

## **2011 MONETARY POLICY STATEMENT MID-TERM REVIEW**

### **1. Introduction**

- 1.1 *The Mid-Term Review (MTR) of the 2011 Monetary Policy Statement (MPS) evaluates progress made in the first half of the year in maintaining inflation within the 3 – 6 percent medium-term objective range. The review also assesses key financial and economic developments that may influence the inflation outlook and the likely monetary policy response in the latter part of the year to maintain price stability. Publishing the Bank’s inflation outlook and the prospective monetary policy stance fosters public expectations of low, sustainable and predictable inflation.*
- 1.2 *The Bank’s definition of price stability is when inflation is within the medium-term objective range of 3 – 6 percent that is consistent with sustainable long-run growth of the economy. Moreover, low inflation that is close to trading partner inflation contributes to the stability of the real effective exchange rate (REER) which, in turn, promotes international price competitiveness of domestic producers and economic growth.*
- 1.3 *As anticipated at the beginning of the year, economic recovery continued in the first half of 2011, albeit with below-trend output and associated low demand pressures on inflation. Nevertheless, as earlier projected, inflation rose in the first half of 2011 from 7.4 percent in December 2010 and peaked at 8.5 percent (in February and March 2011), before falling to 7.9 percent in June.<sup>1</sup> The upside influence on inflation in the first half of the year included adjustment of administered prices (electricity tariffs and fuel prices) and fees for private schools, while the dissipation of the effects of last year’s increase in value added tax (VAT) and the reduction in telecommunications tariffs helped to lower inflation. The Bank Rate was unchanged at 9.5 percent in the first half of 2011, following a 50 basis point reduction in December 2010, as the medium-term outlook for price developments was positive. Going forward, it is anticipated that inflation will remain above the objective range in the short term, but should fall within the 3 – 6 percent medium-term objective range in the second half of 2012.*
- 1.4 *World economic recovery is projected to continue at a moderate pace, with a likelihood of further weakness. In part, the moderation in world output expansion reflects the impact of aggressive fiscal consolidation measures across major economies. However, the degree to which the fiscal measures will be successful in reducing budget deficits and bringing sovereign debt to sustainable levels remains uncertain for several countries. Meanwhile, continuing political unrest in North Africa and the Middle East poses a risk to international oil prices and supply. World GDP growth is, therefore, projected to decelerate from 5.1 percent in 2010 to 4.3 percent in 2011 and recover to 4.5 percent in 2012, mostly underpinned by strong growth in emerging market and developing economies.*

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<sup>1</sup> Inflation was marginally lower at 7.8 percent in July.

## **2. Monetary Policy Framework**

- 2.1 *The Bank's monetary policy objective is to attain price stability, and this is defined as inflation in the medium-term objective range of 3 – 6 percent. A low and predictable level of inflation contributes to sustainable economic growth and development by promoting savings mobilisation, productive investment and international competitiveness of domestic producers. A sustained rise in inflation is not conducive to economic growth as it discourages financial saving, generates investment uncertainties and erodes the purchasing power of incomes, thereby reducing living standards. In contrast, a prolonged period of rapidly falling inflation could signal a decline in economic performance, which could require monetary policy easing to stimulate growth.*
- 2.2 *The Bank's policy framework entails a forecast-based and forward-looking monetary policy strategy that is focused on the medium term. The medium term, defined as a three-year rolling period, is considered a reasonable time frame over which monetary policy can affect price developments. The medium-term forecast for inflation is derived from an assessment of prospective developments for various determinants of inflation, including domestic demand conditions, changes in prices of imports and exchange rates, adjustment of administered prices and consumption taxes, as well as public expectations with respect to the rate of price changes.*
- 2.3 *The Bank uses interest rates and open market operations to influence demand for goods and services (relative to supply capacity) and, ultimately, price developments in the direction consistent with price stability. In this respect, the policy response to inflationary pressures is based on an evaluation of the sources of inflation and the likely impact on future price developments. In particular, a distinction is made between factors that have a transitory impact (over a period of up to one year)<sup>2</sup>, such as changes in administered prices and consumption taxes, and those that are likely to have an enduring influence on inflation, such as changes in demand conditions, which are subject to monetary policy influence. This approach to policy formulation facilitates appropriate and timely responses to any forecast deviation of inflation from the objective range. In addition, the alternative measures of inflation, viz., headline inflation, 16 percent trimmed mean and inflation excluding administered prices, play an important role in explaining the sources of inflation.*
- 2.4 *An important benefit of achieving the inflation objective is the contribution to the stability of the REER, which supports international competitiveness of domestic industries. In the event that the inflation objective remains higher than forecast inflation of trading partner countries, the crawling band exchange rate arrangement facilitates a gradual downward adjustment of the nominal effective exchange rate (NEER) in order to maintain stability of the REER*
- 2.5 *The Monetary Policy Committee (MPC) meets every six weeks. The Committee reviews inflation forecasts and the monetary policy stance in order to evaluate the current and prospective changes in economic developments that influence the outlook for inflation.*

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<sup>2</sup> *Monetary policy does not normally respond to these factors since the medium term is the relevant time frame for monetary policy to have an effect on the level of prices.*

*This facilitates a timely response to anticipated economic and other events that would result in a significant and lasting deviation of inflation from the objective range.*

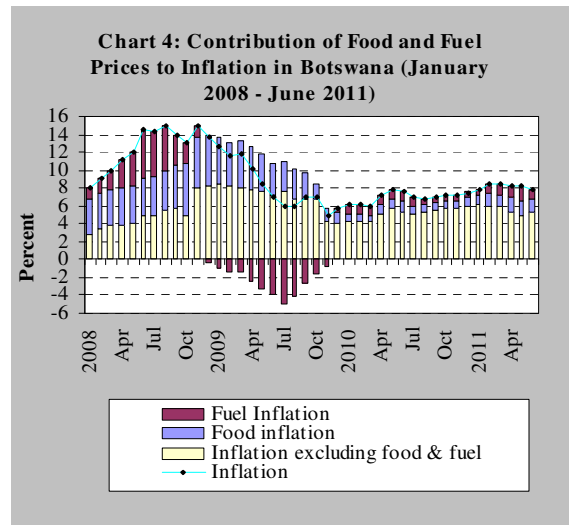
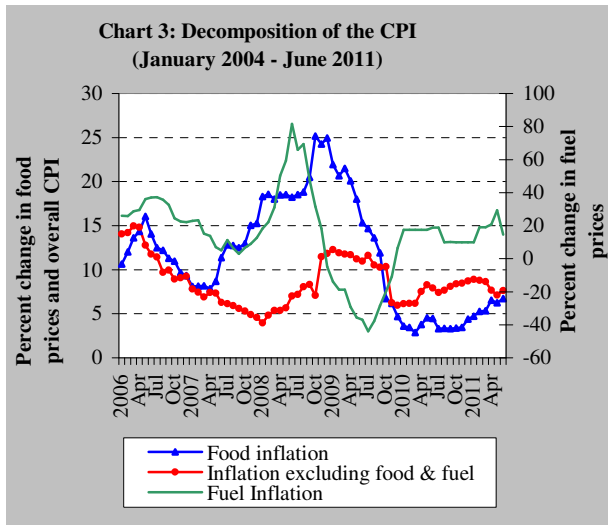
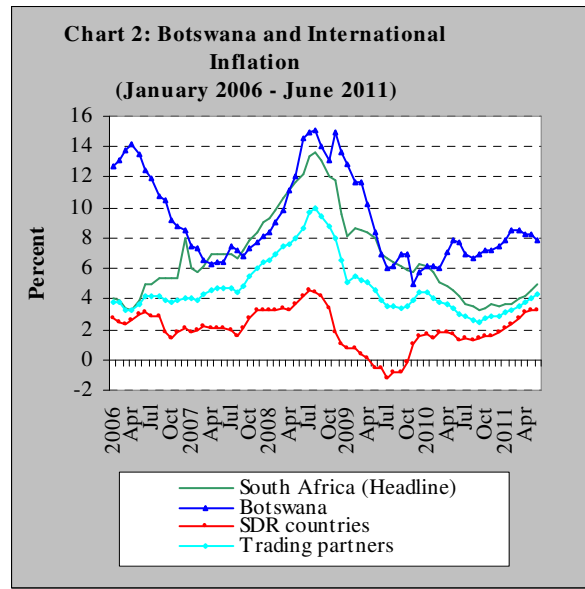
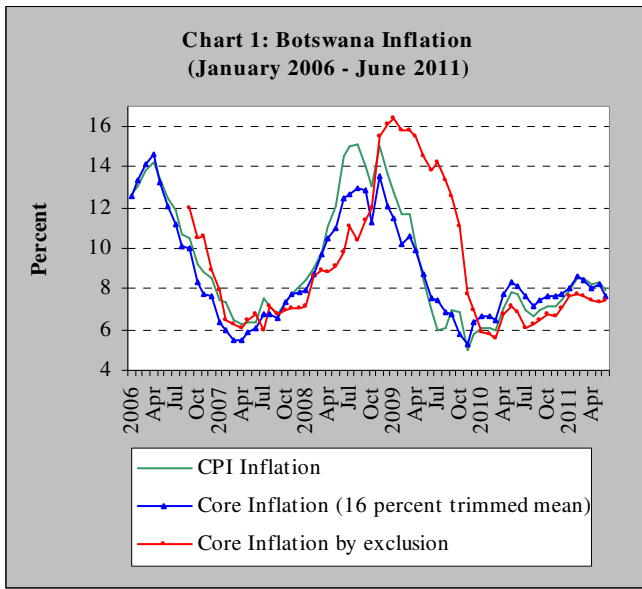
- 2.6 *The Bank's monetary policy framework and implementation are regularly communicated to the public through the publication of the annual Monetary Policy Statement, Mid-Term Review of the Monetary Policy Statement and Press Releases following every MPC meeting. Such communication fosters policy transparency, accountability and credibility. It also enhances the degree to which the Bank is likely to succeed in influencing expectations of price stability.*

### **3. *Inflation in the first half of 2011***

- 3.1 *Average inflation in trading partner countries increased from 2.8 percent in December 2010 to 4.3 percent in June 2011 due to higher commodity prices. In South Africa, headline inflation, which is the target measure for the South African Reserve Bank, rose from 3.5 percent in December 2010 to 5 percent in June 2011, mostly reflecting the increase in the cost of food and upward adjustment of administered prices. This meant that inflation remained within South Africa's target range of 3 – 6 percent in the first half of 2011. For the SDR countries, comprising USA, UK, Japan and the euro zone, inflation rose from 1.8 percent to 3.2 percent in the same period (Appendix Chart A3 shows inflation rates for SDR countries).<sup>3</sup>*

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<sup>3</sup> *There was considerable variation in price developments across the constituent economies. For instance, throughout 2010 and in the first half of 2011, UK inflation was significantly higher than that of other SDR countries, but this was partially offset by deflation in Japan.*



Source: Statistics Botswana (previously Central Statistics Office) and Bank of Botswana.

3.2 Domestic inflation averaged 8.3 percent in the first quarter of 2011 (from 7.3 percent in the last quarter of 2010) mainly due to faster annual increase in the cost of food and fuel and upward adjustment of fees for private schools. Subsequently, inflation fell marginally, to an average of 8.1 percent in the second quarter of 2011, held up by the increase in fuel prices (in April and May), which offset the downward trend resulting from the dissipation of the impact of the previous year's increase in VAT. Moreover, electricity tariffs were also increased, more or less at the same rate as in 2010, thus leading to a neutral impact on inflation. Charts 3 and 4 above show the contribution of food and fuel price developments to overall inflation. In terms of monthly developments, inflation increased from 7.4 percent in December 2010 to 8.5 percent in February and March 2011. Thereafter, inflation declined to 8.2 percent in April and 7.9 percent in June. Inflation (excluding administered prices) rose from 7.1 percent in December 2010

to 7.4 percent in June 2011, while the 16 percent trimmed mean inflation eased slightly from 7.7 percent to 7.6 percent in the same period.

- 3.3 *By tradeability, imported tradeables inflation rose from 9.3 percent in December 2010 to 9.6 percent in June 2011. Inflation for domestic tradeables also increased from 5 percent in December 2010 to 6.5 percent in June 2011. Overall, the all tradeables inflation rose from 7.7 percent to 8.5 percent in the same period. Meanwhile, the year-on-year increase in prices for non-tradeables fell from 6.9 percent in December 2010 to 6.4 percent in June 2011, thus reflecting the downward revision of mobile phone tariffs, while last year's increase in the cost of medical services also dropped from the inflation calculation.*
- 3.4 *Domestic demand pressures on inflation were restrained in an environment of below-trend domestic economic activity and modest monetary expansion. Growth in disposable incomes was also sluggish, given the freeze in public service salaries and the increase in VAT. The moderate increase in money supply reflects the impact of the slower rate of increase in government expenditure and net foreign assets, compared to a sharp acceleration of 18 percent in credit. Following the annual growth rate of 7.2 percent in 2010, GDP contracted by 2.2 percent in the first quarter of 2011 (1.1 percent increase in the fourth quarter of 2010), due mostly to a seasonal fall in mining production. Overall, GDP for the twelve months to March 2011 was 4.9 percent higher than the corresponding period in 2010, with a small 0.6 percent increase for the mining sector (reflecting the effect of production planning), while non-mining GDP rose by 6.9 percent in the same period. The rapid annual growth in construction (19.4 percent), agriculture (12.9 percent), manufacturing (9.5 percent), trade (8.3 percent) and transport and communications (5.9 percent) contributed to the healthy non-mining sector expansion.*
- 3.5 *Private sector credit growth in the six months period to June 2011 was 11.3 percent, much higher than the 5.6 percent for the corresponding period in 2010, thus reflecting recovery in economic performance. In this period, household borrowing increased from 4.3 percent in 2010 to 5.6 percent, while lending to private businesses rose by 19.4 percent, compared to 7.5 percent in 2010. In the year to June 2011, credit to the private sector increased by 18 percent, a higher growth rate than the 16.6 percent in the twelve months to June 2010. Credit growth accelerated by 13.4 percent and 23.6 percent in May and June, respectively, due to a marked increase in borrowing by businesses, but also because of the low base associated with the decrease in credit to the business sector in May 2010. However, money supply expansion was moderate at 8.6 percent in the year to May 2011, dampened by sluggish growth in both government expenditure and net foreign assets.*
- 3.6 *Total government recurrent and development spending contracted by 0.8 percent in the twelve months to March 2011, compared to a budgeted 3.7 percent reduction (announced in the 2010 Budget Speech) and 9.6 percent growth for the corresponding period in 2010. Development expenditure contracted by 12.6 percent in the fiscal year ending March 2011, while recurrent spending rose by 5.1 percent. A moderate increase of 1.4 percent in total government spending is budgeted for 2011/12, including a substantial 19.1 percent decline in development expenditure. So far, in the first three months of the fiscal year 2011/12, total recurrent and development spending was 6.5 percent higher than in*

*the corresponding period in 2010/11. The low rate of increase in spending reflects the Government's commitment to prioritising expenditure on projects and returning to a balanced budget in 2012/13. At the same time, there are efforts towards raising revenue, including increasing some of the levies for government services and higher dividends from parastatals. While desirable, the expenditure rationalisation to eliminate the fiscal deficit will, to some extent, reduce the expansionary effect of government spending on other sectors and the broader economy.*

#### **4. Monetary Policy Implementation in the First Half of 2011**

- 4.1 *Globally, monetary policy was conducted in the context of expectations for moderate and uncertain economic recovery, as well as divergent growth rates across regions and countries. In particular, it was anticipated that economic activity would be restrained by the impact of fiscal consolidation measures in some major economies, while emerging market and developing economies would grow at a faster rate, underpinned by both domestic demand and external trade. Meanwhile, it was expected that global inflationary pressures would generally be restrained owing to low levels of capacity utilisation, high rates of unemployment and well-anchored inflation expectations in major economies. Nevertheless, there were signs of inflationary pressures in emerging market economies and upside risks to inflation associated with higher international oil and food prices.*
- 4.2 *In the circumstances, the general thrust of monetary policy in major economies was accommodative, with some central banks maintaining policy interest rates at the low levels set during the global economic crisis (Federal Reserve Bank, Bank of England and Bank of Japan)<sup>4</sup>. On the other hand, emerging market economies, including China, India<sup>5</sup> and Brazil maintained a policy tightening stance to curb inflationary pressures. Thus, capital flows were tilted towards higher yielding emerging market economies, leading to fears of continuing global imbalances and risk of competitive currency devaluations.*
- 4.3 *In Botswana, monetary policy was implemented against the background of economic recovery as buoyed by an improvement in international commodity markets and sustained robust performance of the non-mining sectors. Nevertheless, it was estimated that output would be below trend, thus implying a non-inflationary negative output gap (Appendix II). Furthermore, there were indications that domestic demand pressures would be modest, given the moderate pace of monetary expansion associated with the sluggish growth in both personal incomes and government spending.*
- 4.4 *Generally, inflation was forecast to remain above the objective range in the short term, with prospects for attaining price stability in the medium term. In the circumstances, the medium-term inflation outlook was positive, and was in line with the prognosis for the first half of 2011. The Bank Rate was, therefore, maintained at 9.5 percent in the first half of 2011. Given the unchanged monetary policy stance, there were marginal fluctuations*

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<sup>4</sup> *The European Central Bank, which had also maintained the policy interest rate unchanged from the low level set at the trough of the global recession, increased interest rates in April and July 2011, to forestall inflationary pressures; a further increase is expected later in the year.*

<sup>5</sup> *Inflation rates for China and India are shown in Appendix Chart A4.*

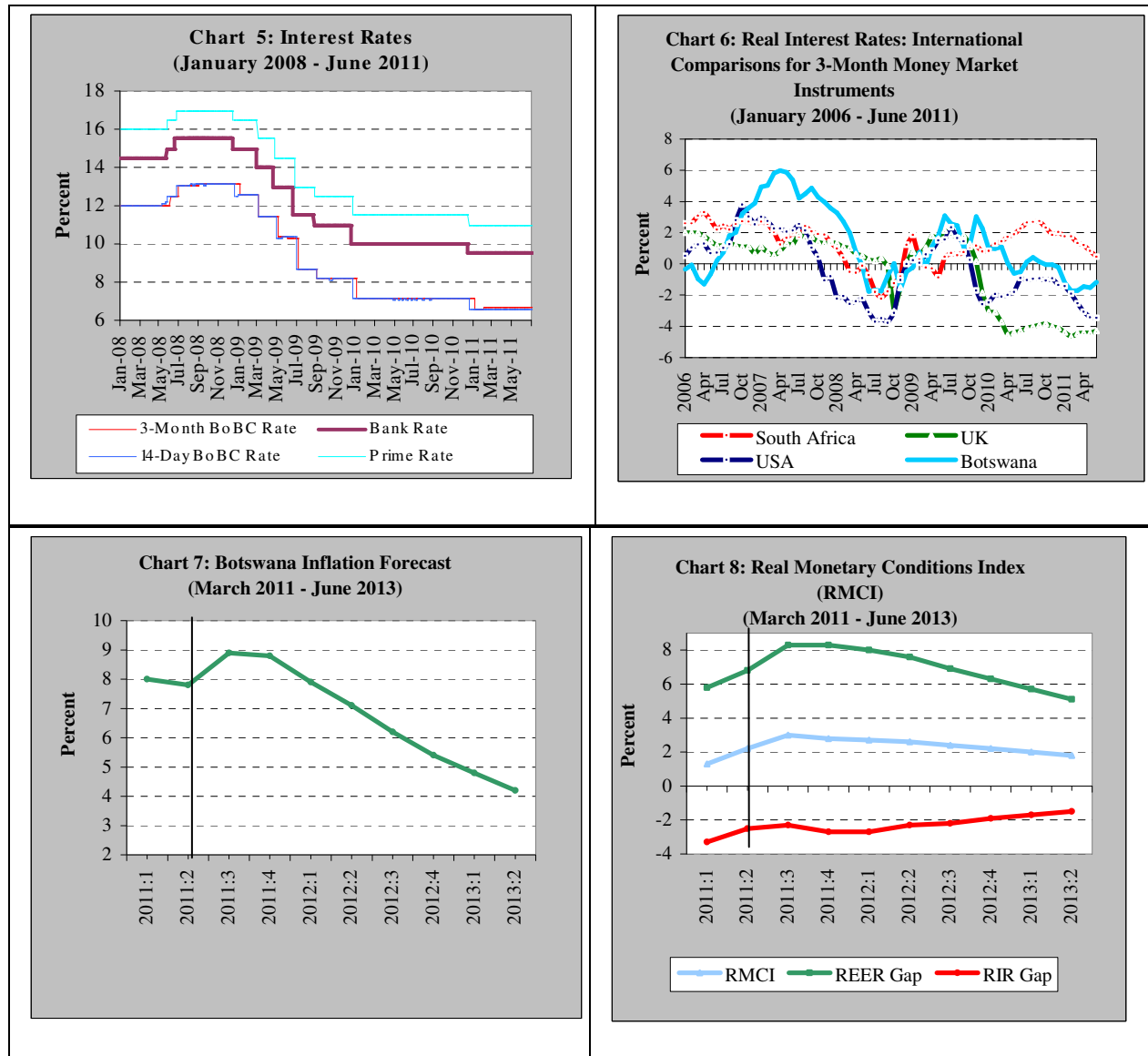
*in money market interest rates in the same period (Chart 6), mainly reflecting changes in the bidding preferences of primary counterparties at auctions<sup>6</sup>. As such, the yield on the 14-day Bank of Botswana Certificate (BoBC) increased slightly from 6.56 percent at the end of December 2010 to 6.57 percent in June 2011, while the 3-month BoBC yield eased from 7.15 percent<sup>7</sup> to 6.64 percent in the same period. The prime lending rate of commercial banks was constant at 11 percent between December 2010 and June 2011, while the 88-day deposit rate fell from 5.49 percent in December 2010 to 5.23 percent in June 2011.*

- 4.5 *In order to reduce the amount of excess liquidity in the banking system and, therefore, contain the cost of monetary operations, the primary reserve requirement was raised from 6.5 percent to 10 percent of Pula deposits at commercial banks effective July 1, 2011. Normally, an increase in the primary reserve requirement ratio implies monetary policy tightening. However, in this instance, the increase is unlikely to constrain supply of credit as, in essence, the funds mopped up through BoBCs are excess to what is required for productive lending.*

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<sup>6</sup> *Quoted yields are based on the weighted average of the winning bids at auction.*

<sup>7</sup> *The 3-month BoBC is auctioned once at the beginning of each month, and the rate stated here was for the result of the auction that was held immediately prior to the MPC meeting in December.*



Source: Bank of Botswana.

- 4.6 As a result of the increase in inflation between December 2010 and June 2011, real interest rates fell and were mostly negative. The 3-month BoBC real interest rate fell from -0.23 percent in December 2010 to -1.17 percent in June 2011. Similarly, the real interest rate for the 14-day BoBC fell from -0.78 percent in December 2010 to -1.23 in June 2011. At the same time, the real prime lending rate fell from 3.35 percent in December 2010 to 2.87 percent in June 2011, while the real 88-day deposit rate declined from -1.78 percent to -2.48 percent in the same period.
- 4.7 As domestic inflation was higher than the average inflation of trading partner countries, the nominal exchange rate of the Pula crawled downwards. Consequently, the nominal effective exchange rate depreciated by 1.3 percent in the six months to June 2011. Bilaterally, the Pula depreciated by 4.9 percent against the SDR (weakening by 1.4 percent against the US dollar), while it appreciated by 1.2 percent against the rand. The



*REER*<sup>8</sup> of the Pula appreciated by 1.1 percent in the six months to June 2011 due to the positive inflation differential between Botswana and its trading partner countries; thus, the rate of crawl only partially offset the inflation differential.

4.8 *Movements in interest rates and the Pula exchange rate are reflected in changes in the real monetary conditions index, which is a measure of the relative tightness or easiness of financing conditions in the economy. In the first half of 2011, the real interest rate gap was negative, thus implying easy financing conditions. However, this effect was more than offset by the restrictive positive real exchange rate gap. Overall, real monetary conditions were relatively tight, albeit stable throughout the first half of 2011.*<sup>9</sup>

## **5. Medium-Term Inflation Outlook**

5.1 *The forecast for inflation entails an assessment of prospective developments in factors that affect domestic price movements, including demand-pull pressures resulting from real economic activity, imported inflation and other exogenous factors, such as changes in administered prices. The external influences on domestic prices include economic and financial developments in South Africa (Botswana's major trading partner) and global events, such as changes in international commodity prices and demand in major markets.*<sup>10</sup>

5.2 *South Africa's GDP is projected to grow by 3.7 percent in 2011, compared to 2.8 percent in 2010. The main drivers of this forecast GDP expansion are improvements in the manufacturing and mining sectors and household consumption expenditure. Inflationary pressures are expected to remain subdued, but with an upward momentum. Although international food prices have levelled out, they remain a major risk to the inflation outlook, especially as South Africa's food price inflation lags global trends and, hence, a faster increase in food prices can be expected in the near term. Nevertheless, South African annual headline inflation is projected to remain within the 3 - 6 percent inflation target range for the whole of 2011.<sup>11</sup> In consideration of balanced risks to the inflation outlook, the South African Reserve Bank is expected to maintain the current monetary policy stance in the short term.*

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<sup>8</sup> *The REER is calculated using Botswana's headline inflation, the weighted average inflation for SDR countries and South African headline inflation.*

<sup>9</sup> *Real monetary conditions measure the relative easiness or tightness of monetary policy and gauge the effect that monetary policy has on the economy through changes in the exchange rate and interest rates. The real monetary conditions are measured by an index (RMCI) that combines, through a weighted average, the deviations of the real exchange rate and real interest rate from their trend values. Meanwhile, a positive change in the real effective exchange rate indicates an appreciation of the Pula against the basket of currencies (rand and SDR) in real terms.*

<sup>10</sup> *Forecasts for external variables are obtained mainly from the Reuters survey of forecasters.*

<sup>11</sup> *This projection is derived from market consensus forecasts. However, the South African Reserve Bank forecasts that inflation will marginally breach the upper end of the target range in the fourth quarter of 2011 and first quarter of 2012, due to a lagged impact of the increase in food prices.*

- 5.3 *Global economic recovery is expected to moderate somewhat and remain uneven across countries and regions. World output is projected to expand by 4.3 percent in 2011 (compared to 5.1 percent in 2010), and to increase further by 4.5 percent in 2012. Growth is underpinned by strong performance in most emerging market and developing economies. The overall moderation in the global economic expansion reflects the impact of transitory factors in major economies, including supply-chain disruptions following the natural disaster in Japan and high commodity prices. Moreover, the continued aggressive fiscal consolidation measures intended to ensure long-term fiscal and debt sustainability in some major economies, as well as the enhanced supervision of financial sectors in major economies are likely to restrain growth in the short term. Furthermore, high rates of unemployment have a negative impact on business and consumer confidence and, thus constrain growth. Other downside risks to global economic activity arise from increasingly weaker output growth for the USA and renewed volatility of financial markets, including a decrease in the value of equities (stock markets) and an increase in yields for government debt, thus, potentially having a negative impact on economic performance.<sup>12</sup>*
- 5.4 *There are indications of reduced pressures on world inflation associated with moderation of commodity prices and continuing low levels of capacity utilisation and high unemployment rates in major economies. Overall, it is projected that inflationary pressures in the world economy will be restrained in the medium term, despite possible asset price bubbles in emerging market economies, including China and India. World inflation is forecast to increase from an average of 3.7 percent in 2010 to 4.5 percent in 2011. Forecast inflation in SDR countries is 2.8 percent and 2 percent for 2011 and 2012, respectively.*
- 5.5 *With regard to international commodity prices, it is projected that the international price of oil will rise by an annual rate of 34.5 percent in 2011 and fall by 1 percent in 2012, while food prices are forecast to stabilise at a higher level, but with a lower rate of price change. It is considered that the upward pressure on food prices has eased given improvement in crop harvests and lifting of the ban on export of grains by the Russia Federation. However, there are upside risks to world inflation, including uncertainty with regard to developments in international oil prices<sup>13</sup>, given the ongoing political unrest in some oil producing countries of North Africa and the Middle East. Overall, it is expected that external price developments will have a benign influence on domestic inflation.*

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<sup>12</sup> *The sovereign credit rating agency, Standard and Poor's downgraded USA debt from AAA to AA+ on August 5, 2011, noting that the deficit reduction and debt ceiling package agreed by the authorities fell short of measures that are necessary to stabilise the Government's medium-term debt dynamics. In another development, Moody's Investor Service downgraded Portugal's credit rating to junk status, thus sparking renewed concerns over the sustainability of the European sovereign debt markets. There have also been concerns about sustainability of Spanish and Italian fiscal positions, in addition to the outstanding debt problems being experienced by Greece.*

<sup>13</sup> *Although the international oil price (US light crude) fell from USD92 per barrel in January 2011 to USD90 per barrel in June, it fluctuated widely in the interim period. For example, the international oil price was as high as USD110 in March and USD113.69 ( a 30-month high) in April, before falling to USD98 in June.*

- 5.6 *The stable inflation differential between Botswana and her trading partner countries implies maintenance of a modest rate of a downward crawl in 2011. However, market forecasts suggest that the rand will depreciate in the short term, with the resultant appreciation of the Pula against the South African currency exerting marginal downward influence on domestic inflation.*
- 5.7 *The recovery of the domestic economy is expected to be sustained going forward, reflecting mostly an improvement in external demand, and the continuing healthy performance of some of the non-mining sectors. Nevertheless, it is projected that output will remain below the long-term trend, with the resultant negative output gap<sup>14</sup> contributing to modest demand pressures on inflation in the medium term. In this context, the Business Expectations Survey for March 2011 shows that businesses are projecting a slower growth for the economy, and indicates a fall in overall business confidence from 67 percent in the September 2010 survey to 47 percent. The surveyed businesses anticipated a moderation in inflation towards the objective range.*
- 5.8 *The increase in administered prices is estimated to add 1.7 percentage points to inflation in the short term, with most of the effect dissipating from the second half of 2012. The effect of the fuel price increase in February, April and May 2011 (which contributed an estimated 1.04 percentage points to inflation) will continue into the first half of 2012. Similarly, in the absence of a further increase, the estimated 0.41 percentage points addition to inflation due to an increase in electricity tariffs will drop out of the inflation calculation in June 2012. Meanwhile, the August 2011 increase in transport fares and fuel prices are estimated to add 0.16 percentage points and 0.45 percentage points, respectively, to inflation going forward. Overall, inflation is forecast to remain above the objective range in the short term due to the impact of the increase in administered prices, a revised higher forecast for inflation in South Africa and the lagged impact of higher food prices. Expectations are that inflation will fall within the objective range in the second half of 2012 (Chart 7). The risks to the inflation outlook include any substantial increase in administered prices and government levies, as well as any increase in international oil and food prices beyond current forecasts.*

## **6. Monetary Policy Stance**

- 6.1 *In line with the Bank's forward-looking, forecast-based framework, the Bank's monetary policy is predicated on an assessment of prospective medium-term economic performance, relative to the long-term trend (the output gap). Hence, the policy response takes into account the likely impact of economic activity and associated demand on future price developments (inflation forecast). Below-trend economic performance (negative output gap) is associated with reduced or low pressure on inflation and could signify a need to provide monetary policy stimulus to support economic growth, while economic activity that is above trend is likely to result in an increase in inflation and could require policy tightening to dampen inflation.*
- 6.2 *It is expected that economic activity will remain below trend in the medium term, influenced by moderation in global economic expansion and reduced government*

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<sup>14</sup> See a detailed description of the output gap measure in the Appendix.

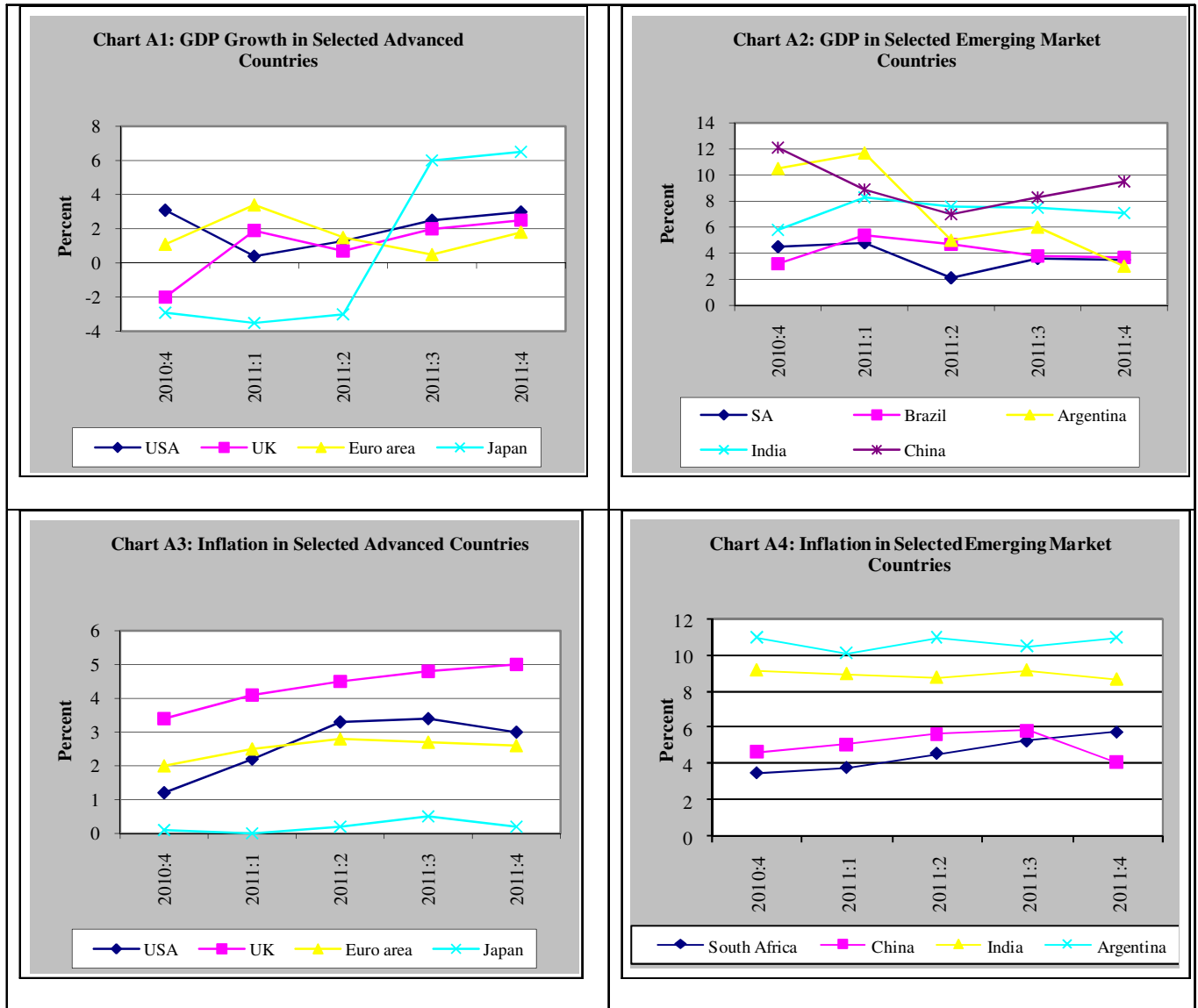
*spending. Moreover, it is projected that demand and its impact on economic activity will be constrained by the slow growth in personal incomes, and the increase in administered prices and government levies which will have a negative impact on real disposable incomes. Against this background, it is expected that inflation will remain above the 3 – 6 percent objective range, largely due to transient factors, but it will converge to the objective range in the second half of 2012. The largely positive inflation outlook provides scope for maintaining the prevailing monetary policy stance, which should be supportive of economic recovery, in an environment where the impact of the expansionary fiscal policy is limited by the low level of government revenue.*

- 6.3 *In assessing the monetary policy stance, the Bank also considers developments in real interest rates and real exchange rates that define monetary conditions in the economy, which ultimately have an impact on domestic demand. Real monetary conditions tightened somewhat in the first half of 2011, largely due to real exchange rate developments, but this was partially offset by the maintenance of constant nominal interest rates. Looking ahead, the real exchange rate and real interest rates suggest an easing of real monetary conditions in the medium term (Chart 8). Therefore, the current state of the economy and expectations relating to the domestic and external economic outlook, along with the inflation forecast, suggest that the prevailing monetary policy stance would be consistent with the achievement of the 3 – 6 percent inflation objective in the medium term. This policy stance could, however, change in response to indications that any expectations of high inflation are becoming entrenched.*

## **7. Summary and Conclusions**

- 7.1 *Inflation was above the objective range in the first six months of 2011, influenced mainly by the lingering impact of the increase in VAT in 2010 and the upward adjustment of electricity tariffs and fuel prices. Both the domestic demand and external inflationary pressures remained low. Given the positive medium-term outlook for price developments, the Bank Rate was unchanged between December 2010 and June 2011.*
- 7.2 *Going forward, external price pressures should remain generally benign against the background of restrained world economic activity, modest commodity price inflation and the dampening impact of low levels of capacity utilisation, high rates of unemployment and well-anchored inflation expectations in major economies. Domestically, subdued fiscal stimulus, sluggish income growth and below-trend performance of the economy will constrain demand pressures on inflation. The risks to the inflation outlook emanate from any possible large increase in administered prices and government levies, as well as higher inflation expectations engendered by the persistence of inflation above the objective range in the short term.*
- 7.3 *Accordingly, the prevailing monetary policy stance is consistent with the achievement of the 3 – 6 percent inflation objective in the medium term, and remains appropriate for supporting economic recovery, including sustenance of robust performance of the non-mining sectors. The Bank will continue to monitor economic and financial developments with a view to responding appropriately to ensure medium-term price stability, without undermining economic recovery and growth.*

Output Growth and Inflation for Selected Countries



Source: JP Morgan Chase  
 Note: Data from 2011 Q2 are forecasts

### ***The Output Gap Measure***

*The output gap is an important variable in the formulation and implementation of monetary policy. It is defined as the difference between the economy's actual level of total output and its potential output level (baseline/capacity level). It is, therefore, a gauge of the extent to which economic activity is strong or subdued relative to the economy's potential or capacity. Potential output represents the maximum amount of goods and services that an economy can supply on a sustainable basis with existing resources, without putting undue pressure on prices. It is noted that inflation is generally determined by both external (imported inflation) and domestic factors. The domestic factors can be categorised into supply (i.e., productivity) and demand influences.*

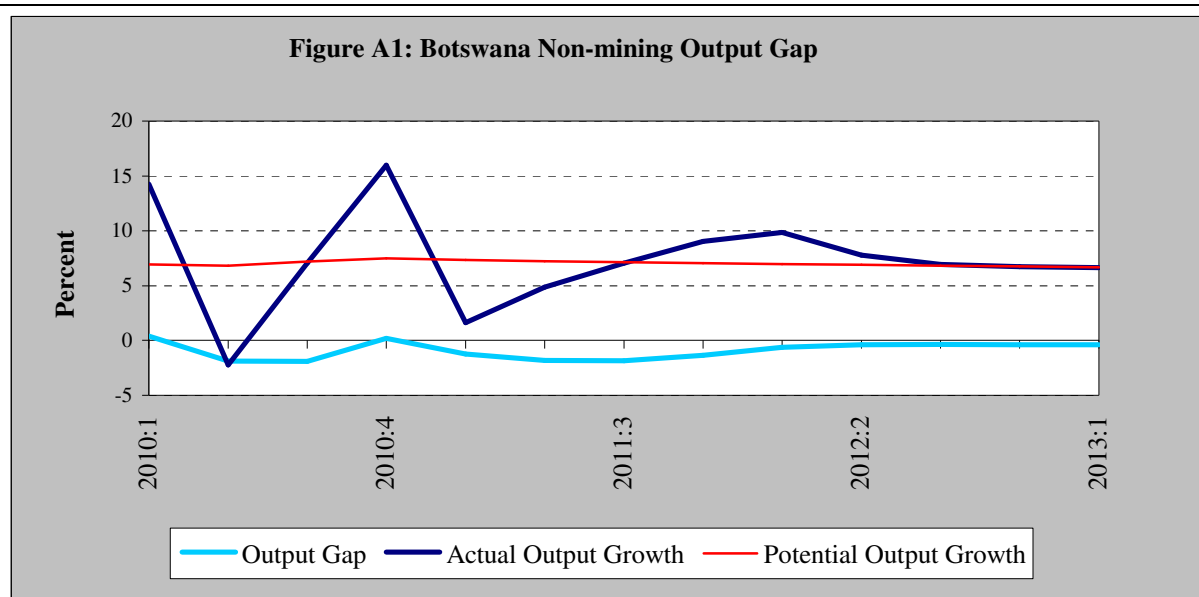
*A sustained positive output gap (actual output higher than potential) is indicative of an increase in demand, suggesting that inflationary pressures may be building up. This is because when economic activity is above potential, firms are operating at or close to full production capacity. For firms to increase production levels further, they have to undertake costly investments, which take some time to construct. Hence, in the meantime, firms tend to respond to increased demand by employing more of the variable resources (including labour and overtime), the cost of which is translated into higher prices.*

*Conversely, a prolonged negative output gap (actual output lower than potential) implies weak demand and, easing of inflationary pressures. In the event of weak demand, firms initially reduce the variable cost elements, resulting in a slower rate of price increases. Firms will initially not reduce plant and capital, taking the view that the fall in demand is temporary.*

*Thus, the deviation of actual output from potential output provides a measure of demand pressure on inflation. Given that the main objective of monetary policy is price stability, estimating the output gap is essential to the implementation of monetary policy.*

*It should be noted, however, that a rate of growth in actual output greater than potential rate of growth may not be sufficient to propel the economy from a position of negative to positive output gap in the short run, since such high actual growth may only serve to narrow the output gap instead of completely closing it. In particular, when moving from a deep economic trough, it usually takes a sustained period of high growth to return to potential capacity. This possible outcome is illustrated in Figure A1 and Table A1 which show the behaviour of non-mining output gap in Botswana given certain levels of growth in actual and potential output. For example, the value of output gap in the fourth quarter of 2011 is -1.4 percent<sup>15</sup> although actual output and potential output are expected to grow by 9.1 percent and 7.1 percent, respectively. This is because the economy was deeper in the trough in the third quarter of 2011 at -1.9 percent. The higher growth in actual output in the fourth quarter of 2011 compared to that of the third quarter only narrows the output gap from -1.9 percent to -1.4 percent.*

<sup>15</sup> Output gap is expressed as a percentage deviation of actual output level from potential output level.



**Table A1: Botswana Non-mining Output Gap**

Period	Output Gap	Output Growth	Potential Output Growth
2010Q1	0.4	14.2	6.9
2010Q2	-1.9	-2.2	6.8
2010Q3	-1.9	7.1	7.2
2010Q4	0.2	16.0	7.5
2011Q1	-1.2	1.6	7.3
2011Q2	-1.8	4.9	7.2
2011Q3	-1.9	7.1	7.2
2011Q4	<b>-1.4</b>	<b>9.1</b>	<b>7.1</b>
2012Q1	-0.6	9.9	7.0
2012Q2	-0.4	7.8	6.9
2012Q3	-0.4	7.0	6.8
2012Q4	-0.4	6.7	6.8
2013Q1	-0.4	6.6	6.7

Note: The rate of growth figures are annualised quarter-on-quarter changes

Potential output and, therefore, the output gap are not directly observable and must be estimated. There are a number of different methods used to estimate the output gap. These include the production function method and various filtering techniques such as the Hodrick-Prescott (HP) filter and a multivariate filter based on the Kalman filtration process. In the production function method, potential output is determined by trend levels of input such as labour, capital and total factor productivity. Simplified, the filtering techniques involve averaging past actual output growth to derive the economy's trend or potential output. The Bank uses the Kalman filter process which, in addition to past output developments, incorporates other influences such as domestic policy and external developments (See Section 2 on monetary policy framework).<sup>16</sup>

<sup>16</sup> Reasons for adopting the Kalman filter process include the points that data for the production function are currently inadequate, while the more basic Hodrick-Prescott filter approach would be deficient in an environment of high output variability, such as the case for Botswana.