External Shocks, Financial Markets and the Real Economy – Policy Options in South Africa

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ABSTRACT

The paper considers the transmission of an external shock through the bond, equity, money and foreign exchange markets and, depending on the nature and duration of the shock, the attendant effects on various sectors of the South African economy. While it is acknowledged that the ability of the Reserve Bank to intervene in the foreign exchange markets is limited, it is argued that the current policy may not be appropriate in the face of a sustained speculative attack. Instead, a policy of selective intervention aimed at the relative degrees of change in foreign exchange and interest rates may be used to affect the distribution of costs between various sectors of the economy.

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1 INTRODUCTION

It is 8 o'clock in the morning on Friday 28th of April, 2000. Members of a top asset management company meet in their office in Frankfurt to discuss the news that an important Southern African country is experiencing a destabilizing internal political crisis. Because of its close trade and financial links with South Africa, the effects of this crisis are expected to rapidly spread to South African markets. A heavy speculative attack against the rand is expected, and consensus is reached that a dramatic depreciation of the current R/$ exchange rate from its present value of R6.70/$ to around R7.20/$ is imminent – an expected rise far in excess of that which is indicated by the current forward exchange rate of R6.85/$.

Having formed this new expectation of the future exchange rate, our Frankfurt team naturally expects the dollar value of their South African bond and equity holdings to fall; and so too do many other portfolio managers across the world. Suppose they respond by putting their South African short-term bonds up for sale

in the local bond market – the increased supply would, since additional foreign demand is unlikely to be forthcoming, drive bond prices down and short-term yields up. How will these actions impact on local financial markets and the real economy? What, if anything, should the monetary authorities do to cushion or even counter the impact?

The financial impact – discussed in section 2 below – can be broken up into three "transmission channels", referred to as the *substitution, leads-and-lags* and *speculative* effects, as well as the *accommodation response.* The real effects are briefly considered in section 3, the broad policy implications in section 4, and a brief conclusion is provided in section 5.

2 FINANCIAL IMPACT

Information about increased activity in the bond market will be readily available and quickly spread among local dealers and other relevant parties, including commercial banks, insurance companies, importers and exporters, and the Reserve Bank itself – all of whom will adjust their expectations of the future spot exchange rate.

Substitution Effect

The substitution effect would work through two channels – portfolio adjustments and the switching of trade and other financing from foreign to domestic markets.

Once bond prices have been driven down far enough, banks and other financial institutions will enter the bond market and buy the cheaper short-term bonds on offer. Their decision would be a perfectly rational one – substituting cheaper assets for relatively more expensive ones in their respective asset portfolios. These portfolio adjustments by both foreign and domestic fund managers would have a direct impact on the long-term bond market, the equity market, the foreign exchange market and the money market.

Bond and Equity Markets. The funding necessary for the purchase of the short term bonds could be arranged through the sale of long-term bonds and/or equities. The effect in the bond market would be a fall in the price and higher long yields, and in the equities market a decrease in share prices.

Foreign Exchange Market. In order to repatriate the proceeds of the short-term bond sales, foreign fund managers would offer the rand proceeds in exchange for foreign currency (say dollars) in the foreign exchange market. The increased demand for dollars would put upward pressure on the current R/$ spot exchange

Money Market. The effect on domestic interest rates through these portfolio adjustments is somewhat uncertain. Upward pressure would arise to the extent that the funding for the purchase of short-term bonds was supplemented by borrowing in the money market, but this would be countered to a greater or lesser extent by the additional supply of rands arising from dollar purchases in the foreign exchange market.

Increases in the R/$ forward exchange rate (explained below) will raise the cost of covered foreign borrowing, leading to trade and other financing being shifted onshore. Pressure on domestic liquidity and interest rates would result and, as noted by CREFSA (1998: 28), would have a marked impact on bank credit extension to the private sector. Switching between foreign and domestic financing would also lead to a decreased supply of dollars to the foreign exchange market and thus an increase in the pressure on the spot exchange rate.

Leads-and-lags Effect

A second channel of transmission is felt through "leading and lagging" by domestic importers and exporters. Importers, expecting a dramatic depreciation of the exchange rate in future, would gain by *leading* their dollar payments, profiting through obtaining the dollar at a more favourable (lower) current spot rate. This may well require local borrowing of rands in order to finance the purchase of spot dollars sooner rather than later. Exporters, on the other hand, would profit by delaying the conversion of their dollar receipts into rands and exchanging them at a more favourable (higher) future rate; this may again require local borrowing in order to meet some of their current expenses. The actions of both importers and exporters would thus result in direct pressure for an increase in short-term interest rates, and further pressure on the current spot exchange rate. Indeed, CREFSA (1998: 24) argue that these trade-related outflows were mainly responsible for the large outflow of short-term capital and the substantial depreciation of the rand in 1996.

Importers and exporters may also use the *forward exchange market* to cover themselves against the expected currency depreciation. If the expected spot exchange rate exceeds the current forward rate – as we have assumed above – importers would buy dollars forward at the current forward rate; exporters, on the other hand, would withdraw from the forward market or cancel forward sales previously contracted. The effect of these transactions will, as explained below, increase the pressure on short-term interest rates and the spot exchange rate.

Speculative Effect

Spot market speculators – also expecting a dramatic rand depreciation – would gain by borrowing rands in order to buy dollars which they invest abroad at the prevailing world interest rate. At the appropriate time, they will convert their dollar proceeds back into rands at a more favourable rate in order to repay the original loan, profiting by the difference between the rate at which the dollars were originally bought and the (higher) rate at which they are sold. Such speculative transactions will continue as long as the gain from the expected currency depreciation exceeds the loss incurred from the difference between the domestic and world interest rates. The initial act of borrowing will once again put upward pressure on short-term interest rates, whilst the initial buying of dollars will likewise raise the spot exchange rate.

Speculators are likely also to enter the *forward market* if they believe the future spot exchange rate to be higher than the current forward rate. Dollars would be bought forward at the current forward rate and, when the contract matures, speculative profits taken by selling these dollars against rands at the higher future spot rate.

The additional demand for forward dollars would tend to push the forward rate up, leading to a wider margin between the spot and forward rates than that suggested by the interest rate differential, and making profitable risk-free *arbitrage* possible. Arbitrageurs would borrow rands, buy dollars spot (for investment offshore) and simultaneously sell the dollars forward. The loss arising from the fact that domestic interest rates are higher than world rates is more than offset by the gain from the forward sale of the dollars at a relatively higher rate. Once again, pressure on interest rates and the spot exchange rate would be intensified.

The pressure on the money and foreign exchange markets arising from these forward transactions would be aggravated through spot covering by the *commercial banks*. We can trace this effect through the actual forward transactions undertaken with the banks. Outright forward purchases of dollars from the commercial banks would, as explained above, be undertaken by both pure forward speculators and by importers leading their payments through the forward market. These additional purchases of forward dollars, taken together with reduced sales of forward dollars as exporters withdraw from the forward market, would create a net excess demand for forward dollars. The effect would be that the commercial banks would be left with a net oversold forward position which, to the extent that this was not met through forward sales by arbitrageurs, would expose the banks to foreign exchange risk. Spot dollars would be needed for delivery on maturity of the forward contracts and, if the spot rate ruling at the time were higher than the contracted forward rate, the banks would incur a loss on

each dollar purchased (given by the difference between the two prices). These potential losses can be avoided by the banks covering their residual net forward sales in the spot market; the bank would borrow rands in order to buy dollars spot immediately, and invest these dollars offshore at the current world interest rate. On maturity of the forward contract – say three months later – the bank would withdraw its foreign investment to supply the requisite amount of dollars to the speculator or importer. The additional domestic borrowing and spot purchases of dollars would increase the pressure on both interest rates and exchange rates.

Accommodation Response

The increased borrowing pressure in the money market, as outlined above, means that the commercial banks would probably have to approach the Reserve Bank for additional liquidity at the daily tender, and the repo rate can thus be expected to increase along with other short-term interest rates.

Increased pressure on the current spot exchange rate, again for the reasons outlined above, may raise inflationary expectations in the economy. To the extent that the automatic increase in interest rates is not sufficient to counter these expectations, the Reserve Bank may respond by adopting a less accommodating stance and limiting the amount of liquidity provided. Banks with unsatisfied liquidity needs would have to make use of a marginal lending facility at a penal rate, so that a sudden capital outflow and the associated drain in liquidity would be rapidly met by sharp increases in short-term interest rates.

3 REAL IMPACT

Whether or not the speculative attack is transmitted to the real economy, and the extent of any effects felt, will depend on the nature and duration of the shock itself and the recovery afterwards. Specifically, this will depend on the time taken for foreign confidence in the South African economy to be restored and the outflows of international capital to be reversed.

If the crisis is short and quickly reversed, the real effects will be limited as the capital account recovers and the pressure on both interest rates and the spot exchange rate are relieved. However, periodic repeats of such external shocks would lead to increased volatility in financial markets. Volatility in the exchange rate and interest rates could cause a great deal of uncertainty, possibly discouraging both trade and new investment projects and leading to a reduction in long-term growth prospects. The cost to the South African economy of participating in the global economy would thus be significantly increased.

If the external shock and its aftermath are more prolonged, as was the case with the East Asian crisis (Botha, 1999; SAF, 1998), the effect on the real economy can be devastating. The combination of a falling rand and rising interest rates will boost production costs and inflation; higher interest rates will discourage consumption and investment spending, precipitating closures and bankruptcies and thus destroying jobs; the induced fall in tax revenue will limit the state's ability to provide social services and infrastructure; declining expenditure on infrastructure will in turn further reduce real investment and harm long-term growth prospects.

It is often argued that a depreciating exchange rate can encourage exports and curb imports, but this will depend to some extent on the potential for growth in our major export markets as well as on the price elasticity of demand for our imports. Growth in manufactured exports tends to be slow, and could be inhibited by any uncertainty regarding future exchange rates. Furthermore, the majority of South Africa's imports are of a capital or intermediate nature. These goods have a relatively low price elasticity of demand, and import volumes are unlikely to decline significantly in the face of higher prices. Indeed, the resulting higher production costs may well offset the positive effect of the depreciation on the increased international competitiveness of our exports.

4 POLICY RESPONSE

How should the monetary authorities respond to the crisis? Should they take action in an attempt to minimize the effects of the crisis, or should they simply ride out the storm?

The SA Reserve Bank does have several options (or combinations thereof) available to it (SAF, 1998). The first option is not to respond at all, and to accept the interest rate hikes and currency depreciation that are well-nigh unavoidable in the wake of a major external shock. Secondly, the Bank can intervene in the money market by accommodating the increased borrowing pressure and thus avoiding or reducing the pressure on interest rates; this will shift the burden of adjustment onto the exchange rate. Thirdly, the Bank can intervene in the spot and/or forward exchange markets and shift the burden of adjustment onto interest rates.

Given South Africa's current state of economic development, the "hands off" approach is probably not appropriate. While positive economic signals are emerging and international investment ratings are being upgraded, Standard and Poor (cited in Citadel, 2000) have expressed some concern regarding factors such as low savings and investment rates, labour market rigidities and HIV.

Possibly more importantly, the fact that the South Africa's reserves cover only around 50% of annual external financing requirements, and that these consist predominantly of short-term portfolio capital, makes the country vulnerable to volatile capital flows and means that a high degree of *potential* volatility in foreign exchange and interest rates exists. South Africa may thus be viewed as a candidate for contagion[2], with the real costs to the economy of a neutral stance by the Bank being both unpredictable and potentially severe.

The previous Governor of the Reserve Bank, Chris Stals (1999) has argued that in the face of heavy speculative pressure, a contraction in domestic liquidity, higher domestic interest rates and a depreciation of the rand are unavoidable. From a practical point of view, however, it may be argued that some form of intervention should be considered, and the question that needs to be addressed concerns the *extent* of intervention in the money and foreign exchange markets that should be undertaken in an attempt to affect the *relative magnitudes* of changes in short term interest rates and the exchange rate. This will in turn depend, at least in part, on the current state of the economy, the government's macroeconomic objectives and the costs and benefits associated with the intervention policy. The extent of the intervention contemplated is also constrained to some extent by the *ability* of the Bank to intervene. The Bank may ultimately have to make a judgment call: either to reduce inflationary pressure by protecting the currency, or prevent a severe downturn in the domestic economy by means of an accommodating monetary policy. Both options carry high risks, as we show below.

Firstly, if inflation is an overriding concern (*vis-à-vis* growth and employment), then the Reserve Bank could intervene in the spot and forward markets to protect the rand and limit the cost-raising effects of depreciation, thus shifting the burden of adjustment to short-term interest rates. The effectiveness of this intervention will, however, depend on a number of factors:

Spot Market Intervention. The ability of the bank to intervene in the spot exchange market is limited by the amount of foreign exchange it has at its disposal and any international borrowing facilities it has available. Depending on these limitations and on the strength of the expectations concerning the future exchange rate, foreign fund managers and speculators may well believe that the intervention will ultimately have to be abandoned, and the speculative pressure will be maintained.

Forward Market Intervention. Intervention in the forward market, while it can relieve pressure on both interest rates and the exchange rate, is limited by the state of the "official forward book". Selling dollars forward in order to prevent an increase in the forward margin, as explained above, will mean that the *net*

oversold position on the Reserve Bank's forward book will increase. The current state of the forward book, although being reduced, is a matter of both domestic and international concern, and it will once again be believed that the intervention will ultimately have to be abandoned.

Intervention in the foreign exchange markets in order to limit the extent of the depreciation will, as indicated above, shift the burden of adjustment onto domestic interest rates. While higher interest rates are generally regarded as being necessary to contain inflationary pressures, they could have the perverse effect of boosting production costs and causing a *once-off* increase in inflation.

Higher interest rates are also bound to have a greater immediate negative impact on a much broader segment of the population than an equivalent currency depreciation. With relatively high levels of household debt as well as a small business sector that is heavily reliant on borrowed capital, these two sectors would bear the brunt of the increased interest rates.

Secondly, the Bank could use accommodation policy to limit the extent to which short-term interest rates increase. In this case the burden of adjustment would be borne mainly by the exchange rate, and the currency would depreciate by a relatively bigger margin than would otherwise be the case. The depreciation would reduce the difference between the expected and current spot exchange rates, as well as bring the forward margin into line with the difference between domestic and foreign interest rates.

This policy is similar in many respects to the "hands off" position described above, but with a higher degree of depreciation. Although it has been used with some success in certain foreign countries, it has been argued that the current structure of the South African economy, particularly with regard to its external sector, would make this policy very risky.

The major concern surrounding a depreciating currency is the ensuing impact on domestic inflation. It can be argued that the inflationary effects of a depreciation may in any case be limited as a result of lower dollar-denominated world prices and increased global competition, restricting the ability of local producers to pass on cost increases. Nonetheless, a large-scale and prolonged depreciation would surely raise the domestic prices of imported capital and intermediate goods, cutting profits among domestic producers and forcing them to retrench workers and postpone new capital investments

Goldstein *et al.* (1992) also warn that, if speculative pressures are allowed to be absorbed solely by the exchange rate, this may simply help to feed the speculation. They argue that the notion that exchange markets are inefficient in

the sense of being driven partly by bandwagon effects and speculative bubbles has gained increasing empirical support. A perception that the authorities are unwilling to defend the currency through interest rate adjustments could thus lead to an intensification of speculative pressure and increased volatility, as well as threatening the credibility of exchange rate management policy.

5 CONCLUSION

Participation in the global economy, while accepted as a necessary condition for sustained economic growth, also exposes emerging countries to the volatility of international capital flows. These flows can disrupt financial markets and, depending on both their duration and repetition, have damaging real effects on the economy.

Given the predominance of short-term capital in total capital flows, South Africa remains vulnerable to external shocks. Asian contagion had a pronounced impact on this country in 1997 and 1998, while the year 2000 ushered in new shocks in the form of a strengthening dollar and political upheaval in neighbouring countries.

Following the massive losses experienced by the Reserve Bank during the East Asian crisis, which in part limited its ability to intervene subsequently, the South African Reserve Bank has indicated that it has no intention of intervening in the foreign exchange markets to defend the rand against speculative attacks, especially when they are of a transitory and reversible nature. But it can be questioned whether such a "hands-off" approach would be appropriate in the case of a more sustained speculative attack. Under such a scenario it may become necessary for the Bank to provide liquidity to the foreign exchange market, at least from time to time. While the Bank is clearly unable to resist sustained attacks on the currency, the absence of support for the market could mean that the exchange rate and interest rates are set to become more volatile in future.

We have argued that a sustained attack on the currency will inevitably raise both the level and the degree of volatility of both the exchange rate and short-term interest rates in the domestic economy. The attendant real costs are therefore unavoidable. Whether a policy of selective intervention – aimed at affecting the *relative* degree of change in the two critical prices – can alleviate these costs is open to debate. But it will at least change the extent to which external crises impact on different sectors and groups in the economy.

ENDNOTES

Based in part on a paper entitled *Speculative Attacks, Exchange Rates and Interest Rates – a View of Monetary and Exchange Rate Policy* presented at the biennial conference of the Economic Society of South Africa, University of Pretoria, 6-7 September, 1999.

Thanks are due to Rudolph Gouws of Rand Merchant Bank for discussion on this point.

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