

Capital flows, current-account adjustment and monetary policy in South Africa¹

Ben Smit

Introduction

Balance-of-payments flows have historically played an important role in macroeconomic policy formation in South Africa. This followed from the small open-economy and commodity-rich characteristics of the economy and the consequent importance of fluctuations in foreign capital flows and current-account balances under the conditions of relatively fixed exchange rates. In the years from the early 1990s, but especially from the democratic elections in 1994, the balance of payments became less of a focus of domestic macroeconomic policy. This reflected the generally small imbalances on both the current and capital accounts of the balance of payments, the regaining of full access to the international financial markets, and the switch to a flexible exchange rate regime.

More recently, however, and especially since 2004, the magnitude of South Africa's balance-of-payments flows has increased substantially. Foreign capital inflows, presumably associated primarily with the international commodity price boom and the improved domestic macroeconomic performance, have increased sharply to levels last experienced in the 1950s. These inflows financed both a significant increase in foreign-exchange reserves (from US\$8 billion in 2003 to US\$33 billion in 2007) and, especially, a sustained sharp increase in the deficit on the current account of the balance of payments. This current-account deficit is persisting and has reached levels (8,9 per cent of gross domestic product (GDP) in 2008Q1) that are raising concerns about its sustainability. In addition, the current international financial turmoil may well have adverse implications for foreign capital flows to emerging-market economies such as South Africa. Under these conditions a sharp slowdown in foreign capital inflows (a so-called sudden stop) and a (likely) associated sharp reversal of the current-account deficit may well come about – raising questions about the appropriate policy response, if any, to the developments on the balance of payments.

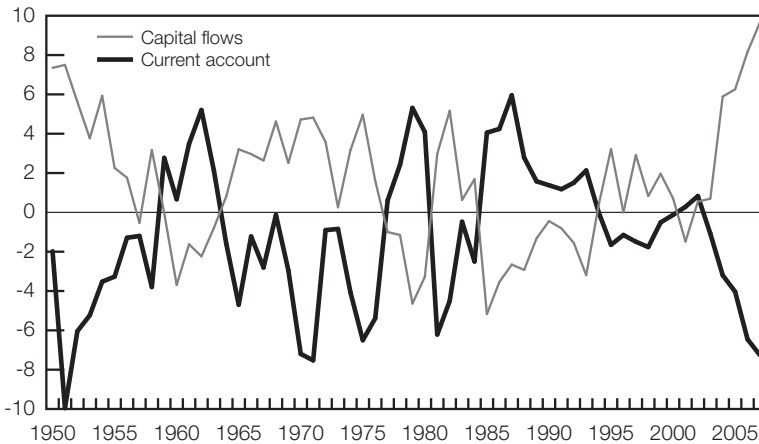
In this paper the recent and prospective developments regarding South Africa's foreign capital flows and the associated current-account developments, as well as the appropriate monetary policy responses are considered. In section one, the main characteristics of South Africa's recent foreign capital flows and current-account developments are presented briefly. This is followed, in section two, by a brief review of the international experience regarding current-account deficits, sudden stops of capital

flows, current-account reversals and the macroeconomic impact of such reversals. Against this background the sustainability of South Africa's current-account deficit is considered in section three. Section four is devoted to a consideration of the appropriate macroeconomic (especially monetary) policy responses. Finally, the macroeconomic impact of a sudden stop of foreign capital flows to South Africa under alternative macroeconomic policy assumptions is modelled in section five, followed by conclusions in section six.

1. Recent balance-of-payments developments in South Africa

From a longer-term historical perspective, South Africa's balance-of-payments flows are characterised by substantial volatility in both the current-account balance and international capital flows. This volatility is reflected clearly in Figure 1 and may be ascribed, *inter alia*, to South Africa's position as a major commodity exporter and the impact of domestic political developments in the early 1960s, the second half of the 1970s and the mid-1980s.²

Figure 1: Current-account balance and capital flows as a percentage of gross domestic product



Source: South African Reserve Bank

In the first decade since South Africa's democratic transition in 1994, the volatility of the balance-of-payments flows and the magnitudes of both the current and capital account balances appear to have declined substantially (see Figure 1). Since 2004, however, the magnitude of these balances has increased dramatically. Capital flows (total capital movements, including errors and omissions) increased from 0,7 per cent

of GDP in 2003 to 5,9 per cent in 2004 and 9,7 per cent in 2007 (see Table 1). The balance on the current account, in turn, increased from a deficit of 1,1 per cent of GDP in 2003 to 3,2 per cent in 2004 and 7,3 per cent in 2007. Both these trends continued in the first half of 2008.

In “explaining” the recent behaviour of the current account and capital flows, the current account can be viewed either as the difference between imports and exports of goods and services or the difference between gross domestic saving and gross capital formation (investment). The capital flows, in turn, can be described with reference to the different types of flows identified by the South African Reserve Bank in the balance-of-payments statistics.

Table 1: South African balance-of-payments and national account variables: 2000–2008Q2

	Current-account balance	Trade balance	Services and income balance	Exports: Volume index	Imports: Volume index	Terms of trade	Gross domestic savings	Gross capital formation	Total capital inflows
2000	-0,1	3,5	-3,0	100	100	100	15,8	15,9	0,7
2001	0,3	4,4	-3,5	102,3	100,3	101,2	15,6	15,3	-1,5
2002	0,8	4,3	-3,0	103,4	105,6	103,4	16,9	16,1	0,5
2003	-1,1	2,1	-2,6	103,5	114,1	107,2	15,8	16,9	0,7
2004	-3,2	-0,1	-2,3	106,5	130,7	108,3	14,5	17,7	5,9
2005	-4,0	-0,4	-2,5	115	144,2	108,8	14,0	18,1	6,3
2006	-6,5	-2,4	-3,0	121,5	171,3	113,6	14,0	20,4	8,2
2007	-7,3	-2,0	-4,2	131,5	189,2	117,1	14,1	21,4	9,7
2008Q1	-8,9	-2,8	-5,1	125,5	194,7	122,8	13,9	22,8	8,7
2008Q2	-7,3	-1,4	-4,7	137,5	195,0	117,0	14,8	22,1	7,9

All variables, except indices, are expressed as a percentage of GDP

Source of data: South African Reserve Bank *Quarterly Bulletin*, September 2008

From the trade (i.e., imports and exports) perspective it appears that the current-account deficit resulted primarily from a turnaround in the trade deficit (of more than 5 per cent of GDP since 2000) since the services and income balance declined by only about 2 per cent of GDP over the same period (see Table 1). The trade deficit, in turn, resulted from a relatively poor export performance combined with booming imports – the latter driven by the very strong domestic demand growth since 2004. An increase in the terms of trade (by 17 per cent from 2000 to 2007) helped to limit the increase in the deficit.

From the savings-investment perspective, the statistics in Table 1 indicate that the increase in the current-account deficit primarily resulted from the increase in investment (from 15,3 per cent of GDP in 2001 to more than 22 per cent in 2008) and a limited decline in savings (from 16,9 per cent of GDP in 2002 to 14,1 per cent in 2007).

The sustained increase in the current-account deficit was facilitated by the sharp increase in foreign capital flows to South Africa, especially since 2004. These capital inflows, which reached historically high levels in 2006 and 2007, were large enough both to finance the increased current-account deficit and allow for a substantial increase in the country's official foreign-exchange reserves (see Table 2). Apart from the magnitude, the composition of these inflows is also of interest. By far the greater majority of the inflows was portfolio capital and then specifically equity rather than bond inflows (see Table 2 and Figure 2). This is in sharp contrast to most other emerging-market economies where the foreign direct investment inflows dominated over the past decade (see IMF, 2008). Another category of capital inflows that has contributed significantly to the total inflows since 2004 is that of errors and omissions.³

Table 2: South African foreign capital flows and gross reserves

	Total capital flows (including errors and omissions)	Net direct investment	Net portfolio investment	Net other investment	Errors and omissions	Gross reserves
2000	0,7	0,5	-1,5	1,2	0,5	-
2001	-1,5	8,4	-6,6	-4,1	0,8	8,9
2002	0,5	1,8	-0,4	-0,3	-0,5	5,6
2003	0,7	0,1	0,5	-1,8	1,8	4,2
2004	5,9	-0,3	2,9	0,6	2,6	5,9
2005	6,3	2,4	1,9	0,6	1,3	8,5
2006	8,2	-2,8	7,4	1,3	2,3	10,2
2007	9,7	0,7	4,2	3,3	1,5	11,2
2008Q1	8,7	6,4	-3,8	5,4	0,6	12,7
2008Q2	7,9	0,2	4,0	3,4	0,4	12,0

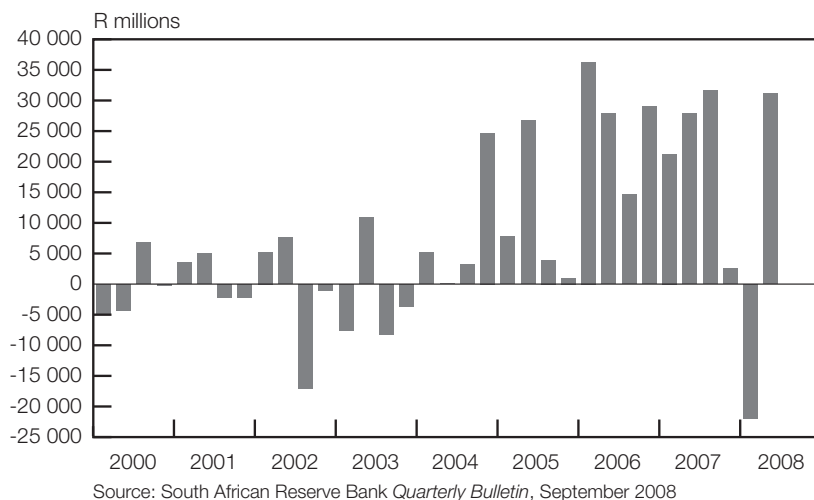
All variables are expressed as a percentage of GDP

Source of data: South African Reserve Bank *Quarterly Bulletin*, September 2008

The current levels of South Africa's foreign capital inflows and the current-account deficit are very high by South African historical standards. This, combined with the current international financial turmoil and its potentially adverse implications for financial flows to emerging-market economies, raises questions about the sustainability of these inflows and, consequently,

of the current-account deficit. It also raises questions about the appropriate macroeconomic policy response. Are the potential costs of a sharp slow-down (sudden stop) in these capital outflows and the likely associated reversal in the current-account deficit sufficient to justify policy intervention? If deemed to be the case, should the authorities attempt to pre-empt such an event by inducing a reversal of the current-account deficit? In order to investigate these questions, the pertinent international experience is considered in the next section.

Figure 2: Non-resident net purchases of securities on the JSE



2. The international experience

Balance-of-payments developments and, in particular, those in international capital flows and current-account deficits, have received considerable exposure in the literature over time. In recent years much of this interest has emanated from the sustained large United States (US) current-account deficit and the large-scale capital flows to emerging-market economies.⁴ Among other things, this literature has focused on the magnitude and persistence of current-account deficits, sudden stops of capital inflows (to emerging-market economies), current-account deficit reversals and the causes and (macroeconomic) consequences of these events. In this section the relevant details that resulted from this literature are presented briefly.

The characteristics of current-account deficits relevant to an analysis of current-account sustainability have been documented in a number of studies.⁵ Edwards (2006: 43), in a summary of the international experience with current-account deficits over the period 1971–2004, found that

- the median (mean) deficit was 3,1 (4,0) per cent of GDP
- the third quartile was 7,2 per cent (i.e., 75 per cent of the deficits were smaller or equal to 7,2 per cent of GDP)
- 9 (out of 157) countries experienced persistent (i.e., five consecutive years or longer) high deficits.⁶

Another characteristic of the international experience with current-account deficits that has been analysed is that of the frequency (incidence) of current-account reversals, that is, sharp reductions in current-account deficits. Edwards (2006: 21) also analysed this feature of the international experience during the period 1970–2004 and found the incidence of current-account deficit reversals for the overall sample of countries considered to be 17,2 per cent. The definition of a reversal he used was that of a reduction in the current-account deficit of at least 3 per cent of GDP over a period of one year. The incidence of reversals varied considerably between regions, from 5,3 per cent for the industrial countries to 22,8 per cent for the African regions.

Milesi-Ferretti and Razin (1997) also researched the incidence of current-account reversals. Their definition of a reversal is that of an average reduction in the deficit of at least 3 (5) percentage points of GDP over a period of three years and one where the maximum deficit after the reversal must be no larger than the minimum in the three years preceding the reversal. Their investigation covered the period 1974–1990 and they found 116 reversals in 60 countries (72 reversals in 40 countries) for the 3 percentage point (5 percentage point) criterion.

The International Monetary Fund (IMF) has also recently considered the incidence of current-account reversals. Defining large and sustained reversals as swings in the current account of at least 2,5 per cent of GDP and at least 50 per cent of the initial current-account balance that are sustained for at least five years (IMF, 2007a: 83), the IMF identified 16 deficit reversals in emerging-market countries and 13 deficit reversals in advanced economies over the period 1960–2006.

Current-account reversals have also been found to be closely associated with sudden stops of foreign capital inflows, that is, large declines (more than 5 per cent of GDP or more than two standard deviations below its sample mean). Guidotti et al. (2004) analysed 313 such cases and found that in 265 of these, a current-account adjustment of 2 per cent of GDP or more was required. Edwards (2005) found that in 46,8 per cent of the cases, a country experiencing a sudden stop also experienced a current-account reversal.

It is clear that sudden stops of capital inflows, large current-account deficits and large-scale reversals (and thus the non-sustainability) of current-account deficits are common occurrences internationally.

The concerns about current-account sustainability arise because of the potential negative impact of a reversal of a large current-account deficit (i.e., a change in the deficit to a surplus or a much smaller deficit) on economic growth and other macroeconomic variables. This issue has been considered in a number of recent studies on current-account deficits. The studies reveal that the macroeconomic impact of current-account reversals is not uniform across countries. This has led to considerations of the factors that may influence the nature and severity of these macroeconomic impacts.

The literature on the impact of current-account reversals on economic growth and other macroeconomic variables is by no means unanimous in its findings. Some studies find significant adverse effects, while others find no systematic impact. Edwards considered the possible negative impact of current-account reversals in a number of studies. In a National Bureau of Economic Research (NBER) paper (2001:37) on whether the current-account matters, he finds that “reversals have a negative impact on economic performance. They affect negatively aggregate investment; moreover, even when I control for investment, the regression analysis suggests that reversals have a negative impact on GDP growth per capita.” In another NBER paper (2005) on the sustainability of the US current-account deficit, Edwards finds (for large countries) the reduction in GDP growth of a Type 1 reversal (i.e., a reduction of the current-account deficit of at least 6 per cent of GDP in a three-year period) of 3,2 percentage points.

Debelle and Galati (2005) considered the macroeconomic impact of current-account reversals (28 reversals in industrialised countries during the period 1974–2003). They found that, on average, a decline in economic growth of 2 percentage points and a real exchange rate depreciation of 4 per cent, but questioned whether the direction of causality runs from the current-account imbalance.

Milesi-Ferretti and Razin (1998: 20) found, in an analysis of 100 reversal episodes in low- and middle-income countries, that “the median change in output growth between the period after and before the event is around zero, suggesting that reversals in current-account deficits are not necessarily associated with domestic output compression.”

The IMF, in the most recent *World Economic Outlook* (2007b) also considered the impact of current-account reversals in advanced economies. They (2007: 87) found (for current-account reversals of 6 per cent of GDP on average and lasting for 4 to 5 years) an average slowdown in growth of 1,5 percentage points and an average real depreciation of the domestic currency of 12 per cent. They also distinguished between a group of “contractionary” deficit reversals (with a median 3,5 percentage point

growth slowdown and a median 8 per cent real exchange rate depreciation) and a group of “expansionary” reversals (a median increase in GDP growth of about a 0,75 percentage point and a median real depreciation of about 18 per cent). They concluded that “over the past 40 years, there has been a clear trade-off between the growth slowdown after the reversal and total real effective exchange rate depreciation” (p. 89).

In a recent review of the costs of reversals in current-account deficits (71 episodes since the mid-1970s, Algieri and Bracke (2007) found that, on average, the adjustments were accompanied by “some slowdown in real GDP growth and some real effective depreciation in the deficit country”. However, they also found an unusually large degree of heterogeneity, with the real GDP increasing in one third of the cases and the real exchange rate appreciating in one third of the cases.

The wide diversity of country experiences regarding the macroeconomic impact of current-account deficit reversals has resulted in research on the identification of factors that can explain these diverse experiences. Studies that have focused on this issue include Edwards (2004), Guidotti, Sturzenegger and Vilar (2004), Milesi-Ferretti and Razin (1998), and Algieri and Bracke (2007). Edwards identified three such factors, namely (1) openness of the economy (the more open, the smaller the cost of a reversal), (2) the extent of dollarisation (foreign currency denomination) of a country’s foreign debt (the more dollarised, the bigger the negative impact of a large exchange rate depreciation) and (3) the exchange rate regime (the more flexible the exchange rate, the smaller the impact of a deficit reversal). However, only the openness and exchange rate regime factors proved statistically significant in Edwards’s (2004: 35–38) empirical analysis. Guidotti, Sturzenegger and Vilar (2004) considered the same three factors plus the terms of trade, and found all four statistically significant. Milesi-Ferretti and Razin (1998), in a study of low- and middle-income countries identified openness, the level of appreciation of the exchange rate and the level of external debt as factors that could influence the macroeconomic impact of a current-account deficit reversal.

Algieri and Bracke (2007) found that the type of reversal/adjustment experienced is not a function of characteristics such as the openness of the economy or its degree of industrialisation, but rather of the underlying problems in the deficit country, for example countries in an advanced stage of the business cycle experienced internal adjustment whereas external adjustment was experienced by countries with an overvalued exchange rate.

3. The sustainability of South Africa's current-account deficit

The recent South African experience of sustained large-scale foreign capital inflows and the associated current-account deficits, seen against the international experience of sudden stops of such capital inflows and the (often) associated current-account reversals, raises questions about the sustainability of South Africa's current balance-of-payments situation (see, for example, Frankel et al., 2007 and Smit, 2007).

In the literature the issue of current-account sustainability has received considerable attention over the past decade (see Debelle and Galati, 2005). Various approaches have been developed to assess the sustainability of current-account deficits. These include (1) the identification of a list of indicators of sustainability (see Milesi-Ferretti and Razin, 1996); (2) calculating current-account norms (based on the determinants of current-account balances); (3) the "predicted" and actual current-account positions for a particular country (see IMF, 2007); and (4) *ex post* assessments of actual current-account adjustments in order to predict the occurrence of current-account adjustments (Milesi-Ferretti and Razin, 1998).

The sustainability of South Africa's current-account deficit has also been considered in the literature. Smit (2007) has calculated (based on similar analyses done by the IMF (see IMF, 2006) the level of South Africa's current-account deficits required to stabilise the country's net foreign liabilities at particular levels. If the net foreign liabilities measure used is that of South Africa's end-2006 level (the average emerging-market level) the current deficit consistent with sustainability is approximately 1 per cent (3 per cent) of GDP. Frankel et al. (2007) considered the sustainability of South Africa's current-account deficit from the perspective of factors that have been identified in the literature as being important in indicating the likelihood of a current-account reversal. They considered the following factors:

1. Southern Africa's current deficit is relatively large (especially relative to recent emerging-market standards)
2. South Africa's foreign debt levels are relatively low (23 per cent of GDP in 2006)
3. A substantial portion of the debt is rand-denominated (37,3 per cent in 2006)
4. The South African economy is moderately open
5. As far as the composition of South Africa's foreign liabilities is concerned, the short-term component is quite small, but the share of equity plus foreign direct investment (FDI) in total capital inflows is average relative to comparable countries.

They concluded that the current-account deficit was probably not sustainable at the policy settings current at the time of their analysis.

4. Macroeconomic policy responses

The potentially adverse impacts of sudden stops of foreign capital inflows and the (often) associated current-account deficit reversals naturally raise questions about potential policy intervention. In this regard, policy can focus on a number of different issues, namely (1) policy measures aimed at limiting the capital inflows or their effects on, for example, domestic demand and the exchange rate; (2) policy measures aimed at pre-empting an abrupt larger-scale current-account reversal; and (3) policy measures aimed at facilitating the current-account reversal that may be required by the sudden stop of capital inflows.

In the case of South Africa's current balance-of-payments situation, the central question is clearly not that of limiting capital inflows given the relatively poor domestic savings performance and the need to finance a continued strong investment drive. The pertinent question is rather what macroeconomic policy (monetary policy in particular) can contribute to facilitating the reversal of the current-account deficit that would be required (given the limited, albeit improved, level of the official foreign-exchange reserves). A related question is whether macroeconomic policy measures should be used to pre-empt such a reversal by ensuring a substantially reduced current-account deficit before a sudden stop occurs.

In terms of specific macroeconomic policy measures aimed at reversing a current-account deficit, conventional thinking distinguishes between policy measures aimed at *switching* expenditure (from foreign to domestic goods and services) and reducing domestic expenditure (and thus imports and also releasing resources for increased exports). In the case of the former, exchange rate changes and exchange controls are typical examples, and in the case of the latter, changes in interest rates (and other monetary policy instruments) and fiscal policy. Government foreign borrowing and/or access to IMF credit facilities also forms part of the policy tool kit – especially as an alternative/supplement to running down the country's foreign-exchange reserves.

An important issue in the formulation of monetary policy measures to facilitate a current-account deficit reversal is the nature of the country's exchange rate regime. This follows from the so-called impossible trinity paradigm of open-economy macroeconomies, that is, the inability simultaneously to target the exchange rate, allow full capital mobility and conduct an independent monetary policy.

In the case of South Africa the current exchange rate regime is one of a relative clean float – a choice that has recently been confirmed as being appropriate by the “Harvard” team of economists that considered South

Africa's economic policies (see Frankel et al., 2007). It is also a choice that is consistent with the inflation-targeting monetary policy framework (since February 2000).

The implication for the monetary policy responses to facilitate the current-account adjustment in the event of a sudden stop of capital inflows of South Africa's current monetary policy framework is consequently that currency adjustment (depreciation) is likely to constitute an important part of the response. Under these circumstances the policy choice is obviously not the change in the exchange rate itself, but the decision to leave the response to the foreign-exchange market. Any changes in the repurchase (repo) rate (responding to both the inflation impact of the exchange rate depreciation and the need to restrict domestic demand to facilitate the current-account adjustment) remain as the explicit monetary policy response.

The monetary policy response would also depend on any fiscal policy measures aimed at the same goal. In this respect, fiscal policy has been found particularly useful (see IMF, 2007b) and forms the crux of the above-mentioned "Harvard" group's macroeconomic policy recommendations for South Africa.

5. Sudden-stop scenarios

What could the macroeconomic impact of a sudden stop of foreign capital inflows to the South African economy be and what effect could alternative combinations of macroeconomic policy have in such an event? In this section the results of a macro-model simulation exercise aimed at providing one set of answers to the question above are presented. The model used to generate the scenarios is the medium-term macroeconomic forecasting model of the South African economy developed at the Bureau for Economic Research at Stellenbosch University.⁷ The sudden-stop scenarios modelled consist of a single set of alternative foreign capital flow and world economic growth assumptions, combined with different sets of macroeconomic policy assumptions. The different scenarios are compared to a base-run scenario forecast for South Africa for the period 2008–2013, which assumes that the sudden stop of capital inflows and the associated adverse world economic growth conditions do not come about.

The quantified details of the base-run scenario and the various alternative sudden-stop scenarios are presented in Table 3.

The various scenarios modelled may be briefly described as follows:

1. Base-run scenario:

- A standard forecast scenario for the South African economy based on the information on domestic and world conditions available in the second quarter of 2008.

2. Sudden stop version I:

- A scenario with adverse alternative assumptions for the period 2009–2013 on the performance of the world economy and international capital flows to South Africa.⁸
- The policy response provided for in this scenario is a combination of exchange rate depreciation and repo rate increases of roughly equal magnitudes.

3. Sudden stop version II:

- Similar world economy and international capital flow assumption to those of version I.
- Policy response assumptions that allow for a relatively larger portion of the required current-account adjustment to be borne by exchange rate depreciation.

4. Sudden stop version III:

- Similar world economy and international capital flow assumptions to those of version I.
- Policy response assumptions that allow for a relatively larger portion of the required current-account adjustment to be borne by repo rate increases.

5. Sudden stop version IV:

- Similar world economy and international capital flow assumptions to that of version I.
- Policy response assumptions that allow for fiscal policy (in the form of increased personal taxes) to share the burden of the required current-account adjustment with monetary policy.

The results suggest the following:

- A substantial part of the adjustment to the reduced capital inflows in the first two years (2009 and 2010) is provided by the official foreign-exchange reserves, which decline by approximately 50 per cent.
- The impact on economic growth varies between -1,7 percentage points in 2009 (scenario III) and +0,8 percentage points (scenario II). The cost in terms of growth foregone increases the heavier the reliance on interest rate increases and the less the reliance on exchange rate depreciation.
- The improvement in the current-account deficit varies between 2,5 per cent of GDP (scenarios II and IV) and 1,9 per cent of GDP in 2009 (scenario III). The bigger the exchange rate depreciation, the bigger the current-account improvement.

Table 3: Sudden-stop scenarios: 2008–2013

Scenarios	2008	2009	2010	2011	2012	2013
1. Total capital inflows to South Africa (US\$ billions)						
Baseline	22,2	17,5	22,0	22,0	22,0	24,0
Scenario I	22,2	5,0	5,0	10,0	15,0	15,0
Scenario II	22,2	5,0	5,0	10,0	15,0	15,0
Scenario III	22,2	5,0	5,0	10,0	15,0	15,0
Scenario IV	22,2	5,0	5,0	10,0	15,0	15,0
2. Exchange rate (ZAR/US\$)						
Baseline	7,75	8,31	8,87	9,40	10,04	10,66
Scenario I	7,75	10,39	11,54	11,09	11,40	12,16
Scenario II	7,75	10,92	12,19	11,40	11,58	12,28
Scenario III	7,75	9,41	11,08	10,78	11,19	12,01
Scenario IV	7,75	10,44	11,65	11,33	11,64	12,36
3. Exchange rate (real effective)						
Baseline	98,94	98,46	96,14	93,89	91,42	89,02
Scenario I	98,94	83,07	80,29	87,67	87,55	83,96
Scenario II	98,94	78,34	76,74	87,30	88,01	84,43
Scenario III	98,94	92,61	82,03	87,89	87,12	83,63
Scenario IV	98,94	81,46	78,46	85,50	86,56	83,84
4. South African repurchase (repo) rate						
Baseline	11,69	11,37	10,49	9,40	9,29	9,17
Scenario I	11,69	15,55	15,84	13,13	10,37	9,00
Scenario II	11,69	14,61	16,54	14,26	10,85	8,97
Scenario III	11,69	16,59	14,75	12,13	10,02	9,16
Scenario IV	11,69	13,39	14,15	12,98	11,34	9,90
5. Current account as a percentage of GDP						
Baseline	-7,2	-6,6	-6,5	-6,2	-6,3	-6,2
Scenario I	-7,2	-4,3	-4,1	-3,6	-3,2	-2,9
Scenario II	-7,2	-4,1	-4,1	-3,6	-3,1	-2,8
Scenario III	-7,2	-4,7	-4,0	-3,7	-3,4	-3,1
Scenario IV	-7,2	-4,1	-4,2	-4,0	-3,5	-3,0
6. Foreign reserves (US\$ billions)						
Baseline	32,6	30,2	31,5	32,6	32,6	33,3
Scenario I	32,6	22,2	16,9	18,0	23,7	28,9
Scenario II	32,6	22,0	17,2	18,6	24,8	30,4
Scenario III	32,6	22,3	16,6	17,5	22,9	27,6
Scenario IV	32,6	22,7	17,3	17,1	22,1	27,3
7. Inflation rate (CPIX)						
Baseline	11,4	7,0	5,7	5,7	5,5	5,2
Scenario I	11,4	8,3	8,4	7,2	5,3	4,6
Scenario II	11,4	8,4	9,4	8,2	5,4	4,3
Scenario III	11,4	7,9	6,9	6,5	5,3	5,0
Scenario IV	11,4	8,4	8,2	7,4	6,1	5,1
8. Real GDP growth (percentage change)						
Baseline	3,39	3,17	4,84	4,68	4,33	4,73
Scenario I	3,39	3,02	3,82	3,51	4,30	5,55
Scenario II	3,39	3,93	4,10	2,81	3,92	5,50
Scenario III	3,39	1,49	4,26	4,15	4,62	5,59
Scenario IV	3,39	2,75	4,41	4,43	3,85	4,94

- The impact on the inflation rate (on average for 2009 and 2010) varies between 1,1 percentage points (scenario III) and 2,6 percentage points (scenario II). The higher inflation cost is obviously associated with the greater reliance on exchange rate depreciation.
- The interest rate increases (on average for 2009 and 2010 relative to the base case) vary between 2,8 percentage points (scenario IV) and 4,8 percentage points (scenario III). When considered over the two years 2009 and 2010, the interest rate increases relative to base are very similar for all the scenarios, except scenario IV (which is about half those of the other scenarios).
- The exchange rate depreciations (ZAR/US\$) relative to base in 2009 vary from 13,2 per cent (scenario III) to 31,4 per cent (scenario II) and from 24,9 per cent (scenario III) to 37,4 per cent (scenario II) in 2010.

6. Conclusions

Arguably, the current most significant macroeconomic risk to the South African economy is the high and sustained current-account deficit and the possibility that the large-scale foreign capital inflows, which have provided the financing of this deficit over the past four years, may decline sharply. Should this happen, the current-account deficit could not be sustained for long, implying a sharp reversal of the deficit and the possibly adverse macroeconomic conditions generally associated with such an event.

The question facing the monetary (and perhaps also the fiscal) authorities in South Africa is how they should respond. Should they endeavour to pre-empt such an event by facilitating an orderly decline in the current-account deficit through appropriate macroeconomic policy measures or should they only react when a sudden stop event actually comes about. And if they decide to intervene (either before or after the event), what would the appropriate policy measures be?

The answer to the first question, based on the analysis presented in this paper, and in my opinion, is not to attempt to pre-empt for the following reasons:

1. The opportunity cost in terms of the economic growth and employment foregone should foreign investors (lenders) have been prepared to continue to finance South Africa's current-account deficit.
2. The likely resilience of the South African economy in terms of the macroeconomic costs of a sudden stop-cum-current-account reversal event (i.e., the likely relative small opportunity cost of not pre-empting).
3. The implications of South Africa's floating exchange rate regime in that the authorities cannot, under these conditions, proactively use the exchange rate as a policy tool to facilitate an improvement in the current-account deficit.

The answer to the second question is less unequivocal. The standard monetary policy (interest rate and exchange rate adjustments – the latter being a market reaction in this case) and fiscal policy (tax or spending adjustments) are all potentially useful.⁹ The model-based scenarios presented in section 5 give some idea of the relative costs and benefits of alternative combinations of these – assuming that the macroeconomic model used here reflects the South African macroeconomic structure reasonably well.

Notes

¹ The sharp (negative) changes in foreign capital inflows in the first quarter of 1996 and in the second quarter of 1998 did, however, result in sharp exchange rate depreciations and monetary policy reaction, especially in 1998.

² See Mohr et al. (1989) and Mohr (2003) for detailed analyses of South Africa's balance-of-payments history.

³ Errors and omissions consist not only of unidentified capital movements, but are generally regarded as consisting mostly of capital rather than current-account transactions – hence their classification in the balance-of-payments statistics as part of the capital account items.

⁴ See, for example, Edwards (2005), Croke, Kahn and Leduc (2005), and IMF (2007b).

⁵ See Edwards (2004) for a comprehensive documentation of current-account imbalances over the period 1970–2001.

⁶ Edwards (2006: 44) defined a 'persistent high deficit' as one that exceeded the ninth decile for the country's region for at least five consecutive years. An earlier study (Edwards, 2004) found that 26 out of 157 countries over the period 1970–2001 experienced persistent high deficits (defined here as exceeding the third quartile of each region).

⁷ An earlier version of the model is documented in Smit and Pellisier (1997). It should be noted that the model does not feature forward-looking expectations and may thus be subject to the well-known Lucas critique.

⁸ These adverse alternative assumptions consist of the following: (1) G-7 GDP growth lower by 0,7 and 1,0 percentage points in 2009 and 2010, respectively; (2) commodity prices declining by 5 and 7 percentage points in 2009 and 2010 relative to the baseline changes; (3) the US dollar 7 per cent weaker against the euro from 2009 to 2013; and (4) the oil price lower by US\$15 on average for 2009 to 2013.

⁹ In the event of a large decline in (sudden stop of) private capital inflows, the authorities would probably first consider generating official foreign financing (such as direct government borrowing and/or an IMF facility) before resorting to restrictive macroeconomic policy measures.

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