels of around 6 per cent between the second and fourth quarters of 2007, before declining gradually to reach approximately 5,4 per cent by the end of the forecast period.

Figure 17 CPIX forecast



Note: The fan chart uses confidence bands to depict varying degrees of certainty. The darkest band of the fan chart covers the most likely 10 per cent of probable outcomes foreseen for CPIX inflation, including the central projection. Each successive band, shaded slightly lighter and added on either side of the central band, adds a further 10 per cent to the probability until the whole shaded area depicts a 90 per cent confidence interval (see Box 4 "Understanding the fan chart" on p. 27 of the March 2001 *Monetary Policy Review).*

A number of factors pose a risk to future outcomes. Strong household consumption expenditure, supported by higher asset prices and increased credit extension to the private sector, remains one of the primary risk factors which threaten higher inflation. The lagged impact of the most recent interest rate changes will however need to be monitored in this regard. Recent developments in food prices and in the exchange rate might also pose a risk to the inflation outlook. The impact of the latter depends on the extent of the pass-through from the depreciation since early May to consumer prices, and on developments on the current account of the balance of payments, in international commodity prices, and in the response to the general tightening of monetary policy globally. Finally, although oil prices have receded recently, the MPC considers the risk to inflation from this source still to be on the upside.

Inflation-targeting central banks communicate regularly with the public on monetary policy issues in an attempt to make monetary policy transparent. In this regard, the *Monetary Policy Review* has since 2001 presented the Bank's views on current and future developments in the inflation environment on a biannual basis, including the Bank's forecast for CPIX inflation presented in the form of a fan chart. Box 3 provides an evaluation of the accuracy of these projections.

Box 3 The relative accuracy of the South African Reserve Bank inflation forecasts[1]

Forecasters regularly examine their forecast performance in order to improve their forecast capacity, models and modelling techniques and to examine their understanding of the workings of the economy. This is also an appropriate exercise for central banks since monetary policy is in essence forward-looking and models and forecasts play an important role in the policy formulation process.

Forecasts are not expected to be fully accurate, given the complexity and ever-changing nature of the economy as well as a constant procession of unforeseen events. It is also true that in some instances one cannot predict with any accuracy the outcome of certain variables (e.g. stock market price developments or exchange rate movements).

In this note, the accuracy of the forecasts for CPIX inflation when using the Bank's core model[2], ARIMA model[3] and disaggregated inflation model[4], is compared with two alternative forecasts, namely a naïve forecast[5] and the Reuters Consensus Forecast.[6]

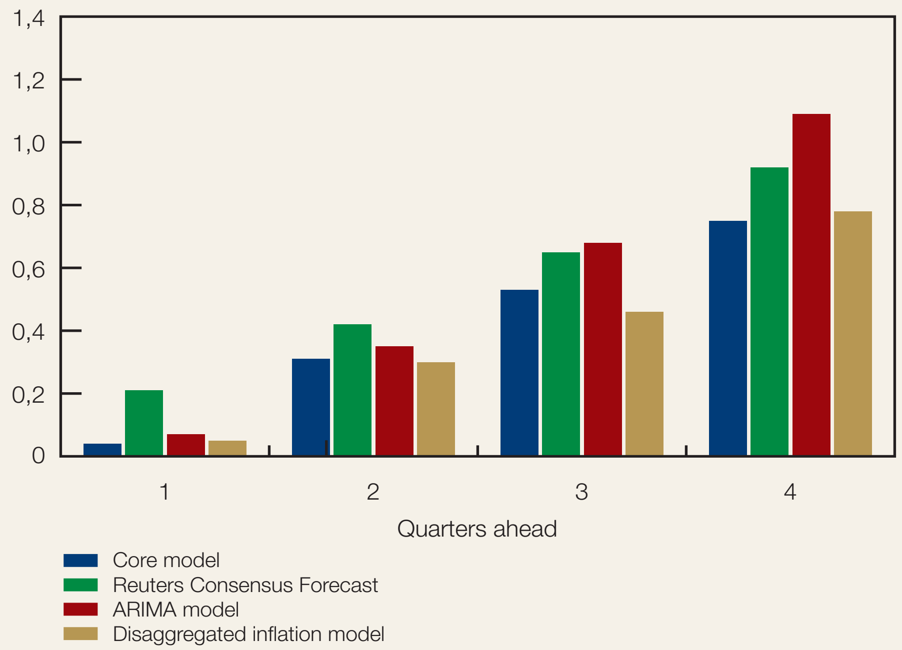
A forecast is conditional on the information that is available at the time it is prepared. In addition, a complete set of reliable data may not be available in time for the preparation of the forecasts for the MPC. Instead there will be a large amount of partial information and an important task for forecasting staff is to "fill in" the gaps. Data are also often subject to measurement error and revision, which at times could be substantial, and a model can be a useful device for assessing whether a particular revision needs to be treated with caution.

Although the forecast plays a prominent role, it is important to stress that there is no mechanical relationship between the forecast and the final monetary policy decision, i.e. it does not dictate the policy decision. The final decision by the MPC has to be a professional judgement based not only on the forecast but also on the analysis of a substantial amount of other information provided to the MPC.

The forecast accuracy analysis presented here is based on both the mean (i.e. average) value of the forecast errors and its variance or standard deviation (as measured by the root mean squared error). The mean value of the forecast errors is used not only as a measure of accuracy, but also to give an indication of bias, i.e. systematic over or underestimation.

A comparison of the average forecast errors of the Bank's models and the Reuters Survey over the period May 2003 to December 2005 is presented in Figure B3.1. It is clear that all the forecasts have

Figure B3.1 Average forecast error



Source: South African Reserve Bank and Reuters

1 Ehlers, R and Smal, M M. 2006. The accuracy of the South African Reserve Bank inflation forecast. Report prepared for the Monetary Policy Committee of the South African Reserve Bank, Pretoria. April.

2 The core model is a simultaneous equation macro-econometric model consisting of 24 stochastic equations and several identities. A benefit of the core model is that it allows the Bank to address uncertainty within a well-defined conceptual framework, and examine the key risks associated with any forecast in a quantitative sense.

3 The ARIMA model is an Auto Regressive Integrated Moving Average model based on the historical properties of the series.

4 In the disaggregated inflation model the main components of the CPIX index are forecasted individually and then aggregated with the appropriate weights to calculate the forecast for CPIX.

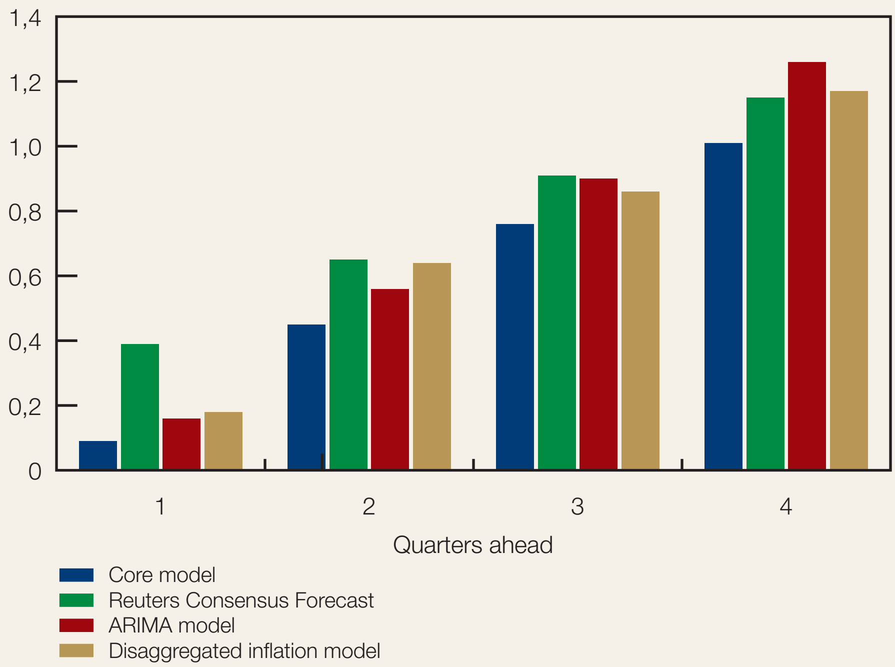
5 Naïve models include autoregressive models such as an AR(1) model and random walk models.

6 The Reuters Survey is published monthly and contains forecasts of several macroeconomic variables over a relatively long time span. The forecasters consist of economists from major investment banks, corporations, consulting firms, and academic institutions, using different methods and models (unknown to the authors of this article) to produce their forecasts. On average, the survey contains 22 forecasts each month, and many of the forecasters have participated in the survey for several years. This survey thus provides a useful set of forecasts for benchmarking the Bank's performance over time.

average errors which are positive and therefore biased, indicating that both the Bank and the Reuters participants, on average, overestimated the actual outcome of CPIX inflation over all four the forecast horizons, i.e. one-quarter-ahead to four-quarter-ahead forecasts.

When comparing the root mean square errors over the different forecasting horizons as shown in Figure B3.2, it is evident that, on average, the forecasts by the Bank's models outperform those of the Reuters Consensus Forecast in most instances. The exception is the four-quarter-ahead forecast by both the ARIMA and disaggregated inflation models, although the differences are marginal. However, the result relating to the ARIMA and the disaggregated inflation model was expected since both these models are by nature designed for forecasting over the short term, and are therefore less reliable over the medium to longer term. It also becomes evident that both the forecast errors of the Bank's models and the Reuters Survey increase over the forecast horizon, which is to be expected since uncertainty increases over time.

Figure B3.2 Root mean square error



Source: South African Reserve Bank and Reuters

When a naïve model is used as a benchmark for the average errors, Theil's U-statistic[7] indicates that all three of the Bank's models and the Reuters Consensus Forecast outperform a naïve AR(1) model quite convincingly by remaining well below the threshold value of one over all four forecast horizons.

The Bank's forecasting performance can be compared with those of the 22 individual other forecasting agencies included in the Reuters Consensus Forecast.[8] The results show that the forecast prepared by the Bank's core model performs consistently better over the one, two and three-quarter-ahead forecast period and is in the fourth position over the four-quarter-ahead forecasting period. Comparisons of the inflation forecast errors across the different horizons reveal that, on average, no other forecasting agency has consistently produced more accurate inflation forecasts than the Bank in the period May 2003 to December 2005. Furthermore, the analysis shows that the Reuters Consensus Forecast performs generally better when compared to most individual forecasters.

The Bank's inflation forecasting performance may also be compared to that of other central banks and international agencies that publish inflation accuracy reports. When the average one-year-ahead inflation forecasting errors of these countries are viewed relative to their respective variances as a measure of accuracy, the Bank's forecasting performance compares well with that of reputable agencies.

7 This statistic is defined as the ratio of the RMSE of the forecast and the naïve model.

8 The Reuters Consensus Forecast is treated in this instance as a forecasting entity in its own right. It is therefore not the average of the forecast errors of all the participants in the Reuters Survey.

Assessment and conclusion

The past few months has seen a deterioration in the inflation outlook. On the international front, some respite has been seen from the higher international oil prices which have moderated in recent weeks. However, the vulnerability of the oil prices to geopolitical events, the continued strong demand for oil and the tight supply conditions point to a market with upside risk. World inflation appears to be under control particularly in the wake of the global monetary tightening. Despite the higher world interest rates, however, global growth is expected to remain strong.

Domestically, consumer demand pressures and the exchange rate appear to pose the major risks to the inflation outlook. Recent exchange rate developments were in part a reaction to the deficit on the current account of the balance of payments, but they also form a part of the macroeconomic adjustment process. In order for the exchange rate to play its part in the adjustment process it is important that the exchange rate changes are not simply offset by higher inflation. Monetary policy vigilance is therefore required.

Future monetary policy responses will be guided in part by the reaction of demand to the current levels of interest rates. It is still too early to assess the effectiveness of previous monetary policy actions on consumer demand and these developments will be closely watched. To date the MPC has chosen to move interest rates at a moderate pace in order to minimise the impact on the production side of the economy. The focus of the Monetary Policy Committee remains on the inflation target, and it will continue to strive to maintain CPIX inflation within the 3-to-6-per-cent target range.