


Evidence-based Employment Scenarios

When Might an Exchange Rate Depreciation Be Growth Inducing or Contractionary?

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Contents

Figures

Abstract

The South African government has the aim of accelerating the rate of economic growth and sustaining it at higher levels. It also aims to halve poverty and unemployment by 2014. There is a clear intention that part of this strategy should involve a more meaningful expansion of traded goods and services that can *lead* economic growth, and can also generate employment growth.

There is substantial evidence that most of the growth take-offs globally were accompanied by either a real devaluation or an undervalued exchange rate. However, most countries do not achieve high and sustained economic growth – it may be that currency undervaluation has been an important part of the growth package, but it is not sufficient to guarantee success. Instead, a currency depreciation or devaluation can also backfire, causing economic contraction.

This paper has the sole aim of stimulating deeper public policy debate on the exchange rate as part of South Africa's growth and employment objective. In particular it considers competing views on the possible growth-inducing effects of a deliberate depreciation. It first reviews arguments for the growth-inducing impact of a currency devaluation. It then considers circumstances in which a currency depreciation might be contractionary. By doing this we hope to add balance to the currency debate in South Africa.

It is essential that any debate on exchange rate targeting be contextualised within the design of the broader policy package and economic context. For example, the East Asian countries that managed to achieve their impressive growth rates through currency undervaluation, also had convincing micro-economic policies that promoted export oriented growth. In some cases, there were also explicit policies to keep the price of capital-goods and 'wage-goods' (such as food) low as a counter to the negative impact on incomes that arise from a currency depreciation. In the absence of these instruments, policy-makers will hesitate to target the exchange rate in this way for fear of macroeconomic instability, weakened balance of payments and worsening unemployment.

1. Introduction

In a recent paper by Adams et al. (2004) entitled "How the Dragon Captured the World Export Markets: Outsourcing and Foreign Investment Lead the Way", the authors argue that the reason why China has become highly successful in capturing world export markets hinges on its increased competitiveness, which depends on, among other factors, exchange rate undervaluation, low wage rates and excess labour resources. Despite the plethora of studies on the subject, little is conclusively known about what *drives* growth and employment globally. There is, however, evidence that most of the growth take-offs were accompanied by either a real devaluation or an undervalued exchange rate[1]. However, most countries do not achieve high and sustained economic growth – it may be that currency undervaluation has been an important part of the growth package, but it is not sufficient to guarantee success. Instead, a currency depreciation or devaluation can also backfire, causing economic contraction[2].

This paper has the sole aim of stimulating deeper public policy debate on the exchange rate as part of South Africa's growth and employment objective. In particular it considers competing views on the possible growth-inducing effects of a deliberate depreciation.

The currency debate can be complicated by the lack of knowledge of what the equilibrium real exchange rate is. What should the value of the rand be? Some argue that the Rand is overvalued, as evidenced by a balance of trade deficit. Alternatively, even if it cannot be proven to be overvalued, traded sectors could be made more competitive as a result of a depreciation. But, the net impact on the economy will depend on how the non-traded sectors respond to a depreciation. The latter introduces the possibility of a contractionary depreciation.

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[1] The HSRC has commissioned Prof. Albert Berry to prepare 10 case studies of economies that sustained high economic growth rates to explore common policy elements and the link between growth, employment and income distribution. Berry's study covers the following countries: South Korea, Singapore, Ireland, Chile, Brazil, China, India, Malaysia, Indonesia and Argentina. Where possible, evidence on Mexico will also be reviewed. Some preliminary findings are found in Berry (2006). The case studies will be released in 2007.

[2] The reader should at the outset distinguish between devaluations and depreciations. Devaluations occur when an exchange rate is fixed or pegged, whilst depreciations are effected in the context of a floating exchange rate or a managed float. Most papers have studied the issue of expansionary and contractionary devaluations for economies under a fixed (or pegged) exchange rate system. It should, however, be noted that the impact of a depreciation and devaluation will broadly be the same. As such, many of the results of these models can be extended to a flexible exchange rate system (Kiguel and Dauhaje, 1988). Given the system of fixed and pegged exchange rates in the Asian context, devaluations were the norm, whereas in South Africa's case we are concerned with a depreciation. However, achieving an undervalued currency in the context of a floating exchange rate is more complicated.

This paper focuses on two issues: circumstances under which exchange rate depreciation might be expansionary and factors that might lead to a contractionary depreciation. The first of these issues will be framed in the context of the high-growth East Asian countries that appear to have been successful in keeping their exchange rates undervalued. The second issue will be addressed by highlighting channels through which currency depreciations might be contractionary.

2. The rationale for depreciating a currency as part of a growth strategy

The literature in support of an expansionary depreciation has its roots in Keynesian aggregate demand theory. The arguments behind stimulating aggregate demand through currency depreciation were later adopted by the Bretton Woods institutions as a policy to stimulate growth in developing countries. According to Keynesian open-economy macroeconomics, the case for depreciation is relatively straightforward: a country depreciates its currency to enhance the cost competitiveness of its exports. The argument is that a currency depreciation will boost domestic real income, output and net exports. The balance of payments is expected to improve through the process of expenditure switching. This would be achieved through a reduction of imports as demand is directed toward domestically produced goods and through the increase in exports. Increased exports, through the multiplier effect, are expected to increase aggregate demand, and ultimately domestic production and employment. Given that a depreciation tends to be inflationary, it is argued that the increase in the overall price level leads to a lowering of the real wage, which will lead to more hiring and increased production, assuming that there is unemployment in the economy.

The policy prescription that encourages countries to devalue their currencies in order to stimulate aggregate demand remains enshrined in the orthodox tradition of stabilisation policies since the 1960s. In the 80s and 90s, the policy of devaluation in stabilisation programmes gained more impetus against the backdrop of the first-tier South East Asian countries, whose export-oriented strategies were supported by maintaining competitive exchange rates through frequent devaluations (Berry, 2006).

It is often argued that these exchange rate practices were meant to create a system of undervalued currencies in the same way that China has done for the past decade (Funke and Rahn, 2005; Coudert and Couharde, 2005). Undervaluation to make these countries' exports more competitive led to export expansion, which contributed to growth. It is this export-growth association that has led some to conclude that it is necessary to depreciate a country's currency to give exports a boost.

There is a vast literature on growth which has identified a number of variables as important determinants. One of the often cited key variables in the sustained growth of the successful East Asian countries is their common practice of maintaining undervalued currencies to enhance export competitiveness. In recent times, the first-tier high-growth South East Asian countries have adopted the practice of pegging their currency to the dollar, creating the so-called 'East Asian dollar standard (see

Mckinnon, 1999; Calvo and Reinhart, 2000). However, it is important to note that their exchange rate practices were implemented in the context of a policy package that contained other complementary elements to stimulate investment, output and exports (Berry, 2006). The specific combination of these other policies varied from country to country, and the causality associated with these micro- and macroeconomic interventions is not precisely understood.

Other elements of the policy package included export support policies, research and development, investment to identify and launch new export items, and credit subsidies. Berry's case studies agree with one of Hausmann's (2005) that finds that growth accelerations tend to be correlated with increases in investment and trade, and more importantly, with real exchange rate depreciations.

Berry argues that two mechanisms have the greatest chance of quickly propelling economic growth to a significantly higher level. The first is a marked increase in resource utilisation, possible when there is considerable underutilisation initially. For example, this can take place when there are improvements in the efficiency of markets, the take-up of low factory capacity utilisation or higher employment in a context of a large labour surplus. The second involves a sharp increase in the investment rate.

One of the important arguments by Berry is that the management of aggregate demand can be used to bring underutilised resources into productive employment through general increases in aggregate demand and to raise investment directly through monetary/credit policy. He argues that since aggregate demand and relative prices between tradables and non-tradables are influenced by the real exchange rate, it is thus helpful to consider aggregate demand management and the exchange rate as instruments to influence both the degree of resource utilisation and the level of investment. The virtuous growth-investment circle can be initiated simply by a burst of government spending on consumption or by private consumption spending through credit creation.

However, these paths are unlikely to lead to sustained growth on their own steam. Since the necessary condition for accelerated growth may be a sharp increase in demand, where it is achieved without soon being followed by an increase in savings to finance further investment, Berry finds that it tends to generate macroeconomic imbalances that restrict the growth process. He therefore highlights the policy instruments that can help to achieve the initial rise in private investment, such as investment tax credits, other subsidies to business, protection of certain sectors and various forms of technical assistance to potential investors. However, one of the cases in which these policies might fail to achieve the task of quickly changing the general set of expectations about the profitability of investment is the context in which business people fail to see enough promising growth. It is for these reasons that he argues that, "in such a case, an undervalued exchange rate (undervalued in the sense that it will lead to a build-up of foreign exchange) may have the capacity to break the logjam by raising the demand for all tradables produced in the country, across the board. This gives an immediate boost to demand for tradables (and hence a boost to overall aggregate demand) which should raise the level of resource utilisation…" (Berry, 2006).

The advantage of this policy is that the country has the ability to vary the currency until the desired effect is achieved. It tends to have a more general impact on the economy since its effect on demand is across the board for tradables, unlike any other set of instruments. Because it is less directed, it is therefore in line with the idea that market forces should be the main determinant of the direction of investment. Lastly, it may be easier to stimulate the savings needed to match increased investment when this is the mechanism at work than when incentives to business are raised in other ways. Berry (2006) argues that, "although undervaluation by large countries meets with international disapproval after its effects on the country's balance of trade are clearly visible, by then its growth-accelerating impact will no longer be as important and the exchange rate can be gradually shifted back towards equilibrium. By that time the activities which expanded under the impulse of that undervaluation will have, for the most part, established themselves as competitive at less favourable exchange rates, assuming as is reasonable, that much of the investment will be followed by learning-by-doing, which raises the productivity in the industries in question".

As noted above, it is important to assess whether the rapid growth of exports was due to other supportive policies such as protection of infant industries before they entered world markets or market access arrangements. Maintenance of an adequately competitive exchange rate, together with some combination of these policies, was essential to a growth acceleration based largely on exports. This conclusion is consistent with Berry's finding that Singapore and Ireland were the only countries in the 10 case studies[3] undertaken that achieved success in export markets without relying on currency devaluations.

3. Nominal versus real exchange rate depreciations

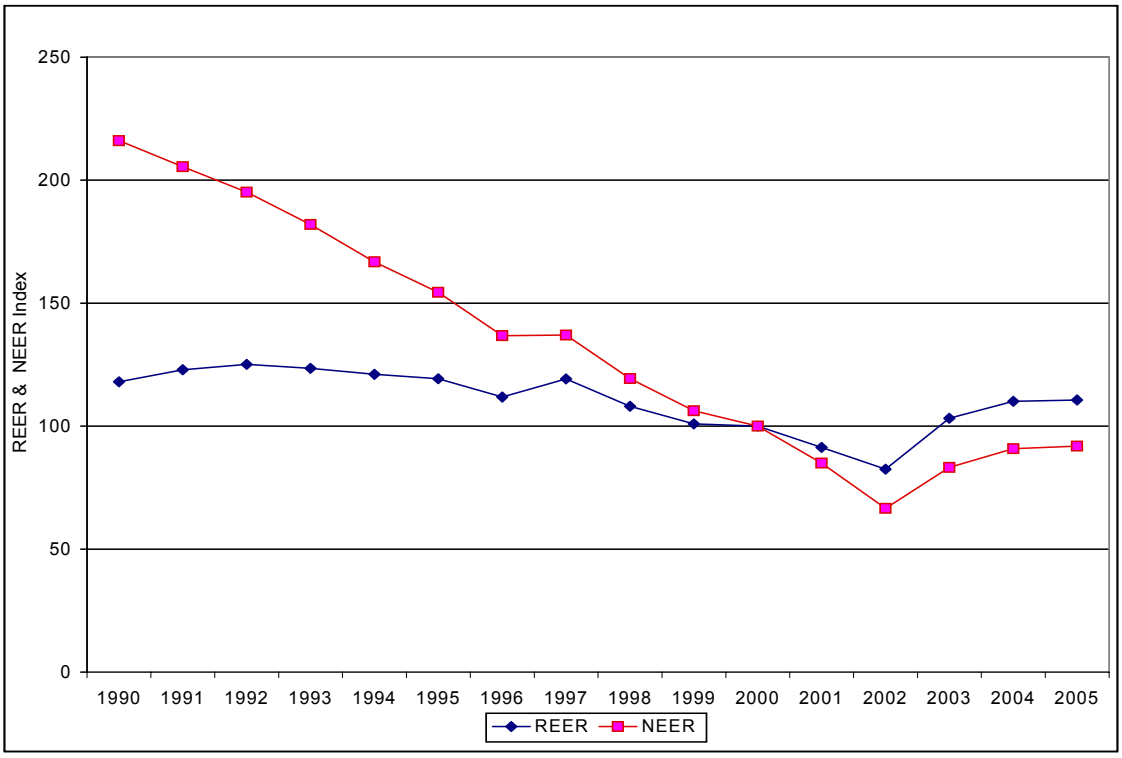
A country's international competitiveness is expected to improve with a depreciation of the ***real effective exchange rate*** (or the real exchange rate). Depreciating the nominal exchange rate will amount to nothing if the change is offset by either domestic inflation or a proportionate opposite change in the price levels of a country's main trading partners relative to the domestic economy. Since it is the real depreciation that has the potential to deliver the desired outcomes to the economy, the possible depreciation of the nominal exchange rate should be examined to determine whether the nominal change leads to real depreciation.

The nominal and real exchange rate of the Rand in relation to a trade-weighted basket of currencies is presented in Figure 1. The Rand has depreciated substantially in nominal terms since at least the mid-1980s. However, the real value of the Rand remained the same through most of the 1990s. Between 1997 and 2005, the real

[3] Forthcoming HSRC case studies of high-growth countries and their employment and income distribution experiences.

exchange rate fell by only 10%, albeit via quite a circuitous route. Therefore, the nominal depreciations have mostly contributed to *maintaining* price competitiveness.

Figure 1 - Nominal vs. real effective exchange rate of the Rand[4]



Source: SARB, 2006

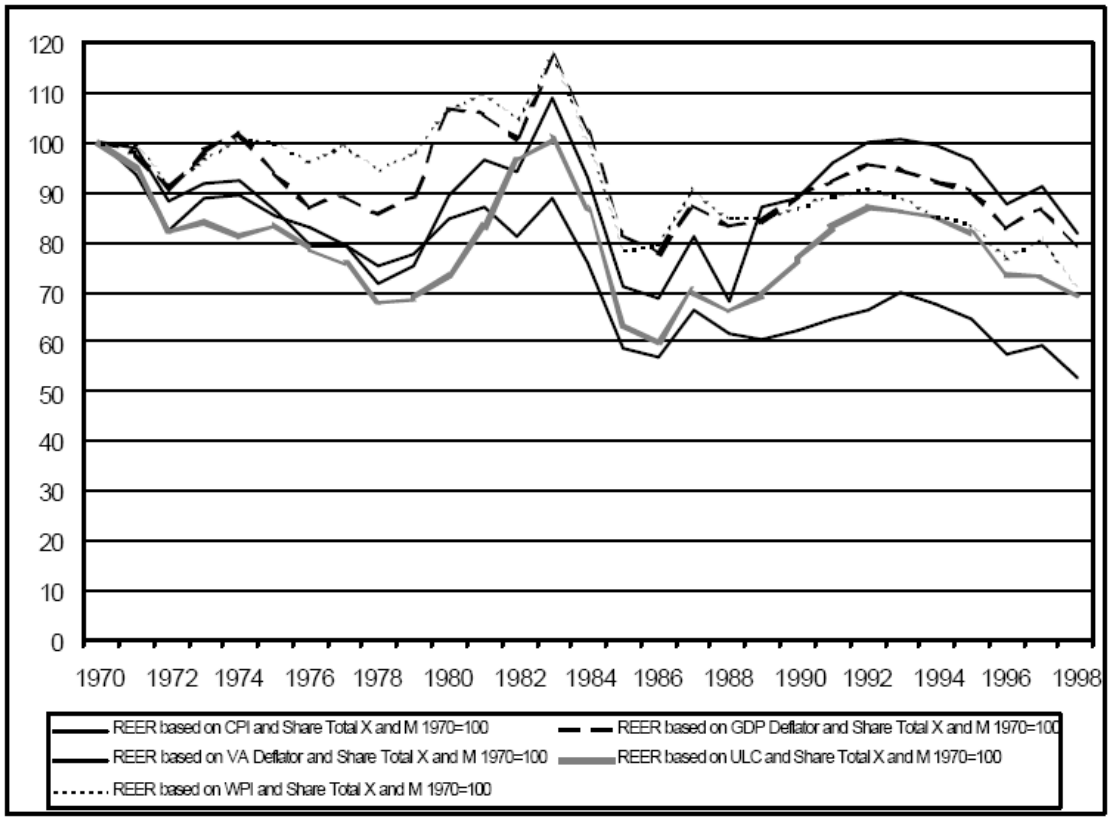
Figure 1 shows trends in the REER over a longer period of time (1970 – 1998), using different measures. This shows how the selection of the appropriate measure of price indices is important in calculating the REER[5]. The REER calculated by the SARB uses the wholesale price index. It is found that there is considerable divergence among the REERs calculated using various price indexes. The CPI-based REER series shows a declining long-term trend for the real exchange rate over the 1970 - 1998 period which is less apparent from the REERs based on the other price measures (i.e. the wholesale price index, the GDP deflator, the manufacturing value-added deflator, etc).

[4] The weighted average exchange rate of the rand is based on trade in and consumption of manufactured goods between South Africa and its most important trading partners. The weighted average exchange rate of the rand, published from 29 July 2003, is calculated against 13 currencies and consistently excludes Zimbabwe. The weights of the four major currencies are in brackets: Euro (36.38), US Dollar (15.47), British Pound (15.37) and Japanese Yen (10.43). Index: 2000 = 100.

[5] Golub and Ceglowski (2002)

Figure 2, taken from Golub and Ceglowski (2002), compares alternative REER measures. During the period 1970 - 1998, they identified appreciation of the real exchange rate in the early 1980s and around 1992. Figure 2 shows a larger real depreciation than seen in Figure 1.

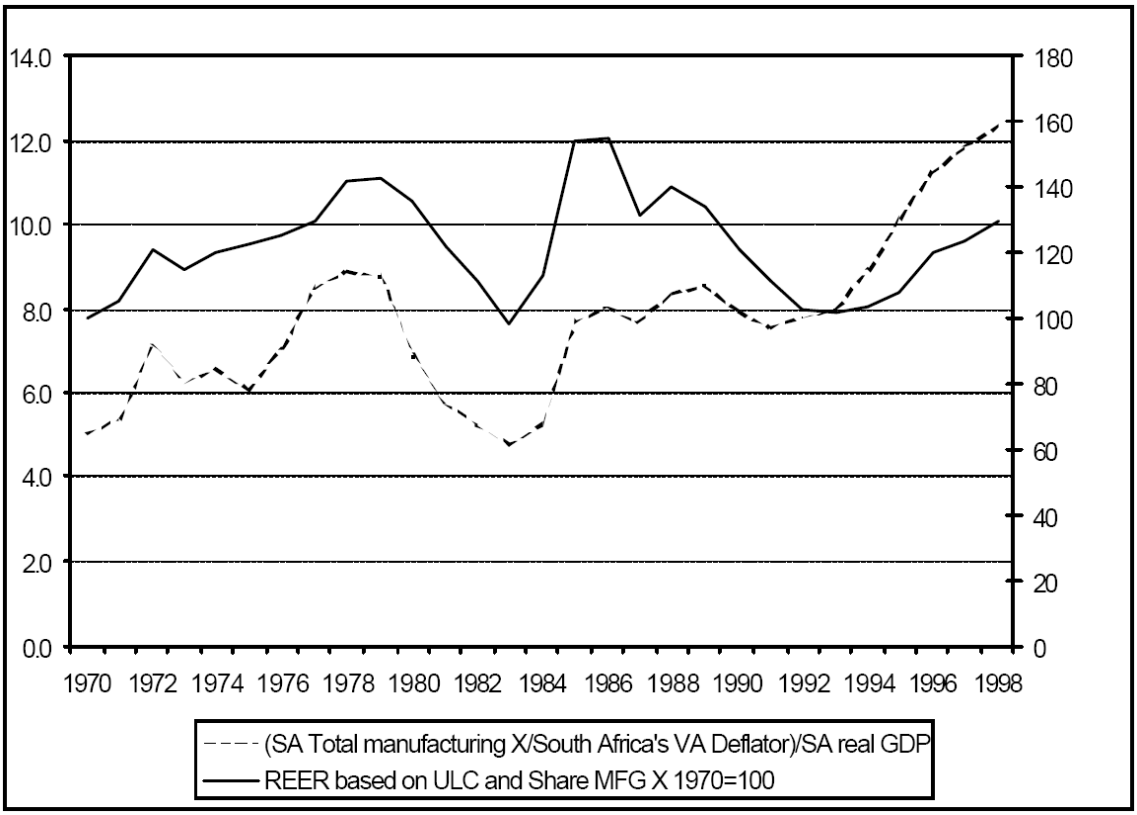
Figure 2 – Comparison of alternative REER measures (all series weighted by total exports plus imports)



Source: Golub and Ceglowski (2002)

There is a close correlation between the REER and the share of exports in the country's GDP (see Figure 3 below). In other words, real value of the rand definitely does greatly impact on the extent to which SA producers export. In the 1970s and 1980s, this mainly involved toggling between producing for domestic or foreign markets depending on where the price was better. However, in the 1990s, there is a more than equal response to a real depreciation. Golub and Ceglowski (2002) mention is that manufactured exports have grown more rapidly in the 1990s than competitiveness alone would justify. This is associated with the ending of sanctions with the country's new political dispensation and the implementation of outward-oriented economic policies.

Figure 3 – Real manufactured exports (as % of real GDP) against inverted REER-ULC



Source: Golub and Ceglowski (2002)

4. When might a currency depreciation be contractionary?

There are a number of channels through which a currency depreciation could cause economic contraction, and we begin by outlining what these are. We then review some of the evidence surrounding these arguments.

3.1 Channels

The case for depreciation assumes that the country in question will succeed in undervaluing its currency and reap the benefits in the form of increased output and employment. However, there are a number of channels through which depreciations can create a contractionary impact on a country's output, which means it may not see the desired outcomes of the currency depreciation. The following channels for a contractionary outcome are taken from Bahmani-Oskooee and Miteza (2003)[6]. Some of them have been expanded to explain their relevance to South Africa. The various causes of the undesirable outcome are grouped under the aggregate demand and aggregate supply channels.

On the aggregate demand side, these include:

1. *Redistribution of income towards economic entities with a high marginal propensity to save.*

Devaluation typically boosts profits in export- and import-competing industries, as it leads to higher relative prices for traded goods. National spending is, however, likely to shrink since the marginal propensity to save from profits exceeds that from wages. In South Africa, ownership of minerals is often concentrated, so that the benefits of the export income are not widely spread, and mining results in a particularly unequal distribution of income. This is further aggravated by the 'enclave' production typical of mining that lacks the forward and backward linkages that can drive broad-based development (Hirschman , 1977; Simkins, 1998; Deaton,1999)

2. *Reduction in real wealth or real balances.*

A higher price level ensuing from the devaluation reduces real cash balances and real wealth. Thus, a fall in expenditure will be needed in order to restore real balances, thereby lowering consumption demand and providing an offsetting contractionary effect on output. The lowering of consumption also implies that the increase in import prices of final consumer goods will diffuse to the consumer price index.

[6] See Bahmani-Oskooee and Miteza, (2003) for a detailed discussion and references to the empirical studies that investigated these channels.

However, this will depend on the exchange rate pass-through in a country. The lower the pass-through, the smaller the impact on output. Bhundia (2002) analyses the degree to which fluctuations in the nominal exchange rate pass through to consumer prices in South Africa. He finds that average pass-through is low; however, evidence from a structural VAR autoregression suggests it is much higher for nominal versus real shocks.

3. *New investment constrained by rising prices of imported machinery.*

New investment may be constrained by a depreciating currency, since capital and equipment which are often sourced overseas will be made more expensive. This channel seems to be applicable to most developing countries. In the South African case, the concern arises when one looks at the huge infrastructural expenditure that government intends to carry out over the next few years. On the other hand, in combination with supportive policies, domestic capital and equipment industries might be stimulated.

4. *The time lag in inducing non-traditional tradables may be too long.*

There are other microeconomic reasons that could explain a slower than desired output and investment response, particularly in developing countries. For example, the structuralists (Taylor, 1983) argued that the traditional exports of developing countries frequently lie in sectors that offer unattractive demand prospects and limited inter-sectoral linkages, such as agriculture and minerals. It means that there may be limited potential for expansion in existing industries. Generating know-how that would stimulate new non-traditional exports takes time, and might not be forthcoming soon after a devaluation, except insofar as it is generated through foreign direct investment. In South Africa there are many 'non-traditional' export industries that might benefit from a depreciated Rand and other support measures. These are newer industries that have started up but have initially not reached a substantial scale.

5. *Real income declines because the trade balance is initially in deficit.*

When the trade balance is in deficit, real income at home tends to fall as imported goods become more expensive. The depreciation which raises the cost of imports in the domestic currency will worsen the trade balance.

6. *Increased debt and debt service payments in local currency.*

For a country that has accumulated external loans denominated in foreign currency, this heavier burden drains off resources that could otherwise be used in spending and production, resulting in reduced aggregate output. If residents and businesses have debts in foreign currency, the decision to devalue the local currency will influence their debt servicing capacity. Currently, this is not a major risk to the South African economy.

On the aggregate supply side, the following represent the main channels through which a depreciation can be contractionary:

1. *Increase in the price of imported production inputs.*

Increased production costs will clearly reduce supply. This will be more pronounced in firms that import a significant proportion of their inputs.

2. *Wage indexation based on foreign and domestic price levels.*

Increased prices for tradables caused by devaluation may lead labour to demand higher wages, which could produce adverse supply effects. Though wage indexation does not apply to South Africa, the possibility of an inflationary impact of depreciation might lead labour to also demand higher wage.

3. *Working capital grows costlier as real balances decline.*

If devaluation increases the demand for money, interest rates will climb, making working capital more costly and discouraging production.

3.1 Arguments & evidence

The possibility of a contractionary devaluation dates back to the work of Hirschman (1949) which was later followed by Diaz Alejandro (1963), Cooper (1971), Krugman and Taylor (1978), Bilson (1978), Gylfason and Risager (1984), Edwards (1985) and Buffie (1986). It is against this body of work that Bilson (1978) argues that a devaluation might not have any long-run impact on output, employment or the balance of payment. However, he argues that few countries ever devalue for long-term reasons; rather, the devaluation is meant to move the country toward a new sustainable equilibrium. As such, a devaluation is an exercise in disequilibrium dynamics.

Bilson (1978) and Edwards (1985) both analyse the impact of a devaluation on the macroeconomy. Whereas Bilson's analysis is set in a dynamic framework which focuses on the time path of prices, output and the stock of international reserves, Edwards places greater emphasis on the effects of money surprises, fiscal factors, terms of trade changes and level of real output. Bilson finds that a devaluation will stimulate output and employment in the short run, depress output and employment in the intermediate run, and have no impact on them in the long run. Edwards, on the other hand, using data from 12 developing countries, finds that in the short run, a devaluation will generate a decline in aggregate output, while after one year it will have an expansionary effect on output. However, like Bilson, he also finds that devaluations will have no effect on output in the long run.

In a recent survey of the literature on whether devaluations were expansionary or contractionary, Bahmani-Oskooee and Miteza (2003) review existing research on the

impact of devaluation/depreciation[7] on domestic production. Fifteen major macro-simulation studies and 18 econometric studies were reviewed. In the macro-simulation studies, 11 out of the 15 found that a devaluation is either contractionary or potentially contractionary, for the reasons summarised in section 3.1. The main conclusion is that the impact is country-specific and depends on model specification, and that the results also depend on the estimation technique. However, many of these studies find that the impact of devaluation/depreciation are contractionary and are often followed by an offsetting expansion. It should also be noted that only a small portion of the literature suggests that devaluations are always expansionary. According to their review, the empirical literature to date has not been able to fend of attacks from sceptics of stabilisation policies, which consider the exchange rate a questionable instrument of economic policy, especially in developing countries. They conclude by saying, "indeed, in the absence of more solid evidence that refutes the contractionary devaluation hypothesis, policymakers will hesitate when faced with high unemployment and a weak balance of payments position".

Another reason why mineral dependency in developing countries can complicate an export-led growth strategy is that favourable commodity prices might lead to the overvaluation of the currency through an appreciation. It is argued that overvalued exchange rates contribute to unemployment and underutilisation of capital in capital-scarce economies, and penalise exporters (Bruton, 1978).

A policy to depreciate the currency can end up contradicting macro policies that seek to stabilise the macroeconomy through a reduction in inflation. The contradiction arises from the fact that currency depreciation as the instrument to achieve a real depreciation implies that government also loses control of the domestic inflation policy. This is because by depreciating a currency the ensuing inflationary impact implies that the exchange rate is now indexed to the domestic price level via the balance of payments and money supply. It then becomes difficult to fight inflation from the fiscal side, since the currency depreciation leads to inflation and high interest rates via channels outside the budgetary framework (Stambuli).

Arguments against the short-run contractionary nature of currency devaluation sometimes contend that since flows of goods respond with a time lag to changes in the exchange rate, the trade balance can deteriorate on impact but gradually improve with time. One of the reasons for this is the low price elasticity of demand for imports and exports in the immediate aftermath of an exchange rate change. This phenomenon is referred to as the J-Curve effect, and since it manifests over time, it adds a dynamic element to the true impact of a currency depreciation on the trade balance. However, this result might not always come about in reality. For example, countries such as Mexico have consistently had real depreciations which were coupled with output contractions, and real appreciations which were associated with output expansions. As such, these countries have become conventional examples of the contractionary depreciation problem. (Bahmani-Oskooee and Miteza (2003).

[7] Their review specifically examines studies that looked at both.

5. Conclusion

This paper looked at the arguments for an expansionary depreciation/devaluation of the exchange rate and the circumstances under which it might be contractionary. The rationale for an expansionary depreciation is usually motivated from an aggregate demand framework. It is hard to ignore the evidence that a very large proportion of high growth economies did devalue their currencies as part of strategy to boost traded sectors. It is argued that growth in developing countries has been stifled by overvalued exchange rates, which were acting as a constraint to the growth of the traded sector.

However, depreciating the currency does not guarantee higher growth. The arguments for a contractionary depreciation were first made by development economists as early as the late 1940s. Structuralists argued that by raising the cost of imported inputs, currency devaluation could be contractionary via the aggregate supply channel. Though the arguments for an expansionary depreciation are still being debated in the public arena, evidence of the possibility of a depreciation being contractionary highlights important channels through which the benefits from such a policy can fail to achieve the desired outcome.

It is essential that any debate on exchange rate targeting be contextualised within the design of the broader policy package and economic context. For example, the East Asian countries that managed to achieve their impressive growth rates through currency undervaluation, also had convincing micro-economic policies that promoted export oriented growth. In some cases, there were also explicit policies to keep the price of capital-goods and 'wage-goods' (such as food) low as a counter to the negative impact on incomes that arise from a currency depreciation. In the absence of these instruments, policy-makers will hesitate to target the exchange rate in this way for fear of macroeconomic instability, weakened balance of payments and worsening unemployment.

Inflation targeting is one of the most forceful elements of SA economic policy, and exchange rates targeting has been off-the-table. However, it is difficult to ignore this policy instrument in a discussion on promoting the kind of high and sustained growth needed in traded goods and services. There seem to be two choices: the first involves an analysis of whether it really would be impossible to influence a floating currency. Ngandu (2006) reports that while a number of high growth countries appeared to have floating currencies, the truth of the matter is that almost every economy that managed to accelerate growth did target their currency. If this were possible and desirable, the follow-on question would be whether the negative effects of some depreciation could be offset by a combination of policies to keep the price of capital goods and wage goods low, and to stimulate investment in tradables. The alternatives seem to involve very strong market access arrangements and extremely forceful investment incentives that may in themselves seem quite distortionary.

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