

Commentary: Capital flows, current-account adjustment and monetary policy in South Africa

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There can hardly be any more pertinent economic issue in the South African economy than the one researched in this paper. This paper's largest contribution lies in the macroeconomic model framework used to evaluate empirically different policy interventions that are aimed at reversing the huge current-account deficit. The paper essentially evaluates the economic cost of reversing the current-account deficit through different combinations of interest rate and exchange rate adjustments. One fiscal policy intervention is also considered. The key findings of the paper are as follows:

- The larger the interest rate adjustment, the higher the economic growth cost associated with the current-account reversal.
- The larger the exchange rate adjustment, the larger the current-account impact associated with the current-account reversal. However, a larger exchange rate adjustment is, according to the results, also associated with a larger adjustment in inflation.
- In the final scenario, where fiscal policy intervention is also considered, the results show that there can be a trade-off between fiscal and monetary policy. In other words, other policy objectives may determine the desired balance between monetary and fiscal policy interventions.

Complementary literature review

The prominence of global current-account imbalances spurred a wealth of research on the general characteristics associated with the correction of current-account deficits. This could give useful guidance in forecasting the reversal of the domestic deficit, even though no two cases are exactly the same. The experiences of different countries, and even the same country at different moments, will be influenced by a host of factors, including global sentiment, global liquidity, policy credibility, global inflation conditions, the underlying inflation rate, and the extent of exchange rate pass-through to inflation, which may in itself be time-varying.

Some of the key conclusions in the literature not deliberated in the paper under discussion are as follows:

- The *income growth correction* usually involves a combination of slower domestic demand growth, lower imports and higher exports. The adjustment is usually associated with a deterioration in fiscal balances and a pause in the accumulation of official reserves (Freund

and Warnock, 2005). In developed countries, growth typically peaks two years in advance of the current-account deficit and is back at pre-deficit levels four to five years after the trough in the current-account shortfall (Freund, 2000). Freund (2000) estimates that a current-account reversal usually involves a reduction in growth from around 3,0 per cent to around 1,0 per cent; Edwards (2006) shows that growth in gross domestic product (GDP) per capita usually drops by between 3,5 percentage points and 5,0 percentage points.

- Adjustment through the external balance usually occurs first through *import compression* and with a longer delay in *improved export performance* (Freund, 2000). The pick-up in exports is usually more important than the retreat in import growth. Therefore, current-account reversals in emerging markets usually occur when growth in developed countries is strong, due to the positive impact on emerging-market exports.
- In most countries, the *savings rate* declines before the current-account reversal, while the investment rate drops after the reversal with no further change in the savings rate (Freund, 2000).
- Generally, a large part of any associated *exchange rate adjustment* precedes a current-account reversal (Freund and Warnock, 2005). A current-account reversal does not necessarily involve a currency crisis (Freund, 2000; Milesi-Ferretti and Razin, 1998); less than a third of reversals were historically preceded by a currency crisis (Milesi-Ferretti and Razin, 1998). Most countries experience a cumulative real depreciation of around 20,0 per cent beginning in the year before the maximum current-account deficit (Clausen and Kandil, 2005). Current-account deficits usually benefit from a currency adjustment with a lag of around two years (Edwards, 2006).
- *Larger current-account deficits* usually take longer to reverse and they tend to be associated with more severe income growth moderations (Freund and Warnock, 2005).
- Current-account deficits driven primarily by *investment* (as opposed to consumption or fiscal) expansion tend to be reversed largely through a slowdown in GDP growth rather than currency depreciation. This could be the result of a decline in the investment rate once the capacity constraints that led to the investment boom have been addressed. The opposite is true for consumption-driven current-account shortfalls (Freund and Warnock, 2005). This is arguably owing to foreign investors being more punishing towards the currencies of countries where elevated current-account deficits are driven by consumption, rather than investment. In the former case, the deficit would clearly be unsustainable. In the latter case, investors may be more tolerant in anticipation of eventual increases in economic growth and, by extension, investment returns.

- The literature suggests that very large current-account deficits do not matter as long as they are the result of higher (private-sector) investment (Corden, 1994) and “a higher deficit in the current account in response to domestic growth goes hand in hand with its own external financing” (Clausen and Kandil, 2005).
- There is no statistical correlation between the *composition of the funding* of the current-account deficit and the relative importance of the adjustment through the income or exchange rate channels (Freund, and Warnock, 2005). The funding composition also does not seem to impact on the severity of the adjustment. In *emerging markets*, all types of capital inflows typically decline at the time of the current-account reversal (Rothenberg and Warnock, 2005). In the case of industrial countries, by contrast, the adjustment is most pronounced through banking or ‘other’ flows in the financial account of the balance of payments and the adjustment usually occurs in the year following the current-account trough (Freund and Warnock, 2005).
- Reversals of current-account deficits occur through a combination of *exchange rate depreciation and slower income growth* (Freund, 2000; Freund and Warnock, 2005). Countries that resist exchange rate adjustments (through, for example, fixed exchange rate regimes) generally sacrifice more in terms of income growth than those allowing for exchange rate adjustment. Current-account reversals in *emerging markets* are generally not associated with large changes in growth, possibly because of relatively larger exchange rate adjustments (Milesi-Ferretti and Razin, 1998; Chin and Prasad, 2003; Freund and Warnock, 2005). Generally, growth in more open economies tends to suffer less during a current-account reversal (Milesi-Ferretti and Razin, 1998).

Examples of global current-account reversals include the following:

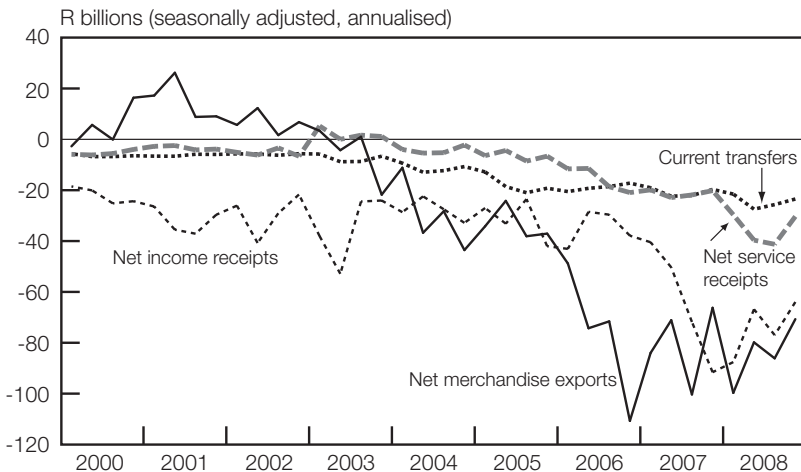
- *Australia*’s current-account deficit of 6,1 per cent of GDP in 1989 fell to 3,6 per cent of GDP two years later. Its economic growth rate swung from 5,1 per cent in 1989 (when the deficit peaked) to 1,4 per cent the following year and -1,0 per cent two years later. It only recovered to 3,8 per cent in 1993 – four years after its deficit had peaked. The Australian dollar depreciated by 17,0 per cent between 1989 and 1993. However, this current-account reversal was not sustainable. By 1995 its currency and growth rate had reverted to the levels that prevailed prior to the current-account correction and its current-account shortfall rose to 5,3 per cent of GDP in 1995.
- *New Zealand* managed to reduce a deficit of 6,3 per cent of GDP in 1999 to 2,6 per cent of GDP two years later, while its economic growth rate fell from 4,0 per cent to 2,7 per cent and its currency depreciated by 18,0 per cent. However, its currency subsequently appreciated by 46,0 per cent and its deficit reached -8,7 per cent of GDP in 2006.

- *Canada's* deficit of 4,2 per cent of GDP in 1981 was reversed abruptly to a 0,6 per cent surplus in 1982. Over this period, its growth rate fell from 5,0 per cent to -2,9 per cent, before recovering to 2,8 per cent in 1983. Its currency depreciated by 18,0 per cent between 1981 and 1985.
- *Italy* reversed a deficit of 2,4 per cent of GDP in 1992 to a surplus of 0,8 per cent the following year. Between 1992 and 1993 its economic growth rate dropped from 0,7 per cent to -1,1 per cent, before recovering to 2,2 per cent in 1994.
- A current-account deficit of 5,1 per cent of GDP in the *United Kingdom* in 1989 was reversed to 1,8 per cent two years later. The pound did not depreciate materially, but economic growth fell from 5,2 per cent in 1988 to 2,1 per cent in 1989, and 0,6 per cent and -1,5 per cent in the two subsequent years respectively.

The South African current-account deficit

Figure 1 clearly illustrates that the deterioration in the current-account deficit in recent years is largely due to a deterioration in the *trade account*, which went from a traditional surplus position to a shortfall that exceeded the other two main components of the current account (net service and income receipts). This was the result of higher imports in all the categories, including strong growth in capital goods on the back of double-digit growth in real fixed capital formation, which has a high import intensity. The trade shortfall is unprecedented; not even during the investment boom of the early 1980s did the trade account swing into a

Figure 1: Composition of balance of payments

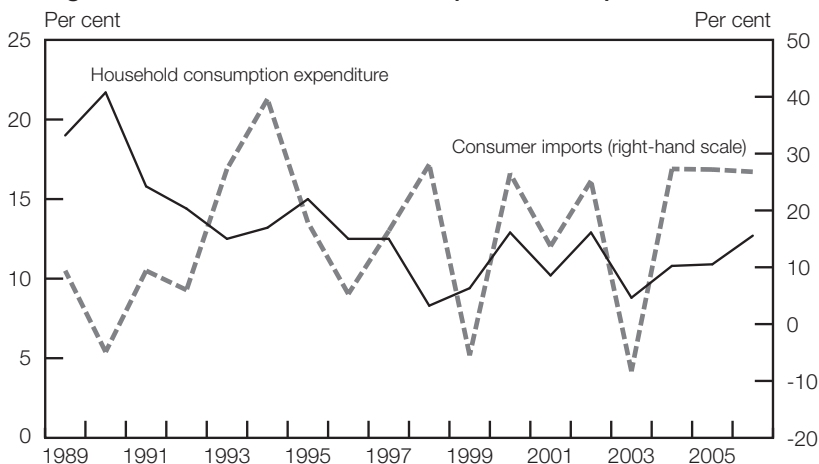


Sources: South African Reserve Bank and Barnard Jacobs Mellet Research

sustained deficit. However, any historical comparison is complicated by the structural/political changes that took place in the economy. In particular, elevated trade and current-account deficits were impossible during the era of international sanctions against South Africa, which limited the availability of foreign capital. South Africa's trade and current-account deficits therefore had to be contained, and this, in turn, curbed actual and potential economic growth. The trade and current-account deficits were seen as imposing speed limits on the economy's performance. The current record-high trade and current-account deficits could therefore be partly attributable to the unprecedented access to foreign capital that is available and willing to fund the shortfall.

An analysis of the composition of imports suggests that *consumer goods* constitute around 25,0 per cent of total goods imports. This part of the trade deficit is expected to respond to the slowdown under way in consumer demand. If the current *investment expansion* is reasonably interest rate insensitive, as appears to be generally accepted, then the bulk of the import account may be somewhat unresponsive to the tighter monetary policy stance and softer business cycle. However, the investment cycle is expected to be moderately sensitive to higher interest rates and the slowdown in consumer demand. If this is the case, it could offer some reprieve to the growth in the current-account and trade deficits.

Figure 2: Growth in consumer imports and expenditure

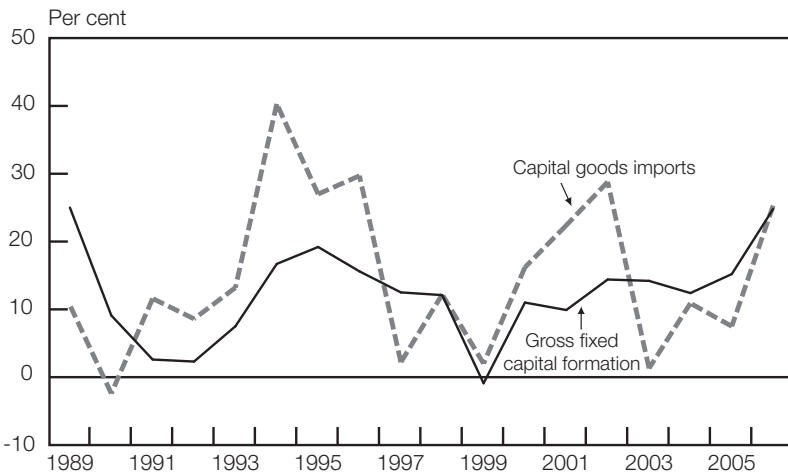


Sources: Industrial Development Corporation, South African Reserve Bank, South African Revenue Service and Barnard Jacobs Mellet Research

A closer look at these two types of imports is instructive. While the ratio of *capital goods imports* to total imports remains reasonably steady at around 3,6 per cent, the ratio of capital goods imports to fixed capital

formation has risen materially in recent years from around 26,4 per cent in 1990 to 46,4 per cent in 2006. However, on the back of the construction boom in recent years, capital spending has become less import-intensive to a ratio of 46,4 per cent in 2006 from a peak of 56,6 per cent in 2002. There is a reasonably strong correlation between growth in capital formation and capital goods imports (see Figure 3). The nominal capital formation growth is expected to slow materially. This component of the current-account deficit-to-GDP ratio could therefore continue to rise in 2008.

Figure 3: Growth in capital imports and expenditure



Sources: Industrial Development Corporation, South African Reserve Bank and Barnard Jacobs Mellet Research

While the ratio of *consumer goods imports* to total imports remains reasonably steady at around 25,3 per cent, the ratio of consumer goods imports to total household consumption expenditure has risen materially in recent years from an average of around 14,0 per cent in 1990 to 26,8 per cent in 2006.

Consumer spending has therefore clearly become more import-intensive, arguably at least partly due to rising GDP per capita.¹ It is noteworthy that there is a reasonably strong correlation between growth in household consumption expenditure and consumer goods imports, with the growth in consumer goods imports being much more volatile (see Figure 2). This suggests that the slowdown under way in consumer demand will likely be associated with substantially slower, if any, growth in consumer goods imports.

Imports of *raw materials and intermediate goods* have risen faster than the other merchandise import categories since 2005. This category rose to 42,0 per cent of goods imports in the first quarter of 2007 from 37,0 per cent of goods imports in 2005. This surge in raw material and intermediate goods imports was owing to a combination of rapid price escalation and volume growth. The subsequent decline in the prices of raw and intermediate materials should curb the growth in these imports. This should be reinforced by softer economic activity. Therefore, some retreat in the nominal growth of this component of the current-account shortfall is expected in 2009.

In recent years the surge in *oil prices* in particular made a large contribution to the widening of the trade deficit. Mineral imports, which are primarily made up of oil imports, rose from an average of 14,0 per cent of total imports in 2004 to 19,0 per cent in 2007. This was largely driven by the escalation in oil prices, although rising oil import volumes also played a meaningful role in this regard. From October 2003 to October 2007, the value of mineral imports rose by 301,1 per cent. Over this period the rand oil price rose by 175,1 per cent.

The substantial rise in net payments to other Southern Africa Customs Union (SACU) members has increased along with the growth in imports, especially since the revision of the formula in 2002. The average ratio of net *SACU payments* to goods imports rose from 2,7 per cent between 1990 and 2002 to 3,9 per cent between 2002 and 2007. These payments now constitute around 1,1 per cent of GDP.²

Table 1: Econometric model: Exports*

Variable	Coefficient	t-value
Constant	-2,9	-2,8
Nominal effective exchange rate	-0,3	-4,2
Commodity prices (South African rand)	0,7	13,7
Global demand	2,2	8,9
R ²	99,1%	

* All the variables are in natural logarithmic form

Source: Barnard Jacobs Mellet Research

Barnard Jacobs Mellet (BJM) Securities' econometric model of South African exports suggests that they are driven by commodity prices, global growth and the South African rand (see Table 1).³ Unfortunately, it is impossible to measure the benefits of the ongoing infrastructure and

capacity expansion accurately, which means that it cannot be captured accurately in econometric models such as those in Figure 4. BJM’s imports model suggests that imports are driven by gross domestic expenditure (GDE), the rand and exports (see Table 2 and Figure 5).⁴

Figure 4: Econometric model of exports

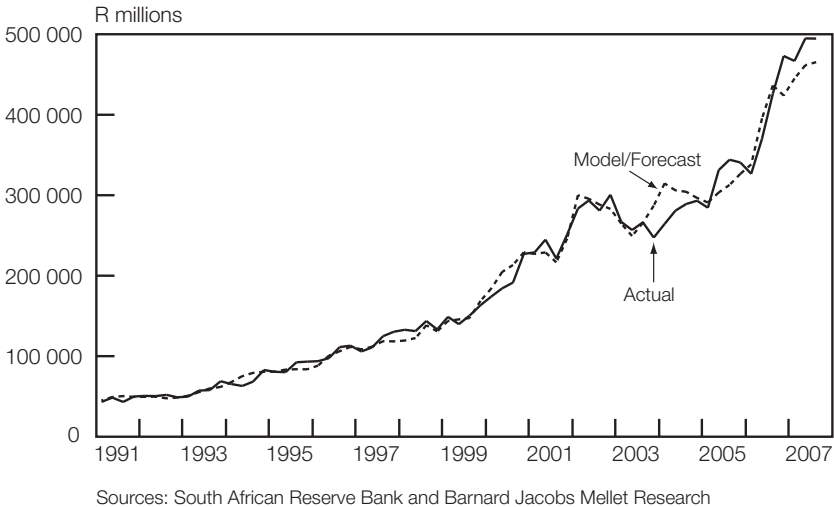


Table 2: Econometric model: Imports*

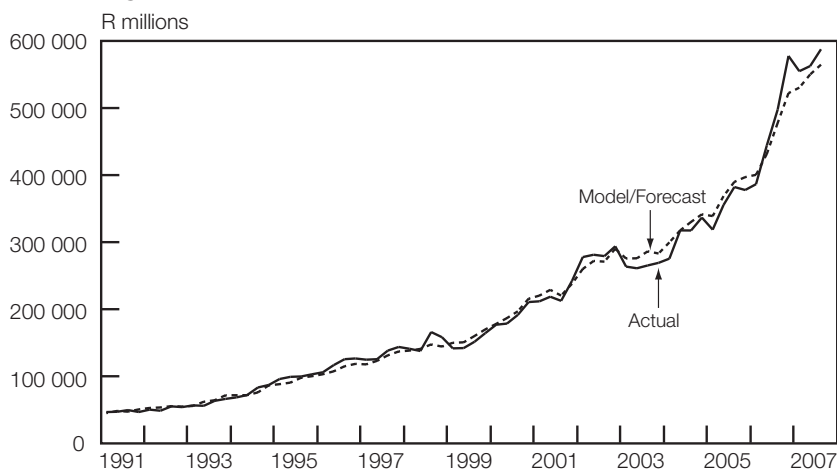
Variable	Coefficient	t-value
Constant	-3,7	-8,8
Gross domestic expenditure	0,7	6,5
Nominal effective exchange rate	0,1	1,2
Exports	0,5	5,0
R²	99,5%	

* All the variables are in natural logarithmic form

Source: Barnard Jacobs Mellet Research

Net exports should gradually begin to reap the benefits of the ongoing investment boom and improvements in infrastructure. However, in the short term, gains in net exports will be curbed by weak global demand. While the slowdown in growth will be less pronounced in the developing countries in which growth tends to be more commodity-intensive, they will not escape unscathed. The possible exposure of excess capacity in China, in particular, could curb growth in the demand for, and prices of, *commodities*.

Figure 5: Econometric model of imports



Sources: South African Reserve Bank and Barnard Jacobs Mellet Research

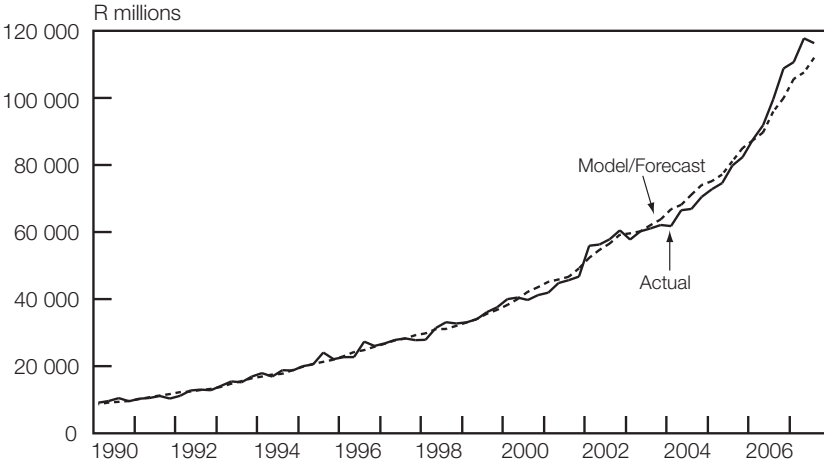
The research under discussion largely assumes that the so-called invisible portion of the current-account deficit (largely service and income payments and transfers) is structural or exogenous. This is possibly the macroeconomic model's biggest weakness and would probably distort the empirical results.

Net *services payments*, which are essentially made up of tourism-related payments, have traditionally occupied deficit territory. Although the nominal value of this shortfall has risen rapidly in recent years (see Figure 3), it remains reasonably stable relative to the value of GDP (see Figure 4). Services payments have rarely, if ever, declined historically, which suggests that relief from this segment of the current-account deficit is unlikely. However, during 2003 services receipts rose faster than services payments, following the sharp depreciation of the rand and recovery in the business cycle in 2002. This was the only year since 1980 in which net service receipts had been in positive territory.

An *econometric model of services payments* suggests that these payments are essentially driven by domestic economic growth (see Figure 6). According to BJM's econometric results, a 1,0 per cent increase in nominal GDP would lead to a 1,3 per cent increase in (nominal) service payments.⁵ The statistical criteria indicate that this model is adequate in explaining service payments and that the exchange rate does not play a significant role in driving service payments. Intuitively, tourism outflows are expected to be positively correlated with domestic economic and income growth. This segment of the current-account shortfall therefore

appears to be sensitive to the business cycle. It could therefore very well assist in the reversal of the current-account deficit in the current setting.

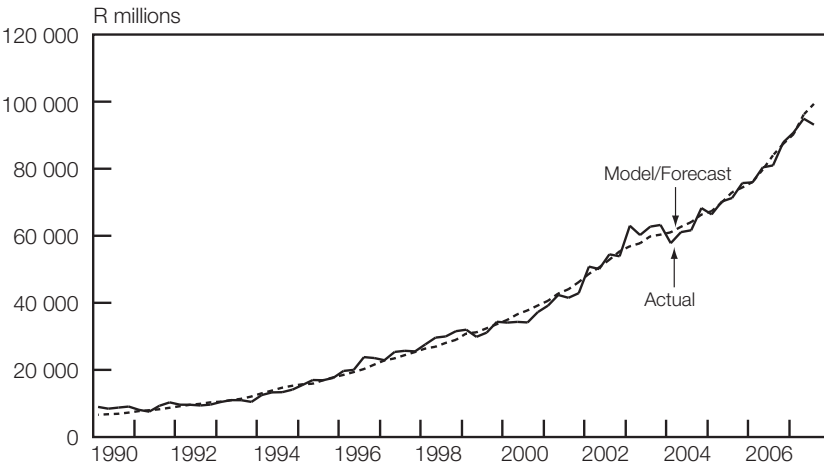
Figure 6: Econometric model of services payments



Sources: South African Reserve Bank and Barnard Jacobs Mellet Research

BJM's econometric model of *services receipts* suggests that they are driven by global economic growth, the rand and domestic growth (see Figure 7).⁶ Intuitively, it would make sense for tourism inflows to rise with domestic economic growth insofar as it attracts business tourism. The

Figure 7: Econometric model of services receipts

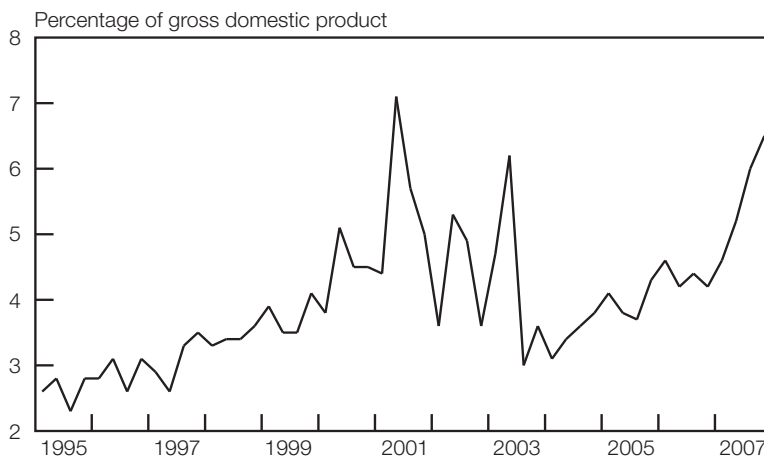


Sources: South African Reserve Bank and Barnard Jacobs Mellet Research

domestic business cycle is also closely correlated with that of other economies in the region, which would explain why higher domestic economic growth will be positively correlated with tourism inflow from neighbouring countries. Around 71,0 per cent of foreign tourists visiting South Africa come from other African states and the top four source countries are all immediate neighbours.⁷ According to the econometric results, service receipts will rise by around 1,1 per cent in response to a 1,0 per cent rise in nominal GDP. This would suggest that the benefits of the business cycle slowdown in curbing service payments mentioned earlier may be partly offset by the concomitant impact of domestic growth on service receipts.

While the value of net *income payments* (essentially made up of dividend and interest payments) has risen rapidly in recent years, it is not extraordinarily high (compared with historical values) when expressed as a ratio to GDP (see Figure 8). The income account has historically been somewhat volatile and, unlike the services account, occasionally recorded outright declines, which makes the possibility of material relief from this segment of the current-account deficit somewhat more plausible than from services.

Figure 8: Income payments



Sources: South African Reserve Bank and Barnard Jacobs Mellet Research

Changes in *income receipts and payments* have high correlations with changes in the *exchange rate* (with no significant difference between their correlations with the US dollar/South African rand versus the trade-weighted rand). Both income payments and receipts are negatively correlated with the rand, so that a stronger rand tends to be associated with lower income payments and lower income receipts. Income receipts

are probably suppressed by the translation effect of a stronger rand on foreign currency income, as well as the disincentive that it creates towards repatriation of investment returns earned abroad.

Dividend payments may generally be lower during periods of rand strength due to their adverse impact on the profitability and, by extension, dividend payments by the mining sector, which still plays a disproportionate role in the domestic stockmarket. *Interest payments* may be lower during periods of rand strength insofar as they will underpin lower inflation and, in turn, interest rates. Changes in income payments and receipts seem to respond to changes in the rand with a lag of around two quarters, given that they have a higher correlation than that between concurrent changes in net income payments and the rand.

Econometric modelling of income payments proved to be instructive and intuitively sensible. The importance of continued net foreign purchases of domestic bonds and equities was very clear. It was virtually impossible to get a model that satisfies the economic and statistical criteria without including a measure of the stock of bonds and equities held by foreigners. However, due to data constraints in this regard, one should guard against over-emphasising the estimated coefficients.

Since the primary focus of this commentary is on the response of income payments to interest rates and the business cycle, the *dividends* on the JSE All-Share Index were also modelled econometrically to avoid the data problems associated with measuring the value of foreigners' holdings of South African bonds and equities. According to the results, dividends are driven in the long run by nominal GDP growth, interest rates and commodity prices, which are in line with *a priori* expectations. According to the analysis, dividends generally increase in line with nominal GDP. At first glance this may seem to suggest that dividend payments could potentially offer some reprieve to the current-account shortfall if nominal economic growth subsides in 2008. History shows that the ratio of income payments to GDP has continuously risen due to the accumulation of domestic securities by foreigners (see Figure 8). This could therefore corroborate the conclusion in the literature that current-account reversals in emerging markets usually partly stem from a decline in capital inflows. Meaningful reprieve from dividend outflows is unlikely unless *foreign purchases of domestic securities* subside (as they did towards the end of 2008).

Alternatively, net income payments could decline if *income receipts* were to rise. This could stem from a rise in South Africans' holdings of foreign securities and/or a rise in the yield earned by South Africans on investments abroad. The latter is unlikely, given that interest rates and forecast earnings growth are higher domestically than in South Africa's major trading

partners. Further relaxation of the remaining *exchange controls* could therefore assist in reversing the current-account deficit in the same way that it had assisted in boosting the deficit. However, while the National Treasury earlier in 2008 relaxed exchange controls with regard to institutions, most of the institutions remain well below the regulatory thresholds.

Reversal of the domestic current-account shortfall

In terms of the reversal of the South African current-account deficit, the literature review and global experience therefore suggest the following:

- The growth in *imports* should moderate in response to the slowdown under way in domestic demand. My economic forecasts are broadly consistent with the global experience that growth peaks around two years prior to the peak in the current-account deficit. Import growth should also be curbed by the anticipated consolidation in commodity prices. The rand depreciation in 2008 should put further downward pressure on imports from 2009.
- Meanwhile, *export* performance should benefit from the investment boom and infrastructure improvements. Export growth will likely be contained this year by softer global growth and commodity prices, but it should thereafter gather pace as global economic conditions improve. The anticipated improvement in export performance is absolutely critical to a reversal of the current-account deficit.
- The literature is somewhat ambiguous on the likely relative importance of the *growth and exchange rate channels* in correcting the current-account deficit. On the one hand, the openness of South Africa's economy and the flexibility of its exchange rate could curb the slowdown in economic growth needed to facilitate a current-account reversal. On the other hand, the investment-driven nature of the current-account shortfall would suggest that softer investment and economic growth will likely be needed as part of the reversal.
- The magnitude of the deficit points towards a *protracted correction* in the current-account deficit.
- The nominal, trade-weighted *South African rand* depreciated by 22,8 per cent between January and October 2006. While it subsequently strengthened somewhat, especially against the ailing US dollar, it is still around 20,7 per cent weaker on a trade-weighted basis than in January 2006. This currency adjustment is in line with other countries in which elevated current-account shortfalls were reversed, even before taking into account the anticipated depreciation in 2008.
- All types of *capital inflows* will likely fall at the time of the current-account reversal. This will not necessarily cause further rand depreciation, if it occurs in response to a reduced need for foreign funding. Co-movement

in foreign capital inflows and the need for it can at least partly be explained by trade credit agreements, where capital goods' purchases are funded with supplier credit. The possible reduction in capital inflows will therefore not necessarily cause substantial further rand depreciation if it is merely a response to a reduced need for foreign funds.

Notes

¹ The small available sample size prevents robust econometric analysis of the determinants of the ratio of consumer imports to spending. It appears as if it may also be influenced by the rand. For example, the ratio fell in the aftermath of the sharp rand depreciations in 1998 and 2001.

² Total government transfers, of which SACU payments make up the bulk, were used in this calculation.

³ Co-integration tests confirmed that the variables are co-integrated.

⁴ The inclusion of exports in this equation captures the need to import certain inputs in the manufacturing of export goods. This is similar to the structure of the South African Reserve Bank's macroeconomic model.

⁵ Co-integration tests confirmed that the variables are co-integrated.

⁶ The regression has an R^2 of 99,2 per cent. Co-integration tests confirmed that the variables are co-integrated.

⁷ This is measured by the number of tourists. Neighbouring countries are also six of the top ten source countries of foreign tourists to South Africa.

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