



# Working Paper



## Using Fiscal Policy to Target the Exchange Rate

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**Abstract.** This paper proposes an approach to macroeconomic policy which equips the authorities in small, open, financially-integrated economies (SOFIEs)<sup>2</sup> to target the exchange rate by influencing the volumes of trade in goods and services to achieve equilibrium at the target rate. This is achieved by the use of fiscal policy: the authorities may adjust the size of the fiscal deficit and how it is financed to contain the level of aggregate expenditure in the economy, and the demand for imports that flows from that expenditure. In the longer term, productivity-enhancing measures will secure growth in the supply of foreign exchange. The exchange rate anchor keeps domestic inflation in line with world price changes. Moreover, the anchor is a powerful indicator of economic policy success and a persuasive reason to adopt necessary adjustment. A country which is able to set an exchange rate target and achieve it consistently over time gains credibility for its overall economic strategy. In the open economy the impact of depreciating exchange rates on the purchasing power of incomes is considerable, and erodes the savings habit. Exchange rate volatility discourages investment and may cause financial instability.

**Keywords.** Macroeconomic policy, monetary policy, fiscal policy, exchange rate, open economy.

**JEL codes.** E17, E50, E61, F41, F43.

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<sup>2</sup> I owe this description to Mar Gudmundsson, Governor of the Central Bank of Iceland.

## **Small is Different: A Policy Framework for Small Open Financially Integrated Economies**

### **Introduction**

The motivation for this paper is the observed discomfort with the conventional approaches to stabilisation and growth policies that is manifest in a majority of small open economies. Open economies are faced with a choice of an independent monetary policy with a floating exchange rate and open financial markets or a fixed exchange rate with a financial market which is segregated from the international market by use of exchange controls. Conventional wisdom, informed by the widespread failure of exchange controls in the 1970s and 1980s, advocates choosing exchange rate flexibility. However, in open economies flexible exchange rates have proven excessively volatile, depressing investment and growth, and increasing risks of financial crisis. In recent years there is growing acknowledgement that predictable exchange rates with low volatility contribute to macroeconomic and financial stability in small open economies, and a recent IMF study proposes a way to approach exchange rate targetting to reduce volatility (Ostry, Ghosh and Chamon 2012). However, actual practice still does not vary appreciably from the standard approach to macroeconomic management, with a preference for flexible exchange rates and inflation targetting using monetary policy.

This paper proposes an approach to macroeconomic policy which equips the authorities in small, open, financially-integrated economies (SOFIEs) to target the exchange rate by influencing the volumes of trade in goods and services to achieve equilibrium at the target rate. The SOFIE is not only small and open, and therefore highly import dependent, with limited scope for import substitution. It is also highly integrated with international financial markets, which limits the role of controls on financial inflows and outflows to that of traffic policeman: officials can put speed bumps in the way of speculative outflows and inflows, but they cannot alter the direction or volume of net flows. The Mundell-Fleming option of a fixed exchange rate protected by capital controls is not on offer in the financially integrated economy, and the role of monetary policy is limited to buying time for other policies to take effect (Worrell, Moore and Beckles 2017).

The conventional view is that, in the absence of capital controls, the authorities cannot use interest rate policy to target an exchange rate through the financial account, and therefore the exchange rate will be determined by demand and supply on the current account. However, in the small open economy, the elasticity of current account responses to exchange rate changes is close to zero. On the supply side the small economy is an atomistic producer in a global market; it can supply everything it can produce at the ruling world price. To increase earnings, productive capacity must be increased, which is a strategy for the medium to long run. On the demand side, there are few domestic substitutes for the wide range of items in the import basket. Low demand and supply responsiveness to exchange rate changes means that the impact of shocks is magnified, leading to high exchange rate volatility (Blanchard, Dell'Ariccia, and Mauro 2010).

There are other reasons why small open economies find it necessary to target the exchange rate, linked to the nature of shocks to which the economy may be subject. A large exchange rate appreciation may deal a fatal blow to some export activity, so that export potential is permanently impaired even if the rate subsequently depreciates. In addition, there may be implications for financial stability from excessive volatility of exchange rates, because of the impact on the local currency balance sheets of companies with net foreign liabilities (in the case of exchange rate depreciation) or net foreign assets.

Because of these adverse effects of excessive exchange rate depreciation, the SOFIE needs to target the exchange rate, even though it lacks the ability to use monetary policy for that purpose. In this paper we propose the use of fiscal policy instead, to contain aggregate demand and imports in the short run, and to provide market incentives to expand tradable production in the long run. To reconcile the day-to-day foreign balances with the results of short-run fiscal adjustment and long-term fiscal policy effects, monetary policy is employed. The central bank maintains a store of foreign exchange reserves which it uses, in case of an adverse shock, to intervene to defend the exchange rate until such time as fiscal contractionary measures take effect. In case of an adverse domestic shock, the central bank increases the country risk premium over the foreign interest rate in order to attract additional inflows to provide temporary financing, until fiscal measures can take away the excess demand.

The Mundell-Fleming framework focusses on monetary policy and offers two possibilities: with capital controls in place, monetary policy may be used to target the exchange rate; in the absence of exchange controls, monetary policy targets domestic inflation. In the context of the SOFIE neither option is available: the extent of financial integration makes it impossible to target the exchange rate using monetary policy - the authorities' intentions will always be frustrated by capital flight. And the impact of domestic monetary policy on inflation is minor compared to the impact of a depreciation of the exchange rate.

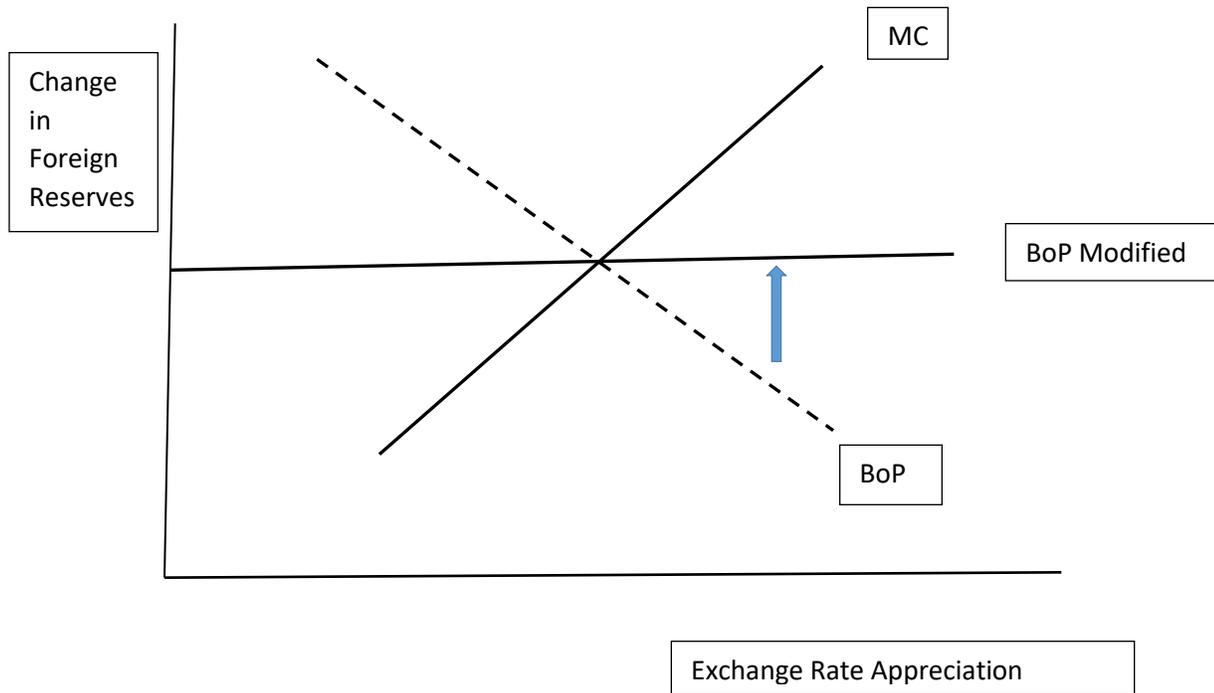
How then may the SOFIE achieve the objective of an exchange rate with low or no volatility? That is clearly desirable from the points of view of stimulating growth and containing inflation. The answer put forward in this paper lies with fiscal policy. The authorities may target the exchange rate by adjusting the size of the fiscal deficit and how it is financed, and the choice of an exchange rate target appropriate to the economic circumstances of each SOFIE ensures that domestic inflation does not exceed the world inflation rate, which is the best that may be achieved in the small open economy.

Section 2 of this paper describes an economic model which incorporates the structural features of the SOFIE, and shows how fiscal policy may be used to target the exchange rate. Our point of departure is a version of the monetary model of adjustment which underpins the methodology used by the IMF in its surveillance and policy operations.

### **The model**

Our starting point is the familiar IMF financial programming model, whose analytical underpinnings are described in Agenor (2004), Chapter 9, Page 372, from which Figure 1 is borrowed. The Figure shows the tradeoff between foreign reserve accumulation and appreciation of the real exchange rate that secures a balance of demand and supply of foreign exchange (*BoP*); and the tradeoff that secures a balance of money supply and credit demand (*MC*). In Agenor's chart, which represents the standard view, the *BoP* tradeoff slopes downwards to the right: as domestic goods become more expensive relative to foreign goods, consumers switch to imports away from domestic substitutes and producers find the local market more lucrative than exporting. The demand for foreign exchange rises, the supply falls, and the appreciation will tend to drive down foreign reserves. The *MC* balance slopes upward to the right because a loss of foreign reserves implies an equivalent drain from the domestic money supply, and in the absence of idle cash, a credit crunch that aggravates domestic deflation.

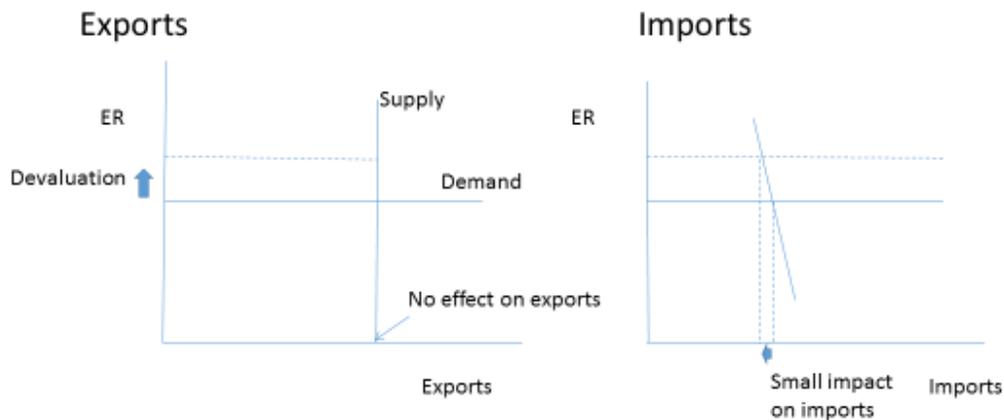
Figure 1. The IMF Extended Financial Programming Model



The horizontal line *BoP modified* is closer to the reality for SOFIEs. Because of small size the SOFIE produces very little of what it consumes, so the elasticity of substitution between imports and import substitutes is close to zero. And because the local market is so small, it offers only a trivial addition to the potential demand for the export activities in which the SOFIE's production is substantial enough to be internationally competitive. Therefore an appreciation or depreciation of the real exchange rate has no appreciable effect on the demand or supply of foreign exchange.

The BoP effects as they might appear in the typical SOFIE are more accurately represented by Figure 2. Exports are unaffected by devaluation, in the current period. Any potential incentive that devaluation may provide, through increased local currency returns to exporters, will yield results in future years. On the import side, devaluation produces disproportionately small contraction in imports because there are no domestic substitutes available, and domestic consumers simply cut back on purchases as devaluation shrinks their international purchasing power.

**Figure 2. Export and Import Elasticities**



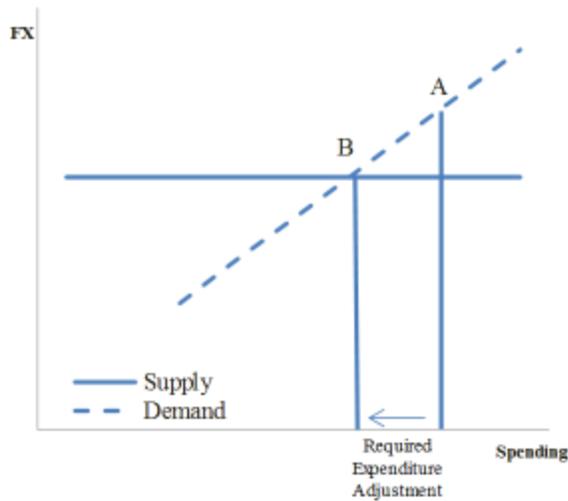
The shape of the *MC* curve is also a matter for debate, and indeed there is a question as to whether there is a stable relationship between money and credit movements in emerging market and developing economies where financial markets are very imperfect. In such circumstances large pools of idle cash are commonplace, and the supply and demand for credit do not respond to interest rate changes.

It is clear from the modified *BoP* schedule of Figure 1 that the SOFIE cannot attain external balance through changes in the real exchange rate. What is more, with the indeterminacy of the *MC* schedule, there is no instrument available to the monetary authority to influence the exchange rate one way or another. Instead, external imbalances must be addressed through measures that affect the quantity of foreign exchange demanded and supplied, rather than its price. The policy framework may be represented as in Figure 3. In the short run the supply of foreign exchange is fixed, based on the capacity to export and the private sector's ability to fully realise that capacity. Private investment, infrastructure development, productivity gains, government incentives and other capacity enhancing measures will pay dividends, but only in the longer run.

The demand for foreign exchange is derived from aggregate expenditure in the economy; as people spend more, additional imports are needed and foreign exchange demand rises. It follows that if aggregate expenditure is expected to be at Point *A* in Figure 3, the policy that is required to balance the external accounts is a reduction of aggregate expenditure to Point *B*. The required adjustment may always be secured through appropriate fiscal contraction.

One issue that always surfaces at this point is the impact of fiscal contraction on output. In well run administrations, authorities may take the opportunity to secure productivity gains in the public service, providing the same services at lower cost. Where this is not possible there will be a decline in output temporarily. This is unavoidable because of the inadequacy of supply of foreign exchange, and it can be corrected in future periods, when additional supplies of foreign exchange become available as a result of capacity-enhancing strategies.

**Figure 3. Protecting the value of the BDS\$**



A second debate surrounds the question whether the burden of adjustment should be shared between government and the private sector. Because independent monetary policy is not available to the SOFIE, the sharing of the burden comes down to the design of the fiscal adjustment strategy. Reducing the fiscal deficit through revenue enhancement puts a greater share of the burden on the private sector, as does a reduction in social benefits.

Given these structural constraints of the SOFIE, what we require for the purposes of growth and adjustment are tools which empower the policy maker to respond to an adverse shock by fiscal policy contraction to balance the external account in the short run, accompanied by a medium term fiscal strategy which contains fiscal expansion to a pace which maintains external balance. Monetary policy is used to support the fiscal adjustment, using a combination of sterilised exchange rate intervention to achieve the target exchange rate, and domestic market intervention to keep domestic interest rates aligned to the long term trend of the international interest rate.

The tools needed include a real time monitor of the country's external balance, and a model which measures the impact of fiscal policy on the balance of external payments. Any conventional macroeconomic model may be adapted to measure the impact of money creation on the balance of external payments and the level of foreign reserves. An example is the model from the popular text by Agenor and Montiel (2008); it appears on pages 303-305 of their book. It is an IS-LM model of a small economy that is integrated into international financial markets, and is subject to domestic and international shocks. The model contains equations for aggregate demand, domestic supply, wage determination, uncovered interest parity and money market equilibrium. In the model the supply of money is subject to random shocks, whose impact depends on the nature of the exchange regime:

$$m = -\delta s + u^{ms} \quad (1)$$

where  $m$  is the supply of money,  $s$  is the exchange rate,  $\delta$  is a parameter which defines the exchange regime and  $u^{ms}$  is a white noise shock. To modify the model for our purposes we replace the white noise shock with the impact of money created to fund the government deficit:

$$m = -\delta s + \eta b \quad (2)$$

where  $b$  is the (log of the real) increase in the net domestic assets (NDA) of the central bank. We assume that increase is entirely due to financing of the government deficit by newly created money; that is almost always the case in practice. Our interest is in increases in NDA that create pressure on the foreign exchange market. We therefore specify  $\Delta NDA$  as positive values only:

$$b = \log(\Delta NDA/p) \text{ for } \Delta NDA/p > 0, b = 0 \text{ otherwise} \quad (3)$$

The money market equilibrium equation in the Agenor-Montiel model provides a relationship between money supply and output:

$$i = -\lambda m + \lambda p + \gamma y \quad (4)$$

where  $i$  is the nominal interest rate,  $p$  is the price of output and  $y$  is real domestic output.

All that remains for our purposes is to add an import equation:

$$n = \mu y + \psi(s + p^* - p) \quad (5)$$

where  $n$  is the amount of real imports and  $p^*$  is the foreign price of foreign goods.

This system may be used to input values of  $\Delta NDA$  and derive estimates of the impact on imports. Fiscal expansion does not increase the supply of foreign exchange, and therefore the additional imports it induces must be financed through a drawdown of foreign reserves.

## Summary

This paper presents an alternative to the conventional set-up for economic policy which gives SOFIEs the tools they need for effective stabilisation of their economies. The approach outlined above has the advantage that the exchange rate anchor is a powerful indicator of economic policy success and a persuasive reason to adopt necessary adjustment. A country which is able to set an exchange rate target and achieve it consistently over time gains credibility for its overall economic strategy. In the open economy the impact of depreciating exchange rates on the purchasing power of incomes is considerable, and erodes the savings habit. Exchange rate volatility discourages investment, and may cause financial instability.

Our approach is founded on a strategy to protect foreign exchange reserves and maintain a war chest large enough to defend the target exchange rate. Foreign reserves is a highly visible indicator, and one which is available daily. That permits the policy maker to detect external imbalances at an early stage.

Fiscal dominance is a fact of life in SOFIEs; my approach acknowledges this and works within the limits it imposes in terms of the tools that will produce results under these circumstances. In practise this means a subservient role for monetary policy, in contrast to the conventional inflation-fighting objective of

conventional monetary policy. Targeting inflation by domestic policy when inflation is mostly imported simply undermines the credibility of the central bank.

The framework recommended in this paper is simple: the key parameters in the short term are the fiscal multiplier and the propensity to import. Armed with these two parameters policy makers may arrive at a rough estimate of the magnitude of adjustment needed to restore external balance in the face of an external shock.

The approach is compatible with any type of exchange targetting regime, whether it is a peg or managed float, or merely a commitment to prevent excessive volatility of exchange rate fluctuations. However, in practice an exchange rate peg is the most credible regime for SOFIEs. This approach reflects reality: SOFIEs must get fiscal policy right. If they do, everything else will fall into place; if they don't, no combination of other policies will serve to stabilise the economy.

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