Sudden stops and current account reversals: potential macroeconomic consequences for South Africa[1]

JEL Classification: F32, F41, F47, E17

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Contents

1. Introduction

The increased access of developing and emerging market countries to international capital flows over the past two decades has both benefits and costs for these countries. One of these costs comes in the form of abrupt, sharp slowdowns in capital inflows, which often result in painful macroeconomic adjustments. These events, the so-called "sudden stops", are often associated with sharp decreases in the affected countries' balance of payments current account deficits – the so-called current account "reversals".

South Africa is one of the emerging market countries that has been blessed with a continued, historically large, inflow of foreign capital in recent years. From 2004 to 2012, South Africa experienced a net capital inflow of more than R1.2 trillion. These inflows were partly used to build the country's foreign exchange reserves (from $2.7bn in 1993 to $50.7bn in 2012), but more particularly to finance large current account deficits. These deficits, which reached a level of 7.2% of GDP in 2007, declined to 2.8% in 2010 as a result of the impact of the Great Recession, but has recently increased sharply again. In addition, recent adverse developments in South Africa's socio-economic conditions (especially labour market conditions) have raised concerns amongst foreign investors as reflected in the downgrades of South Africa's sovereign credit ratings over the past year.

These developments, in combination with the potential negative impact of the unwinding of quantitative easing (QE) policies in the United States on emerging market economies in general, has raised the spectre of a sharp slowdown in foreign capital flows to South Africa and an associated reversal of the current account deficit. This paper explores the potential impact of such an event on macroeconomic conditions in South Africa. The methodology used is that of macro-econometric model-based alternative scenarios backed up by both the international evidence of the impact of such events and South Africa's history.

We proceed as follows: Section 2 provides a brief survey of the international empirical literature on sudden stops and current account reversals. Section 3 looks at South Africa's experience with respect to the macroeconomic conditions surrounding episodes of foreign capital inflow slowdowns and current account reversals since 1970. Section 4 considers a number of possible alternative future sudden stop cum current account reversal scenarios using a standard macro-econometric model of the South African economy. Section 5 concludes.

2. International experience

Slowdowns in foreign capital inflows have received wide attention in the literature on international finance, primarily as a result of the potentially adverse impacts on macroeconomic conditions in the countries involved. A related literature focuses on the subject of balance of payments current account reversals, i.e. major improvements in a country's current account deficit. Current account deficits financed by continued large net foreign capital inflows can often not be sustained once the inflows slow down. In the case of large current account deficits, reversals are also often associated with adverse domestic macroeconomic developments.

In the literature, slowdowns in foreign capital inflows go under the rubric of "sudden stops". This can be broadly defined as "an abrupt and major reduction in capital inflows to a country that up to that time had been receiving large volumes of foreign capital" (Edwards 2005: 14).[2] A number of basic characteristics of sudden stops have been identified in the literature (see e.g. Rothenberg and Warnock (2006)):

- Firstly, sudden stops can cause a great deal of pain in the form of sharp exchange rate depreciations and declines in economic activity.
- Secondly, sudden stops are not infrequent. According to Edwards (2005), an emerging market country can expect to experience one every decade. Also, Guidotti *et al* (2004) identified 313 such cases over the period 1974 to 2003 and Calderon and Kubota (2013) identified 210 episodes over the period 1975 to 2010.
- Thirdly, the earlier studies generally assumed that sudden stops are caused by foreign investors/creditors. However, more recent research has shown that a substantial proportion (24 out of 55 cases in the study by Rothenberg and Warnock (2000) and 55 out of 177 cases in the study by Calderon and Kubota (2013) were the result of domestic investors exporting capital.
- Fourthly, sudden stops are not confined to emerging market and developing countries only. Calderon and Kubota (2013) found 144 out of 210 episodes in developing countries and the remaining 66 in industrial countries. Cavallo *et al* (2013) found that sudden stops in industrial countries increased sharply after 2000.

A number of studies have considered the macroeconomic impact of sudden stops. In one recent study, Carmen and Vincent Reinhart (2008) examined the behaviour of key macroeconomic and financial market indicators in the run-up to, and the aftermath of, episodes of significant foreign capital flows into an economy. Their sample consists of 181 countries, surveyed between 1980 and 2007. They find that GDP growth, the current account deficit, the real effective exchange rate and asset prices fall when foreign capital inflows slow. The impact on inflation is, however, not clear cut. The ambiguous result for inflation can be ascribed to the fact that the fall in economic activity is a deflationary force and that it may offset the inflationary pressure from the exchange rate weakness. In another study of 33 sudden stops in emerging market economics over the period 1980 to 2004, Calvo, Izquierdo and Talvi (2006: 2)

[2] In empirical analyses, a sudden stop is often defined as occurring when capital flows to a country registers a year-on-year contraction of at least two standard deviations below its sample mean (Calvo, Izquierdo and Mejia (2003)) or alternatively, when a capital account contraction exceeds 5% of GDP (Guidotti *et al* (2004)). Calvo's original definition, Calvo , also required an associated current account reversal for a capital flow adjustment to qualify as a sudden stop.

found “a dramatic collapse in output (in our sample of collapses, the average fall in GDP is 10 per cent)”.

Sudden stops focus on the behaviour of the capital account of a country’s balance of payments. Current account reversals, broadly defined as “a major reduction in the current account deficit that takes place within a year or two”, Edwards (2004: 13), focuses on the flow of goods and services and income (i.e. the current account) in the balance of payments. Analytically, the two concepts are closely related. The capital account of the balance of payments registers the financing of the goods (and services and income) flows recorded in the current account. However, there is no reason to assume that a sudden stop will necessarily result in a current account reversal since the current account deficit can be financed from the country’s stock of foreign exchange reserves in the absence of capital inflows (at least temporarily). The empirical evidence does, however, suggest a strong correlation between the two events Edwards (2004), in an analysis covering 157 countries over 1970 to 2001, found that 46.1% of countries subject to a sudden stop also faced a current account reversal. Also, Guidotti *et al* (2004) found 265 cases (out of a total of 313 sudden stops) in which a current account improvement of at least 2% of GDP occurred.

Current account reversals can also be quite costly: among others, the IMF (2007) found that for reversals of 6% of GDP, GDP growth slowed by 1.5 percentage points (ppt), on average, with an average real depreciation of the domestic currency of 12%. Similarly Edwards (2005) found a negative GDP growth impact of 3.2% over a three-year period. By contrast, Milesi-Ferretti and Razin (1998: 20) found that “reversals in current account deficits are not necessarily associated with growth slowdowns”. These apparently conflicting results indicate that individual country reactions to current account reversals differ widely.[3] This is reflected in most of the relevant surveys in the literature, which generally find groups of countries (within an overall sample) with quite different characteristics. The IMF study quoted above, for example, reported on one sub-group with a median 3.5% GDP growth slowdown and a median 8% real exchange rate depreciation and another with a median 0.75% increase in GDP growth and a median 18% depreciation. In a study that was explicitly designed to provide for this diversity in current account reversal experiences, Algieri and Bracke (2007) used cluster analysis to identify different patterns of experience by countries. They identified three broad groups on the basis of their output and exchange rate experiences. The first group (labelled “internal adjustment”) experienced a slowdown in GDP growth but not much in terms of the real exchange rate. The second group (labelled “external adjustment”) was characterised by a depreciating real exchange rate without much movement in real GDP growth. The third group (labelled “mixed adjustment”) was characterised by a combination of slower economic growth and a depreciating exchange rate.

It follows from this very brief survey of the literature on sudden stops and current account reversals that South Africa, having become used to financing its large current account deficits (and thus investment) from foreign capital inflows over the past decade, should expect potentially quite adverse macroeconomic conditions in the event of a substantial slowdown in these inflows.

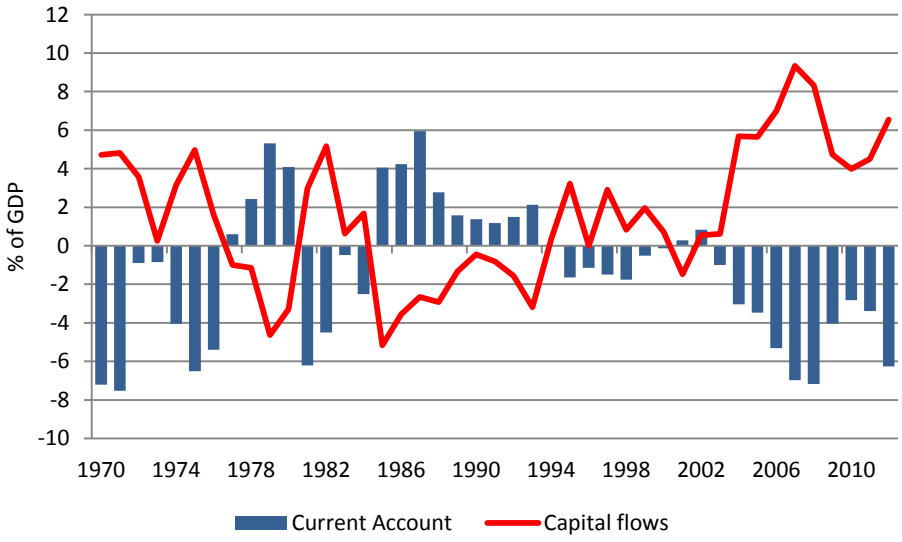
3. South Africa’s experience

Over the past 40 years, South Africa has experienced a number of foreign capital flows cum current account reversal episodes that could provide some indication of the possible macroeconomic impact of such an event in future. Figure 1 below depicts South Africa’s net foreign capital flows and current

[3] It is also important to note that the direction of causation in these events is not necessarily from the current account reversal to the associated macro variables. It may well be the other way round, i.e. changes in exchange rates, interest rates and domestic demand (that came about for other reasons) affect the current account balance.

account balances, both expressed as a percentage of GDP, since 1970. It is clear from the graphs that South Africa has, on a number of occasions, experienced large, but generally quite short-lived current account deficits, ending in sharp reversals.[4] These deficits were generally associated with substantial net capital inflows and their reversals with sharp slowdowns (sometimes even large reversals) in these capital inflows.

Figure 1: South Africa: Net foreign capital flows and current account balances (1970-2012)



Data source: SARB Quarterly Bulletin

In order to link these (capital flow slow-down and current account reversal) episodes to the associated domestic macroeconomic developments, the episodes must be defined more precisely. In the empirical literature on sudden stops and current account reversals (as noted above), a variety of (broadly similar in each case) definitions are used to identify such events.[5] For the purposes of the analysis here, a slowdown in foreign capital inflows is defined as a decline in capital inflows of at least 3% of GDP from the average inflow 8 quarters before the event to the average for the 8 quarters following the event. In the case of current account reversals, a similar measure is used. In identifying the combined such events for South Africa, the current account reversals were chosen as the timing determination event. Thus the timing of the event was determined by the quarter in which the current account reversal commenced. The following such events were identified during the period 1970 to 2012: 1971Q4, 1976Q3, 1984Q4 and 2008Q4.

In order to gain some perspective on the impact of these current account reversals and capital flow slowdowns on other macroeconomic variables in South Africa, the relevant macroeconomic developments during these time periods are presented in figures 2 to 13 below. For each of the variables concerned, the same 8 quarter average comparison (as for the current account reversal) is shown. The following empirical regularities are evident from the figures below:

[4] The only exception being the period since 2004 which shows a largely continued substantial deficit.
[5] See Guidotti *et al* (2004) for a discussion on empirical definitions for sudden stops and Algieri and Bracke (2007) for listing of such definitions for current account reversals.

- GDP growth (fig 4) declined sharply, on average for the 4 episodes by 2.5 ppts
- Household consumption expenditure growth (fig 5) and gross fixed capital formation growth (fig 6) declined respectively by 3.6 and 10.3 ppts
- The growth in imports declined by 12.9 ppts, providing the bulk of the current account adjustment (which, in turn, averaged 5.4 ppts of GDP)
- Exports (fig 8), by contrast, contributed little to the improvement in the current account with its growth rate increasing by only 1.8 ppts
- The behaviour of CPI inflation (fig 11), as indicated by the international experience, was ambiguous (increasing in some episodes and decreasing in others), increasing on average by 1 ppt
- The Rand/Dollar exchange rate (fig 10) gave mixed results, but was slightly weaker on average during the post-reversal period, similar to that of the real effective exchange rate (fig 9)
- Interest rates (fig 12) increased in all the episodes except for the last one (4Q08). The implied tightening in policy probably supported the current account adjustment via its impact on domestic expenditure

Figure 2: Net capital inflows

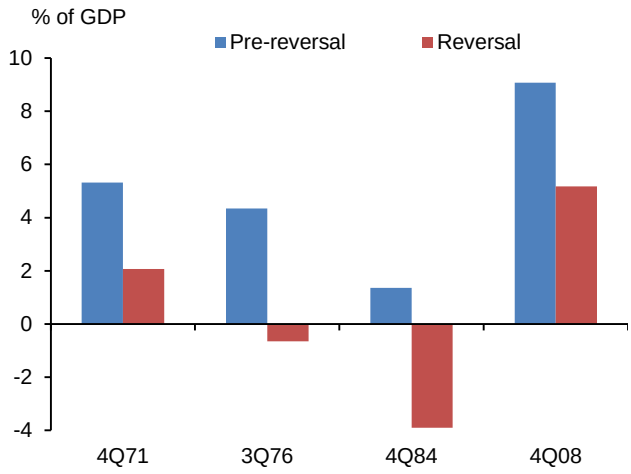


Figure 3: Current account balance

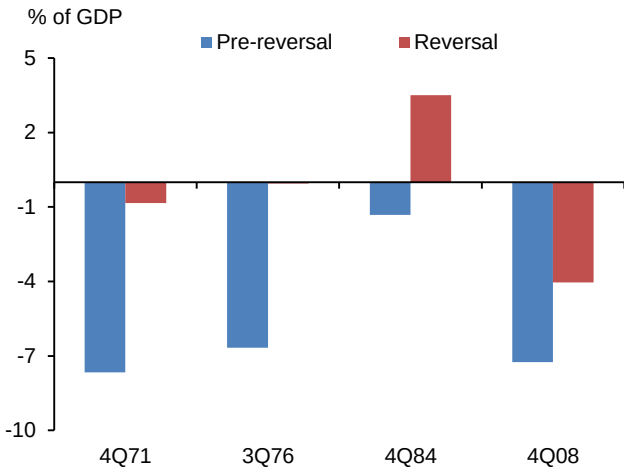


Figure 4: Gross domestic Product (GDP)

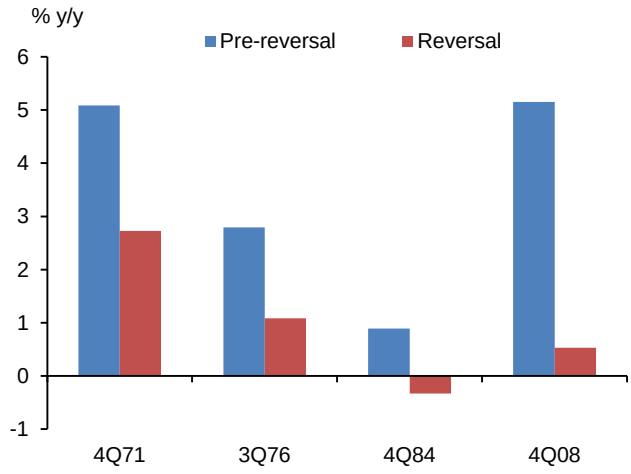


Figure 5:Household Consumption Expenditure(HCE)

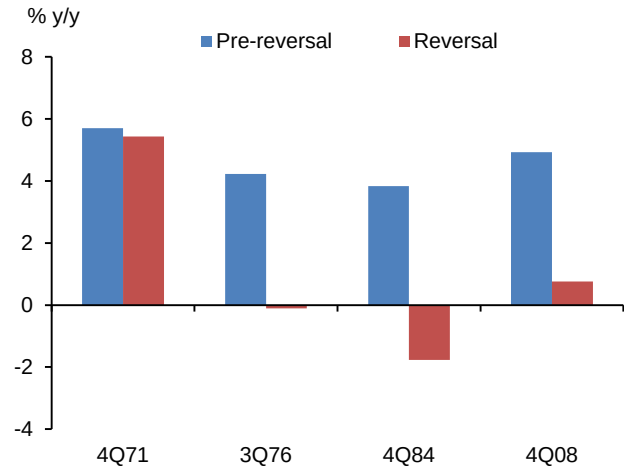


Figure 6: Gross Fixed Capital Formation (GFCF)

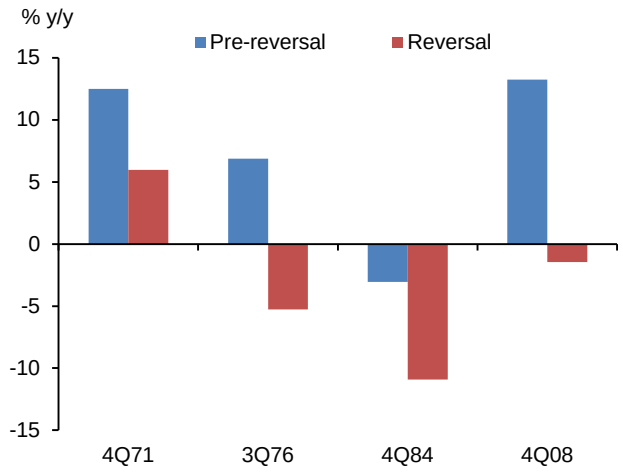


Figure 7: Imports

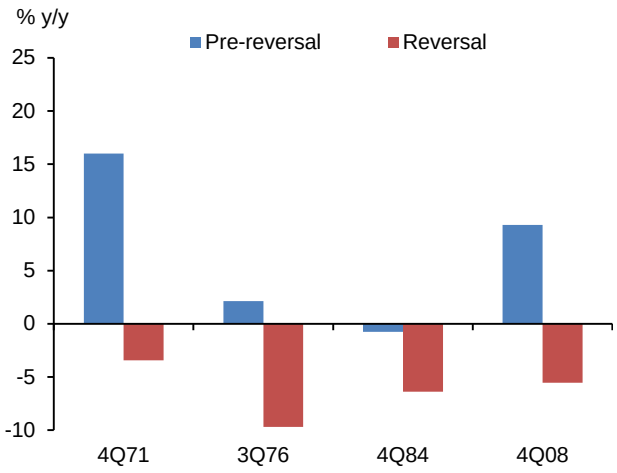


Figure 8: Exports

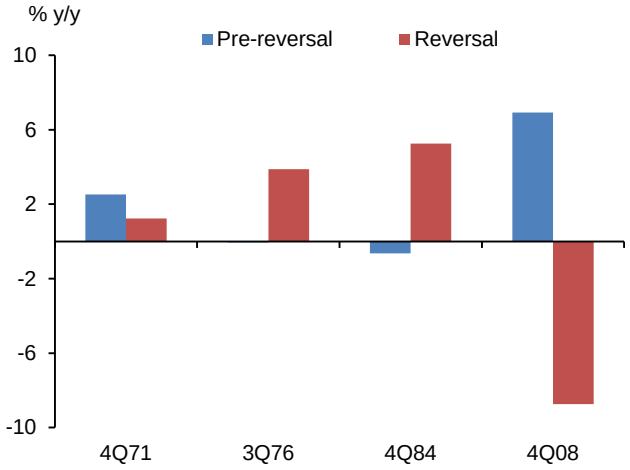


Figure 9: Real Effective Exchange Rate (REER)

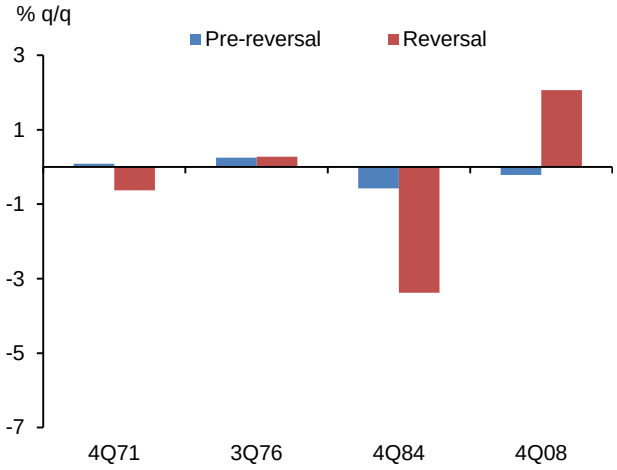


Figure 10: USD/ZAR

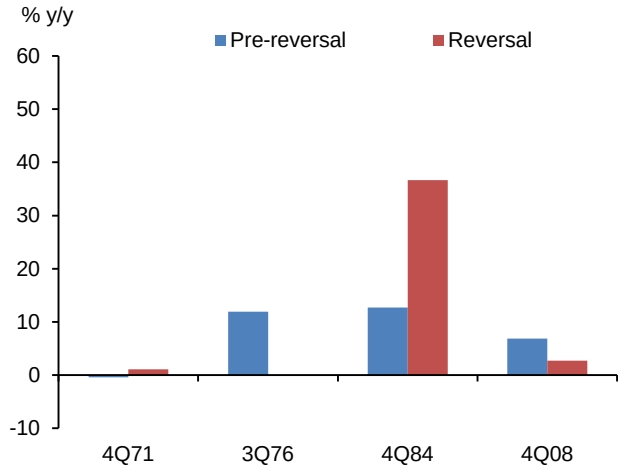


Figure 11: CPI

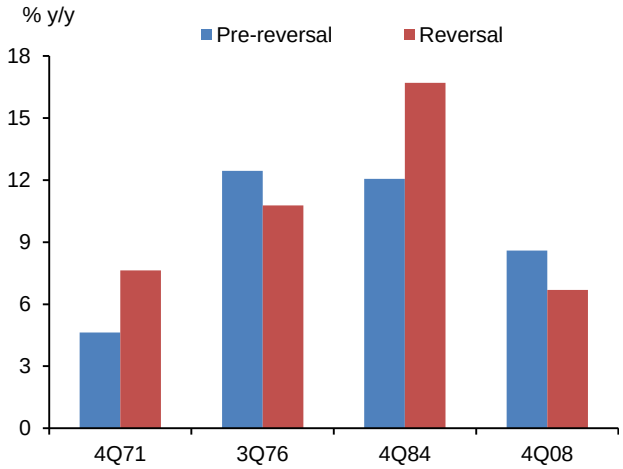


Figure 12: Key interest rates

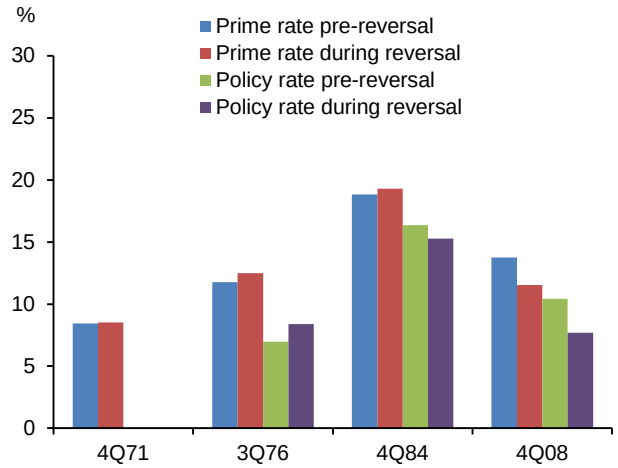
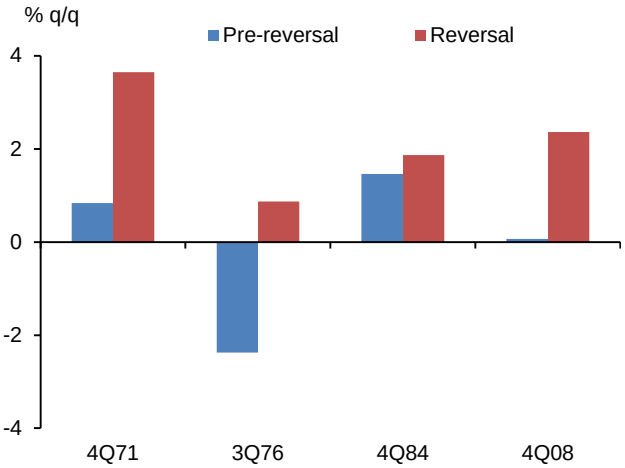


Figure 13: Terms of Trade



Data source: SARB, I-Net Bridge, BER, RMB Global Markets

4. Modelling the possible future impact

Both the international and South African experience of significant slowdowns in net foreign capital inflows and the associated current account reversals suggest potentially large negative impacts on emerging market economies. To gauge the possible future macroeconomic effects of such an event on the South African economy, a number of capital flow slowdown and current account reversal scenarios were modelled with the BER's macro-econometric model.[6] Each of the alternative scenarios is modelled as changes in the assumptions of a baseline scenario and the impact of each alternative scenario is measured by its deviation from the baseline forecast.

4.1 Defining the scenarios

The basic assumption differentiating the alternative scenarios is the extent of the projected slowdown in the net value of capital inflows to South Africa. Two such alternative assumptions are made: (i) a 50% slowdown for the 18 months from July 2013 to December 2014 and, (ii) a 100% slowdown over the same period combined with a 50% slowdown in 2015.

A second basic assumption is that the monetary authorities will not tolerate a substantial decline in official foreign exchange reserves and will be prepared to raise interest rates to the extent required to generate the necessary improvement in the current account deficit to broadly stabilise those reserves.[7] The primary impact channels of these assumptions operate via changes in the exchange rate and the repo rate. Consequently, each alternative scenario is characterised by a specific set of assumptions on the exchange rate and repo rate. The impact of possible alternative interest rate responses (to those modelled in the scenarios) will be considered briefly in the conclusions to the paper.

We present three scenarios:

[6] The model used for the different scenarios is the annual data macro-econometric model used by the Bureau for Economic Research at Stellenbosch University for forecasting macroeconomic policy analyses. A description of the model can be found in BER (2013)

[7] This assumption is obviously debatable. One of the primary conventional purposes of maintaining a stock of foreign reserves is that of temporary financing of shortfalls on the overall balance of payments. However, if the deficit were to persist, the country's foreign exchange reserves will be depleted, thus forcing the current account adjustment modelled here.

- **Baseline:** In this scenario, which conforms to the BER's April 2013 baseline forecast of the South African economy[8], capital inflows are assumed to be sufficient to fund the current account deficit. Under these conditions, the level of the country's foreign exchange reserves remains largely unchanged at approximately US$50bn. The details of the baseline forecast are presented in Table 2 in the Appendix. This scenario also assumes a slow but steady recovery in global growth. The relevant details of the global economic assumptions are also included in Table 2.
- **Mild slowdown:** This scenario assumes a 50% decline in the net foreign capital inflows relative to the baseline scenario from July 2013 to December 2014. In 2015 and beyond, the capital inflows return to the baseline levels. As noted above, the macroeconomic impact of the decline in capital inflows depends primarily on the exchange rate and interest rate responses. The rand is assumed to depreciate to USD/ZAR11.00 on average in 2H13 (compared to USD/ZAR9.00 in the baseline) and recover to USD/ZAR9.40 in 2014 (compared to USD/ZAR8.50 in the baseline).[9] If the MPC only responds to the associated increase in inflation and not to the need to improve the current account balance, foreign exchange reserves will decline significantly. However, the MPC is assumed to respond to both the resultant increase in inflation and the necessary decline in domestic demand required to sufficiently improve the current account deficit. The required repo rate increases (relative to the baseline) are 0.4ppt in 2H13, 1.7ppt in 2014 and 1.8ppt in 2015.[10] In other words, while the baseline assumes cumulative tightening of 50bp – 100bp (in annual average terms) in 2015, the mild slowdown scenario implies 250bp in cumulative tightening starting in 2013. The international economic assumptions in the mild slowdown scenario are identical to those of the baseline.
- **Severe slowdown:** This scenario is characterised by both a weaker global economic performance and sufficiently adverse domestic political/labour shocks to completely stop net capital inflows to South Africa from July 2013 to December 2014, with a 50% recovery in 2015 and a full recovery to the baseline levels thereafter. Under these conditions, the exchange rate is expected to depreciate even more than in the mild slowdown scenario. It is assumed to average USD/ZAR14.60 in 2H13, USD/ZAR12.60 in 2014, USD/ZAR11.50 in 2015 and USD/ZAR10.30 in 2016 (compared to a baseline level of USD/ZAR9.40 in 2016). The model simulations suggest that this change in the exchange rate will not sufficiently improve the current account deficit, resulting in the official foreign exchange reserves declining to US$35bn in 2015 (compared to US$49bn in the baseline) and to US$28bn in 2016 if the MPC only responded to the resultant inflation increase. Assuming the MPC is serious about broadly stabilising the level of foreign reserves (i.e. not allowing declines to below, say, the US$44bn level), the required repo rate levels are 9.5% in 2014 (4.5ppts higher than the baseline), 10.6% in

[8] BER Economic Prospects 2013Q2 Vol 28 No 2

[9] The treatment of the exchange rate and interest rate responses to the slowdown in capital inflows as assumptions (rather than endogenous model responses) is necessary because the estimated equations for these variables are not based on a data sample that included such a monetary policy response and because it is difficult to satisfactionally model the impact of factors such as a sudden change in risk aversion on exchange rates. These assumptions were, however, informed by model simulations where both the Repo and exchange rate was treated as endogenous. See table 1 for the detailed numbers.

[10] In order to determine the required interest rate response, this scenario was simulated first with the interest rate (i.e. the Monetary Policy Committee (MPC) policy reaction function) as endogenous.

2015 (4.8ppts higher than the baseline) and 8.0% in 2016 (1.0ppt higher than the baseline). In other words, while the baseline assumes cumulative tightening of 50bp – 100bp (in annual average terms) in 2015, the severe slowdown scenario implies around 550bp in cumulative tightening starting in 2014. In this scenario, the international economic assumptions provide for a substantially weaker outlook.[11]

Table 1: Key assumptions for the different scenarios

Variable	Scenario 1				Scenario 2			Scenario 3			
	Base case (2013-2016)				Mild slowdown (2013-2015)			Severe slowdown (2013-2016)			
Capital flows ($ bn)	25.0	25.9	25.5	25.0	18.8	13.0	25.5	12.5	0	12.8	25.0
USD/ZAR*	9.0	8.5	9.0	9.4	** 11.0	9.4	9.0	** 14.6	12.6	11.5	10.3
Repo rate	5.0	5.0	5.8	7.0	5.2	6.7	7.5	5.0	9.5	10.6	8.0
BoP Current Account (% GDP)	Average -5.6 (2013 to 2016)				-5.9	-3.7	-4.0	-5.2	-1.1	-2.0	-4.7

** Monetary policy formulated to generate the assumed current account deficits given the assumed exchange rate levels.*
*** Average for 2013H2*

4.2 Scenario results

The detailed numbers from each scenario modelled are presented in Tables 2 to 4 in the Appendix. A selection is presented in figures 14 to 29. The salient characteristics of each scenario simulation results may be noted as follows:

Baseline scenario

- Real GDP growth slowly recovers from 2014 onwards to between 3.5% and 4.0% per annum.
- Domestic demand (real Gross Domestic Expenditure — GDE) growth increases from about 3.0% in 2013 to around 4% from 2014 onwards.
- Exports pick up gradually due to the recovery in global growth.
- Imports also increase in response to the gradual improvement in domestic demand.
- Employment grows between 1.5% and 2% per annum, barely sufficient to lower the unemployment rate slowly over time.
- Long-term interest rates (the 10-year government bond yield) increase in line with the 200bp rise in the repo rate over the next three years.
- The government's budget deficit gradually improves in line with the National Treasury's projections.

Mild slowdown[12]

- GDP growth slows to 2.4% (-0.3ppt) versus the baseline estimate in 2013 and to 2.5% (-1.0ppt) in 2014, but recovers partially in 2015 for a total loss over the period of 0.8%.

[11] These assumptions are listed in table 4 in the Appendix.
[12] The numbers in brackets represent changes relative to the baseline except if otherwise indicated and the overall loss/gain is relative to the baseline level.

- Domestic demand growth slows to 2.4% (-0.7ppt) in 2013 and to 1.8% (-2.4ppts) in 2014 but recovers partially in 2015 for an overall loss of 2.3%.
- Exports respond to the currency depreciation for a total gain of 0.9% over the 2.5 years.
- Imports respond to both the currency depreciation and the decline in domestic demand by falling 4.4ppts relative to the baseline over the 2.5 years, thus providing the bulk of the current account reversal.
- Employment declines by 0.3% in total in response to the lower level of economic activity.
- The 10-year government bond yield increases by 3.2ppts and 1.7ppts in 2H13 and 2014 relative to the baseline, respectively, and exceeds the 2015 baseline level by 0.4ppt.
- The government budget deficit increases to 4.7% of GDP (compared to 3.8% in the baseline) by 2015, resulting in a debt-to-GDP ratio of 43.7% (compared to 41.9% in the baseline) by 2015.

Severe slowdown

- GDP growth slows to 2.3% (-0.3ppt) in 2013 and to -1.1% (-4.6ppts) in 2014, recovering in 2015 and 2016 for a total loss over the period from 2013 to 2016 of 5.1%.
- Domestic demand growth slows to 2.0% (-1.1ppt) in 2013 and to -2.9% (-7.0ppts) in 2014, recovering partially in 2015 and 2016 for a total loss of 6.2%. The main contributions to the decline come from household consumption expenditure (a total loss of 7.7%), private residential investment (a total loss of 16%) and private non-residential investment (a total loss of 13.2%).
- Exports, responding more to the weaker global demand than to the currency depreciation, decline by 8% relative to the baseline over the period to 2016.
- Imports decline by 10.9% relative to the baseline over the same period.
- Employment declines by 2.5% relative to the baseline over the period to 2016.
- The 10-year government bond yield increases sharply to 10.0% (4ppts relative to the baseline) in 2H13 and to 10.9%, 9.8% and 8.9% (i.e. increases of 3.5ppts, 1.7ppts and 0.3ppt), respectively, in 2014, 2015 and 2016.
- The government's budget deficit increases to 6.1% of GDP in 2016 (compared to 3.6% in the baseline), resulting in a debt-to-GDP ratio of 49.2% (compared to the baseline of 42.5%) by 2016.

Graphical comparison of baseline, mild slowdown and severe slowdown scenarios

Figure 14: Net capital inflows (US$bn, average)

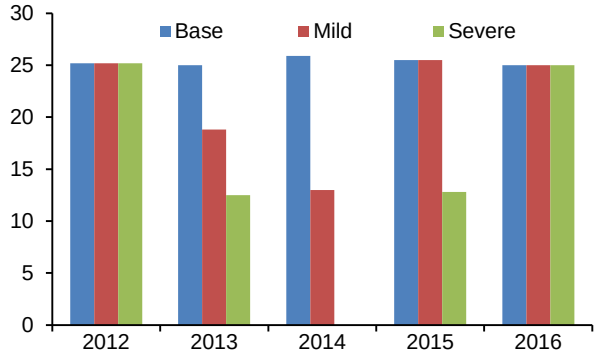


Figure 15: Current account balance (% GDP, average)

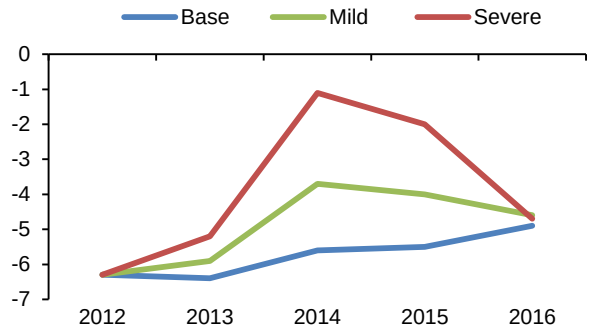


Figure 16: USD/ZAR (average)

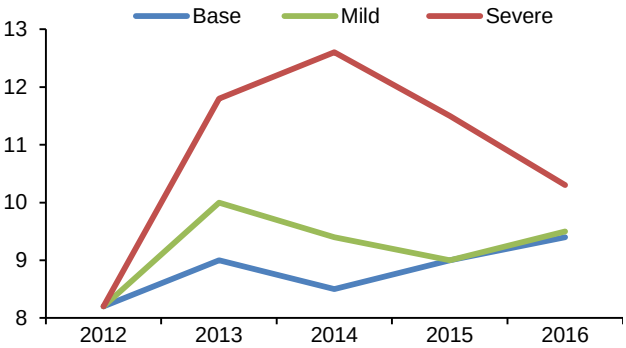


Figure 17: Repo rate (%, average)

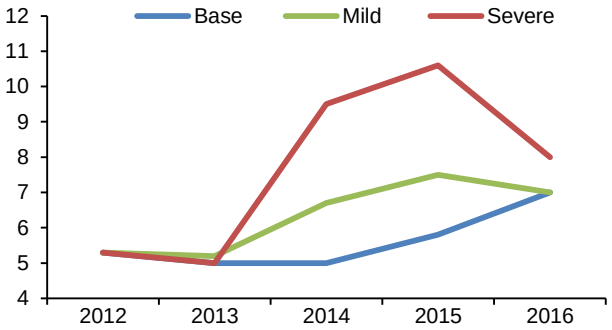


Figure 18: GDP (% y/y, average)

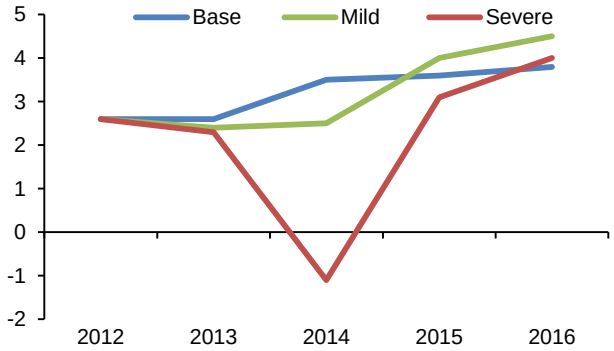


Figure 19: HCE (%, y/y, average)

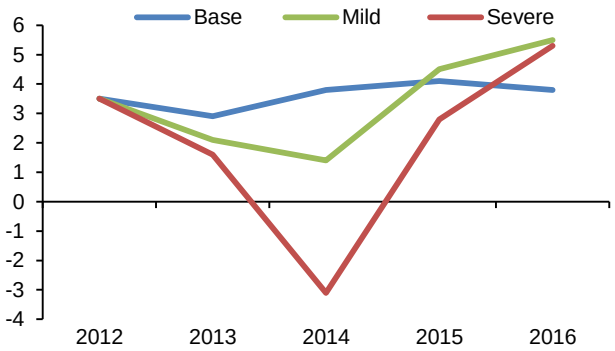


Figure 20: Private non-residential fixed investment (% y/y, average)

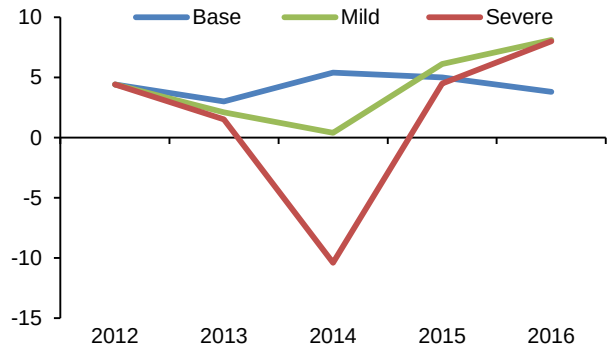


Figure 21: Private sector employment (% y/y, average)

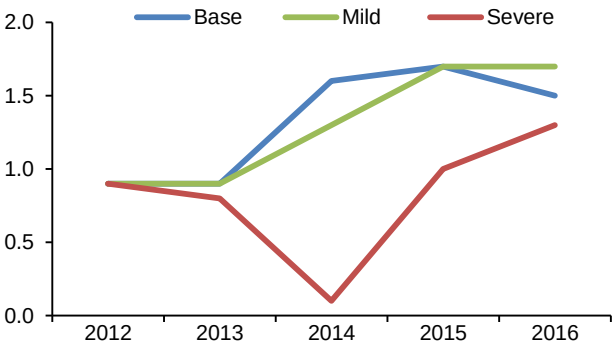


Figure 22:Exports (% y/y, average)

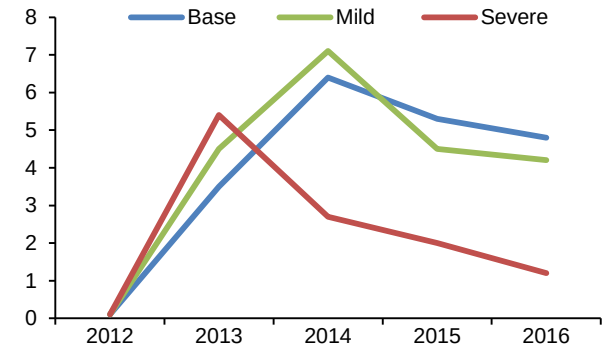


Figure 23: Imports (% y/y, average)

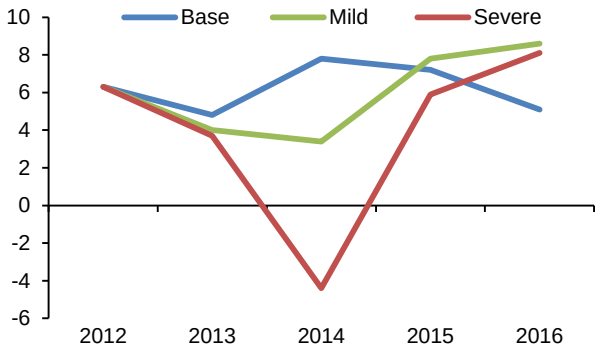


Figure 24: CPI (% y/y, average)

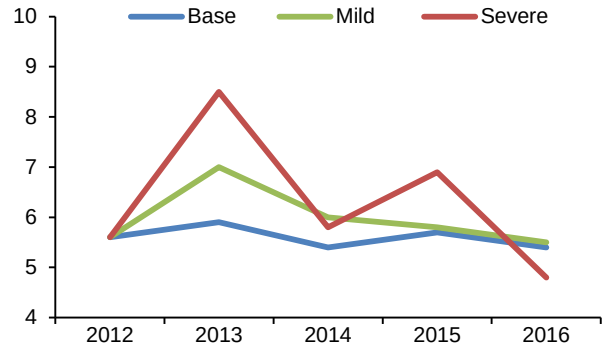


Figure 25: 10-year government bond yield (%, ave)

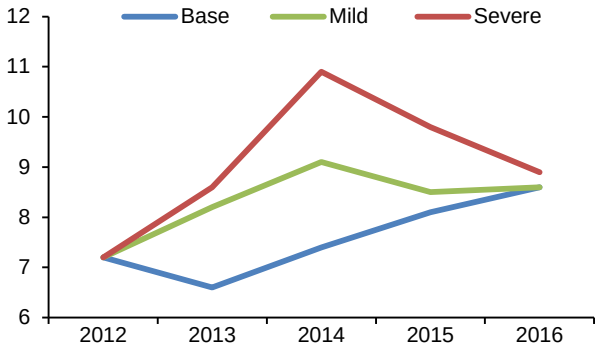


Figure 26: Government budget balance (% of GDP, average)

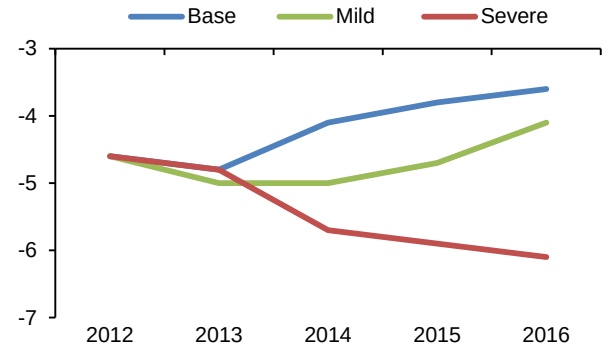


Figure 27: Government debt (% of GDP, average)

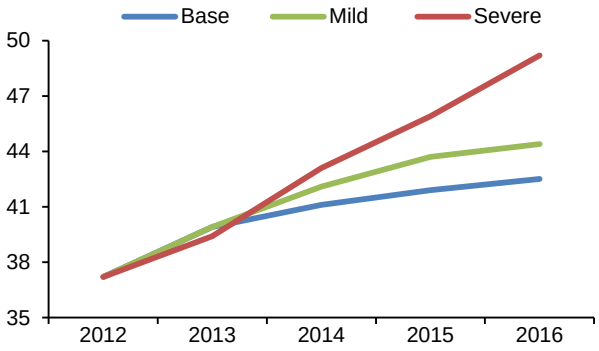


Figure 28: Real effective exchange rate (average)

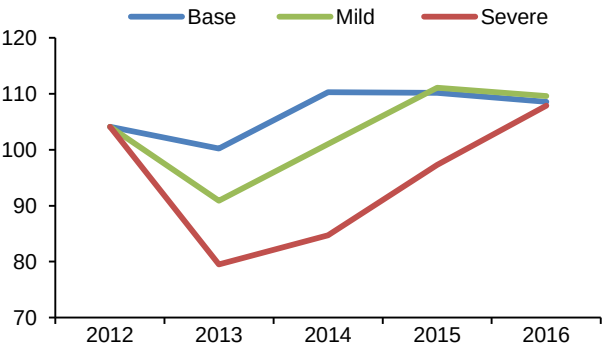
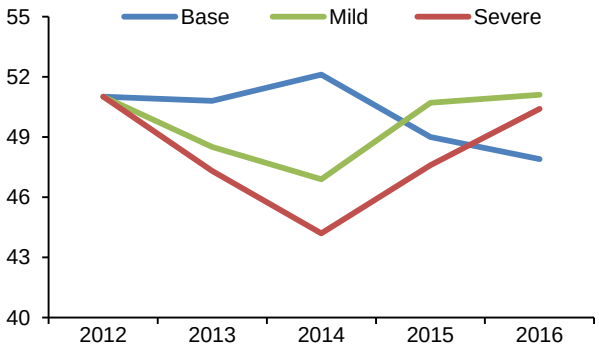


Figure 29: SARB gross reserves (US$bn, period end)



Data source: BER, RMB Global Markets

5. Conclusions

The South African economy currently appears quite vulnerable to a sharp slowdown (or even a turnaround) in the large net foreign capital inflows it has been experiencing since 2004. This follows from a deterioration in domestic socio-economic and political conditions impacting on foreign investors' sentiment, sharp increases in its current account deficit and a possible emerging-market wide outflow of foreign capital related to the ending of the US quantitative easing policies.

In the event of such a slowdown in capital inflows South Africa's current account deficit will likely become unsustainable, thus requiring a substantial reversal of the deficit.

In assessing the likely impact of such an event on the South African macro economy, three types of evidence have been considered above. Firstly, the international experience with sudden stops of foreign capital inflows and current account reversals. These suggest that the impact is quite diverse but, given South Africa's balance of payments position, is likely to be painfull. Secondly, the South African experience of current account reversals combined with capital flow slowdowns (or outflows) at a number of occasions since the early 1970s. These indicate a consistent, substantial adverse macroeconomic impact. Finally, a number of macroeconomic model-based scenarios were considered. These also indicate a substantial negative impact on domestic demand, output and employment in such an event.

It should be noted that the policy response assumed in the scenario exercise is not the only conceivable one. The postulated response focuses on monetary policy only and also assumes that the authorities would not make material use of its foreign exchange reserves (to finance the current account deficit). Should they be prepared to run down the reserves for this purpose, it may substitute for the indicated monetary tightening, but this may have other negative repercussions and could not prevent the need for a longer term current account adjustment if the capital flow slowdown persists. On the other hand, should the authorities make use of (restrictive) fiscal policy instead, the macroeconomic conditions associated with the current account reversal would be broadly similar to the scenario results above. The only differences could be a much smaller interest rate response and government debt dynamics.

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APPENDIX A

Table 2: Baseline scenario

	2013	2014	2015	2016
Real GDP and components (% change)				
GDP	2.6	3.5	3.6	3.8
Household Consumption Expenditure	2.9	3.8	4.1	3.8
Government Consumption Expenditure	3.5	3.6	3.9	4.1
Gross Domestic Fixed Investment: Private Residential	0.7	2.4	3.7	4.4
Gross Domestic Fixed Investment: Private Non-Residential	3.0	5.4	5.0	3.8
Gross Domestic Fixed Investment: Public Corporations	4.8	5.4	6.6	7.2
Gross Domestic Fixed Investment: Government	4.8	3.9	4.4	4.8
Gross Domestic Expenditure	3.1	4.1	4.3	4.0
Exports	3.5	6.4	5.3	4.8
Imports	4.9	7.8	7.2	5.1
Exchange rates				
R/$ - level	9.0	8.5	9.0	9.4
R/$ - % change	9.7	-5.3	5.0	5.0
Real effective exchange rate - % change	-3.7	10.0	-0.1	-1.5
Inflation & interest rates				
CPI	5.9	5.4	5.7	5.4
Repo rate	5.0	5.0	5.8	7.0
Real repo rate	-0.9	-0.4	0.0	1.6
10-year bond	6.6	7.4	8.1	8.6
Balance of payments				
Current account balance as % of GDP	-6.4	-5.6	-5.5	-4.9
Gross reserves in USD (year-end)	50.8	52.1	49.0	47.9
Other				
Total employment - % change	1.0	1.6	1.7	1.6
Private sector credit extention - % change (year-end)	9.5	10.4	11.7	11.0
House Price Index (ABSA) - % change	8.0	5.3	5.0	6.2
Government deficit as % of GDP	-4.8	-4.1	-3.8	-3.6
Cumulative Government deficit as % of GDP	-39.9	-41.1	-41.9	-42.5
International assumptions				
$/Euro - level	1.3	1.3	1.3	1.2
G7 Real GDP - % change	1.3	2.2	2.2	2.2
US CPI - % change	2.2	2.2	2.7	2.3
Commodity price index in US$ - % change	2.6	5.7	2.0	3.0
Gold price in US$ - % change	-1.4	-3.4	-10.0	0.7
Oil price (Brent) in US$ - % change	-3.3	-0.9	3.5	3.5

Source: BER

Data as at June 2013

.

Table 3: Mild slowdown scenario (50% capital inflows from July 2013 to December 2014)

	2012	2013	2014	2015	2016	*Deviation from Baseline*
						Total % deviation
Real GDP and components (% change)						*(2013 – 2015)*
GDP	2.6	2.4	2.5	4.0	4.5	*-0.8*
Household Consumption Expenditure	3.5	2.1	1.4	4.5	5.5	*-2.7*
Government Consumption Expenditure	4.2	3.5	3.6	3.9	4.1	*0.0*
Gross Domestic Fixed Investment: Private Residential	-0.8	-1.6	-3.4	4.6	7.6	*-6.9*
Gross Domestic Fixed Investment: Private Non-Residential	4.4	2.1	0.4	6.1	8.1	*-4.6*
Gross Domestic Fixed Investment: Public Corporations	9.1	4.8	5.4	6.6	7.2	*0.0*
Gross Domestic Fixed Investment: Government	8.5	4.8	3.9	4.4	4.8	*0.0*
Gross Domestic Expenditure	4.1	2.4	1.8	5.0	5.8	*-2.3*
Exports	0.1	4.5	7.1	4.5	4.2	*0.9*
Imports	6.3	4.0	3.4	7.8	8.6	*-4.4*
Exchange rates						*Average % deviation*
R/$ - level	8.2	10.0	9.4	9.0	9.5	
R/$ - % change	13.2	21.7	-5.6	-4.3	5.0	*7.5*
Real effective exchange rate - % change	-5.5	-12.7	11.1	10.0	-1.3	*-5.7*
Inflation & interest rates						*Average difference*
CPI	5.6	7.0	6.0	5.8	5.5	*0.6*
Repo rate	5.3	5.2	6.7	7.5	7.0	*1.2*
Real repo rate	-0.3	-1.8	0.7	1.8	1.4	*0.7*
10-year bond	7.2	8.2	9.1	8.5	8.6	*1.2*
Balance of payments						*Average % deviation*
Current account balance as % of GDP	-6.3	-5.9	-3.7	-4.0	-4.6	*-22.6*
Gross reserves in USD (year-end)	51.0	48.5	46.9	50.7	51.1	*-1.9*
Other						*Total % deviation*
Total employment - % change	1.1	0.9	1.3	1.7	1.8	*-0.3*
Private sector credit extention - % change (year-end)	10.1	8.9	6.1	10.7	15.2	*-5.3*
House Price Index - % change	0.5	5.5	0.6	4.0	8.8	*-7.5*
Government deficit as % of GDP	-4.6	-5.0	-5.0	-4.7	-4.1	*24.2*
Cumulative Government deficit as % of GDP	-37.2	-39.9	-42.1	-43.7	-44.4	*4.3*

Table 4: Severe slowdown scenario (0% capital inflows from July 2013 to December 2014, 50% during 2015)

	2012	2013	2014	2015	2016	*Deviation from Baseline*
Real GDP and components (% change)						*Total % deviation*
GDP	2.6	2.3	-1.1	3.1	4.0	*-5.1*
Household Consumption Expenditure	3.5	1.6	-3.1	2.8	5.3	*-7.7*
Government Consumption Expenditure	4.2	3.5	3.6	3.9	4.1	*0.0*
Gross Domestic Fixed Investment: Private Residential	-0.8	-2.7	-14.1	5.5	5.1	*-16.0*
Gross Domestic Fixed Investment: Private Non-Residential	4.4	1.5	-10.4	4.5	8.0	*-13.2*
Gross Domestic Fixed Investment: Public Corporations	9.1	4.8	5.4	6.6	7.2	*0.0*
Gross Domestic Fixed Investment: Government	8.5	4.8	3.9	4.4	4.8	*0.0*
Gross Domestic Expenditure	4.1	2.0	-2.9	4.1	5.8	*-6.2*
Exports	0.1	5.4	2.7	2.0	1.2	*-8.0*
Imports	6.3	3.7	-4.4	5.9	8.1	*-10.9*
Exchange rates						*Average % deviation*
R/$ - level	8.2	11.8	12.6	11.5	10.3	
R/$ - % change	13.2	43.7	6.8	-8.7	-10.4	*29.3*
Real effective exchange rate - % change	-5.5	-23.6	6.5	15.0	10.9	*-14.1*
Inflation & interest rates						*Average difference*
CPI	5.6	8.5	5.8	6.9	4.8	*0.9*
Repo rate	5.3	5.0	9.5	10.6	8.0	*2.6*
Real repo rate	-0.3	-3.5	3.7	3.7	3.2	*1.7*
10-year bond	7.2	8.6	10.9	9.8	8.9	*1.9*
Balance of payments						*Average % deviation*
Current account balance as % of GDP	-6.3	-5.2	-1.1	-2.0	-4.7	*-41.7*
Gross reserves in USD (year-end)	51.0	47.3	44.2	47.6	50.4	*-2.6*
Other						*Total % deviation*
Total employment - % change	1.1	0.9	0.3	1.2	1.4	*-2.1*
Private sector credit extention - % change (year-end)	10.1	9.6	-3.3	5.0	15.1	*-14.5*
House Price Index - % change	0.5	4.3	-7.6	4.6	5.9	*-15.8*
Government deficit as % of GDP	-4.6	-4.8	-5.7	-5.9	-6.1	*68.8*
Cumulative Government deficit as % of GDP	-37.2	-39.4	-43.1	-45.9	-49.2	*15.8*
International assumptions						
$/Euro - level	1.3	1.3	1.1	1.1	1.2	
G7 Real GDP - % change	1.4	1.0	-2.0	0.5	1.2	
US CPI - % change	2.1	2.0	-1.0	2.0	2.0	
Commodity price index in US$ - % change	-18.9	-11.0	-20.0	25.0	10.0	
Gold price in US$ - % change	6.3	1.9	5.9	0.0	-11.1	
Oil price (Brent) in US$ - % change	0.2	-11.0	-20.0	25.0	10.0	