

Effects on Trade of Monetary, Fiscal, and Exchange Rate Policy

Synthesis of EAGER Research

I. Introduction

At the very heart of policy reform in most African countries lies the nexus of monetary, fiscal, and exchange rate policies. Typically a country undertakes reform after having experienced a sustained period of fiscal deficits, monetary expansion, inflation, increased indebtedness, current account deficits, an overvalued exchange rate, import restrictions, distorted price incentives, and lack of growth and investment. Reform usually involves fiscal tightening, monetary restraint, devaluation of the local currency, possible freeing of the exchange rate, and liberalization of the trade regime. In addition, there may be some combination of tax reform, rationalization of public expenditures, liberalization of domestic markets, and privatization of state owned enterprises.

One of the most important initial effects of these reforms is to increase imports. Exports may also expand, but typically there is something of a lag, with current account deficits being financed by foreign aid, often within a program of structural adjustment. The hope is that exports, especially nontraditional exports, will eventually expand, inflation will subside, confidence will be strengthened, investment will increase, and the economy will begin to grow at a more rapid pace.

All too often, these hopes have been disappointed within sub-Saharan Africa. There may be many reasons. Export expansion may be lacking because of inadequate physical infrastructure, human capital, and supportive institutions. Political pressures may encourage increased public expenditures before tax reform has taken hold and the tax base has expanded. The institutional structures necessary for effective monetary and exchange rate policy may be inadequate, especially in the face of internal fiscal pressures or external shocks to the economy. As a result, the old cycle of fiscal imbalance, inflationary pressure, increasing overvaluation, growing trade deficits, and declining investor confidence may ensue once more.

Research undertaken by the Trade Regimes and Growth component of the EAGER project has examined these issues and reached a number of important conclusions regarding why these problems have occurred and what can be done about them. Much of this research on Monetary, Fiscal, and Exchange Rate Policy has been undertaken in close coordination with the research on Restarting and Sustaining Growth and Development in Africa, which has attempted to understand what has gone wrong in many countries and how growth and development can be resumed or accelerated.

The next section establishes the historical setting, describes some of the problems associated with monetary and fiscal imbalance and with restrictive trade and exchange rate regimes prior to reform, and outlines the steps taken by many African countries

towards structural adjustment. This is followed by a discussion of the objectives and constraints of exchange rate policy, as well as the persistent problems of overvaluation and instability in both fixed and flexible exchange rate regimes. The concept of a real exchange rate is explored along with the monetary and real variables that influence this rate in relation to its sustainable equilibrium value. The problem of real exchange rate disequilibrium is examined in relation to both monetary and real variables under alternative exchange rate regimes. The phenomenon of currency substitution, or dollarization, is also discussed.

The empirical research on this topic under EAGER is discussed at two levels. The first is a cross-country analysis that looks at the influence of the exchange rate regime on economic growth. The second is a series of country studies, which look at monetary and exchange rate policy in Kenya, Ghana, and Uganda. One important issue here is the extent to which the real exchange rate can be influenced by monetary and exchange rate policy in both the short and the long run. Another is whether the real exchange rate has an important effect on trade, and especially exports. A third is what is the appropriate type of model to use, and, in particular, whether the International Monetary Fund's financial programming model is an adequate guide for policy. A fourth issue is whether foreign assistance and other forms of temporary capital inflows tend to lead to overvaluation or instability in the real exchange rate.

The final section of the paper deals with the policy implications of monetary, fiscal, and exchange rate policy in Africa. Some of these relate to the magnitude of the problems associated with trying to maintain the real exchange rate at its equilibrium level in the face of persistent fiscal deficits. A second set of problems occurs because of the weakness of monetary and exchange rate policy in relation to internal and external shocks. Some of these shocks are induced in sub-Saharan Africa by excessive dependence on external assistance and other relatively unstable capital inflows; others ensue from heavy dependence on a limited range of primary product exports; still others result from the importance of agriculture in an area subject to the vagaries of weather. An important question is the extent to which stabilization of the foreign exchange market is likely to spill over into destabilization of local capital markets and increased external and internal indebtedness.

II. Historical Setting

The overall framework for monetary, fiscal, and exchange rate policy is set out in Duesenberry, Gray, and McPherson (2001). The basic objective of the exchange rate regime is "to establish an exchange rate consistent with a sustainable current account balance and with the promotion of exports needed for continued growth" (Duesenberry, Gray, and McPherson, 2001, p.1). Key to this objective is a range of actions in the areas of monetary, fiscal, and exchange rate policy, as well as management of the public debt.

Historically, sub-Saharan African (SSA) countries have covered a wide range of exchange rate regimes. These have included exchange rates fixed over the longer term (CFA franc countries), exchange rates fixed over the shorter term but adjusted relatively

frequently (many non-CFA countries prior to structural adjustment), and flexible exchange rates (many non-CFA countries after structural adjustment). Countries within the CFA zone have tended to have relatively low rates of inflation, partly because the value of the CFA franc was backed by the French Treasury, which imposed severe constraints on the ability of governments to finance fiscal deficits by borrowing from the banking system. Outside the CFA zone, on the other hand, fiscal deficits were frequently financed by bank credit, which resulted in expansion of the money supply and inflation. In the face of a reluctance to allow currencies to depreciate sufficiently to avoid overvaluation, this led to persistent current account deficits, mounting public sector debt, insolvent financial institutions, conversion of export proceeds at artificially low official exchange rates, and imposition of severe quantitative restrictions on imports and access to foreign exchange. The result was price distortions and rent seeking, which stifled investment and crippled economic growth.

Relatively favorable terms of trade for most primary producers during the 1960s and early 1970s allowed the non-CFA countries to pursue these policies despite their adverse effects on economic growth. By the late 1970s, however, the situation had changed. The cost of petroleum imports continued to mount, prices of primary product exports on world markets were down, and countries were no longer able to borrow to cover their imbalances. Faced with economic collapse, many of these countries agreed with the IMF and the World Bank to undertake programs of macroeconomic stabilization, trade and exchange rate policy reform, and structural adjustment.

Although the CFA countries never had the level of fiscal imbalance that the non-CFA countries experienced, their relative price structures nevertheless became distorted because of movements in their terms of trade, currency depreciation on the part of their competitors, and other changes in their economic environment, which resulted in substantial overvaluation of the CFA franc (Duesenberry, Gray, and McPherson, 2001, p. 3).¹ The symptoms of this overvaluation were in many ways similar to the non-CFA countries: persistent current account deficits, mounting public debt, efforts to impose “informal” quantitative controls on imports, restrictive fiscal policy, and reluctance to hold CFA francs. In January 1994, the CFA franc was devalued from 50 CFAF/FF to 100 CFAF/FF.

Despite devaluation and movement towards more flexible exchange rates, SSA has continued to suffer from “erratic movements and general overvaluation of real exchange rates” (Duesenberry, Gray, and McPherson, 2001, p. 4). Some countries with high inflation and flexible exchange rates, such as Ghana, have tried to suppress depreciation of their currencies, hoping thus to anchor inflation, but this resulted not only in overvaluation but also in volatile movements in both nominal and real rates of exchange. Overall, there was some depreciation of real exchange rates for many countries in SSA during the early 1990s, but this situation was reversed later in the decade (McCulloch and McPherson, 2001, p. 5).

¹ The CFA franc was estimated in 1991 to be overvalued by 50% to 70% of its parity at the time of 50 CFAF/FF (Stryker and Salinger, 1991).

Another cause of overvaluation was the importance for many SSA countries of foreign assistance. Often this was provided to ease the transition period before exports could respond to the new depreciated exchange rate. By easing this transition, however, donors also dampened price incentives to exporters. The situation became self-perpetuating. Foreign assistance increased the demand for imports, which was satisfied not by exports but by the foreign assistance. As an example, in Uganda, considered by many to be one of the success stories in sub-Saharan Africa, by the end of the first decade of structural adjustment, exports were no higher in real terms than they were at the beginning of the decade, and in any case were less than the value of foreign assistance (Government of the Republic of Uganda, 2001).

III. Objectives and Constraints

The basic objective of monetary, fiscal, and exchange rate policy is to provide a macroeconomic setting in which resources can be allocated most efficiently in terms of the goals of society. This implies providing a sufficiently stable and foreseeable macroeconomic environment so that planning can be undertaken and investments made to allocate resources efficiently. It also requires that domestic prices reflect as well as possible the opportunity cost of those resources. This translates into the need to maintain low and stable rates of inflation, which is vital for planning and investment decisions, and reasonably stable and appropriate interest and exchange rates, valued at the opportunity cost of capital and foreign exchange.

There are of course tradeoffs that can be made. Greater resource utilization may require higher inflation if the consequences of this are considered less adverse than those resulting from unemployment and low capital utilization. Lower interest rates may be justified by greater concern for the welfare of future generations. Externalities associated with higher rates of export growth may require some undervaluation of the exchange rate.

In practice, the ability of sub-Saharan African countries to make these fine adjustments is severely constrained. Persistent fiscal pressures lead to public budget deficits. Weak capital markets limit the government's ability to borrow, lead to high interest rates, and result in crowding out of the private sector. Limited markets for foreign exchange and volatile capital flows weaken the central bank's capacity to influence and stabilize the exchange rate.

The net result is often government borrowing from the banking system, growing domestic public debt, excessive expansion in the supply of money and credit, and rising inflation. In an effort to stem inflation, the government often puts pressure on the central bank to avoid rapid depreciation of the local currency. The actions of the central bank then depend on the particular type of exchange regime that is in place, but the net result is often overvaluation of the real exchange rate and growing current account deficits. Faced with these imbalances, governments may resort to external financing, which increases the external debt, or to restrictions on imports and foreign exchange. This creates a bias away from exports, both because of overvaluation and because resources are directed towards import-competing industries.

Even where the government budget is in balance, shocks to the balance of payments in the form of shifts in the terms of trade, changes in the level of foreign assistance, or disruptions in capital flows, as well as domestic shocks that impact the local economy such as changes in weather, can have a major destabilizing effect. Because capital and foreign exchange markets are thin, the tax base is weak, and public expenditures are not well under control, the government and central bank are severely handicapped in their efforts to stabilize the economy. There are few automatic adjustment mechanisms, as there are in the industrial countries. Furthermore, lack of diversification in exports and heavy dependence on agriculture and foreign aid make these countries particularly vulnerable. In some instances, the government and central bank may actually make things worse by stimulating speculative pressures.

The causes and consequences of overvaluation of the real exchange rate and instability in the foreign exchange market have been emphasized in EAGER/Trade research. Expansionary monetary and fiscal policy has in many countries led to persistent overvaluation, which in turn has resulted in macroeconomic disequilibrium and balance of payments crises. The resulting controls on trade and foreign exchange have distorted trade flows and the structure of production and consumption. Exports have declined, dependence on foreign aid has increased, external debt has grown, and economic growth has been reduced. These problems have occurred with both fixed and flexible exchange rate regimes (Musinguzi, Obwona, and Stryker, 2000, p. 6; McPherson, 2001, pp. 9-10; McPherson, 2000, pp. 2-3; McCulloch and McPherson, 2001, pp. 5, 10, 22).

A. Real Exchange Rate

The real exchange rate (RER) may be defined as “the ratio of the price of tradables to the price of nontradables” (McPherson, 2000, p. 3). The former is usually estimated as the nominal exchange rate multiplied by an index of tradable goods prices. Often this is approximated by a trade-weighted average of the wholesale price index in the country’s major trading partners. The price of nontradables is often approximated by the country’s consumer price index. This is a very imperfect index, however, because the CPI includes many tradable as well as nontradable goods and services. An alternative is to use a weighted average of sub-indices that reflect unit costs of nontradables used in the tradable goods sectors. In Ghana, for example, such an index is calculated comprising gross rent, fuel, power, transport, and telecommunications, which are composed for the most part of nontradables.

A real exchange rate is overvalued or undervalued if there is misalignment relative to the RER that is consistent with balance of payments equilibrium. This RER may be termed the equilibrium real exchange rate (ERER). Its value depends on what is meant by balance of payments equilibrium. Here the literature diverges. One strand ignores inter-temporal comparisons and simply assumes the existence of a sustainable level of external capital flows; the other allows for optimization over time through international borrowing and lending. According to this view, short-term shocks do not have to be dealt with in a single period by changing the exchange rate, but rather can be offset through changes in

foreign borrowing or lending (Edwards, 1989, p. 26). In addition, the ERER is influenced by policy variables such as taxes and quantitative restrictions on trade, and by other “fundamental” variables such as the terms of trade. The ERER is assumed to be affected not only by the current values of these fundamentals, but also by how they are expected to evolve in the future. The ERER in these models thus moves in response to exogenous and policy-induced changes in the fundamental variables. In addition, the observed RER is also influenced by shorter-term shocks, such as those resulting from monetary and fiscal policy, which are not included among the fundamentals (Jebuni and Stryker, 2001).

There are a number of approaches that have been used to predict the equilibrium real exchange rate. One that is widely employed is to determine a period in which the exchange rate was considered to be in equilibrium and then adjust that rate for changes in the prices of tradables and nontradables by multiplying the rate by an index of the ratio of the CPI for the country concerned to a weighted average of the WPIs for its major trading partners.² Research has shown, however, that this purchasing power parity (PPP) approach is valid only for the very long run (70 years or more), and then only for developed countries for which the effects of fundamentals can be assumed to balance out (Elbadawi and Soto, 1995, pp. 3-4). This is clearly of very limited relevance for less developed countries, which encounter important and frequent changes in fundamentals such as the terms of trade and the levels of sustainable capital flows, which include not only net borrowing abroad but also transfers in the form of remittances and foreign assistance. Furthermore, the standard flexible price specification of the PPP hypothesis has been rejected empirically in a number of countries over different periods of time (Elbadawi and Soto, 1995, p. 10)

An alternative approach to predicting the ERER builds on the reduced form models used to estimate the effects of the fundamentals on the real exchange rate and incorporates assumptions regarding how these fundamentals will evolve in the future (Edwards, 1989, chapter 2; Musinguzi, Obwona, and Stryker, 2000). One empirical application of this approach is that of Edwards (1994). In this paper, the equilibrium real exchange rate is estimated as a function of the fundamental variables, macroeconomic policies, the nominal exchange rate, and the spread of the parallel relative to the official exchange rate as an indicator of the severity of import and exchange controls. The results of this analysis suggest that (1) discrepancies between actual and equilibrium real exchange rates tend to disappear slowly if left on their own; (2) nominal devaluations can be helpful in speeding up the restoration of real exchange rate equilibrium; (3) macroeconomic disequilibria influence the real exchange rate in the short run; and (4) the equilibrium real exchange rate is affected only by changes in the fundamental variables in the long run.

Of particular importance empirically has been the cointegration approach, which allows for the decomposition of time-series data into permanent (sustainable) and transitory

²Note that this index is the same as that used to deflate the NER to obtain the RER, and is therefore subject to the same limitations as a measure of the price of nontradables relative to the price of tradables.

components of the fundamentals and a relatively straightforward computation of the ERER (Elbadawi and Soto, 1995, p. 5). "In this setup, a structural or theoretical model provides a reduced-form linear long-run relationship between the RER and its fundamentals, while an error-correction mechanism is used to describe the short-run dynamics of the RER around its long-run value ... [T]he cointegrating vector allows a straightforward computation of the equilibrium RER." (Elbadawi and Soto, 1995, pp.11-12) This is the approach that was used to estimate the ERER in Ghana (Jebuni and Stryker, 2001).

In a flexible price monetary model, where foreign and domestic assets are perfect substitutes, the authorities can influence the nominal exchange rate, but not the real exchange rate, through monetary policy. On the other hand, if prices are sticky, especially in a downward direction, the actual RER may differ from the ERER in the short run because of the time required for adjustment, and monetary policy can be used to smooth the return to equilibrium. Over the longer run, however, monetary policy plays no role in determining the RER, which is influenced solely by real fundamentals (Pilbeam, 1992, p. 189)

The picture changes if one allows for differences between foreign and domestic assets due to variations in risk, as in the portfolio balance model (Pilbeam, 1992, chapter 8). Here, for example, sterilized foreign exchange operations, which leave the domestic money supply unchanged, can be used to alter the RER, as well as domestic interest rates, and thus assist the return of the economy to equilibrium over the long as well as the short term. This model appears to be best suited to describe the situation in Africa, where the holding of domestic assets is generally perceived to carry greater risks than the holding of foreign assets.

B. Exchange Rate Regime

An important question is what type of foreign exchange regime best equips sub-Saharan African countries to handle the problems associated with macroeconomic imbalance and shocks to the balance of payments. The choices explored under EAGER Trade research include the following:

1. Currency boards;
2. Fixed exchange rate regimes with infrequent adjustments in the exchange rate;
3. Fixed exchange rate regimes with frequent adjustments in the exchange rate;
4. Floating exchange rates.

Each of these regimes is briefly examined below with respect to their pros and cons within Africa. There is also a discussion of dollarization as a step towards a distinct regime.

1. Currency Boards

A currency board system requires 100 percent backing of local currency by the board's holdings of foreign exchange. The board is prohibited from lending to the government or to commercial banks. This implies that the supply of domestic currency is not under the control of the board, but depends, instead, on the balance of payments and on the willingness of the country's residents to hold domestic assets. One result is a severe limitation on inflation (Duesenberry, Gray, and McPherson, 2001, p. 7).

The main advantage of a currency board is the high degree of certainty that it inspires in the stability of the local currency. This greatly facilitates investment planning and helps to reduce transaction costs. However, it also prevents the use of monetary and exchange rate policy for stabilization in the face of internal and external shocks or for longer-term adjustments to changes in the fundamentals determining the equilibrium real exchange rate. For example, should the terms of trade move against a country with this type of exchange rate regime, the main recourse of the government and central bank would be to depress demand to the extent necessary to lower the price of tradables relative to that of nontradables, so as to achieve a change in the RER without changing the nominal exchange rate (NER).³ This could be quite costly in terms of reduced income, employment, and excess capacity.

Currency boards were relatively common in parts of Africa during the colonial period but were generally replaced by central banks operating under fixed exchange rate regimes at the time of independence. Nevertheless, the widespread prevalence of fiscal imbalances leading to monetary expansion and inflation has caused some to wonder whether a return to some type of currency board system, such as we have seen in Eastern Europe and Latin America, might not be desirable.

2. Fixed Exchange Rate Regimes with Infrequent Adjustment in the Exchange Rate

One alternative to currency boards is a fixed exchange rate regime with very infrequent adjustments in the exchange rate. The CFA franc zone is an important example, where the exchange rate has only been adjusted once in over 40 years. This helps to assure price stability by limiting government access to credit from the banking system, which, as with a currency board, has the advantage of facilitating investment planning and reducing transactions costs. It also limits the use of monetary policy and effectively removes the exchange rate from being a mechanism of adjustment to external or internal disturbances, of either a permanent or a transitory nature.

To the extent that the expansion of money and credit is not contained, resulting inflation is likely to lead to at least a short-term appreciation of the real exchange rate, which will

³ One alternative would be to increase productivity in the tradable goods sector so that these goods would become more competitive at existing world prices. This would have an effect similar to changing relative prices of tradables and nontradables, but it is likely to prove very difficult to achieve in the short to medium term.

have an adverse impact on the balance of payments and make subsequent adjustment without devaluation more difficult (Duesenberry, Gray, and McPherson, 2001, p. 5). In addition, either fiscal and monetary expansion or alterations in the fundamentals determining the real exchange rate will result in balance of payments disequilibrium, which will in turn generate uncertainty regarding the possibility of devaluation. This not only will disrupt investment planning, but also may lead to speculative pressures, putting further pressure on the exchange rate. This is precisely what ensued in the months leading up to the devaluation of the CFA franc in January 1994.

Even if the disturbance to the balance of payments is temporary, the country requires sufficient reserves or borrowing capacity to be able to maintain the fixed exchange rate until the balance of payments crisis is eased (Duesenberry, Gray, and McPherson, 2001, p. 6). Otherwise, the authorities will likely be required to impose severe constraints on demand or quantitative restrictions on trade and foreign exchange, which can be quite detrimental to growth and investment. In the case of the CFA countries, reserves are pooled and backed up by the Operations Account of the French treasury.

3. Fixed Exchange Rate Regimes with Frequent Adjustment in the Exchange Rate

Outside the CFA zone, fixed exchange rate regimes have been characterized to a much greater extent by frequent adjustments in the exchange rate. Generally, balance of payments disequilibrium occurs because of monetary and fiscal expansion or other external or internal disturbances. Because most African countries do not hold large reserves, they are obliged to borrow externally, suppress demand through restrictive monetary and fiscal policy, or resort to quantitative controls. Some countries, such as Ghana, exhausted their reserves and borrowing potential relatively early on. Lacking the fiscal discipline necessary to suppress demand, they imposed controls on trade and foreign exchange, which were extremely damaging to the economy. Ultimately, they were required to devalue, often several times, before a number of them moved to a flexible exchange rate regime.

Other countries were able to borrow until the debt crisis of the 1980s forced them to seek other alternatives. Some of these countries, such as Malawi, continued to maintain fixed exchange rate regimes, but were required time and again to devalue their currencies because of domestic inflation and other imbalances. This resulted in large variations in the real exchange rate, which heightened uncertainty and induced speculation. This type of exchange rate regime, therefore, offers few advantages with respect to reducing transaction costs or uncertainty regarding investment planning.

4. Floating Exchange Rates

Because fixed exchange rates that are frequently adjusted offer few advantages, most countries other than those in the CFA zone have moved to floating exchange rate regimes. This eases substantially the burden of adjustment and reduces speculation over when fixed rates will be changed. Balance of payments equilibrium is maintained by movements in the exchange rate rather than by suppressing demand or implementing

controls on trade and foreign exchange. There is a cost, however, in terms of higher transaction costs and greater uncertainty of investment planning. More important is the absence of the balance of payments as a discipline against fiscal and monetary expansion.

Another problem with floating exchange rates is that the rate determined by market forces may not be ideal for promoting longer-term growth. This may be because of temporary shocks resulting from changes in the terms of trade, weather conditions, or political conditions in trading partners. International flows of capital, remittances, or foreign assistance can vary substantially, with consequent effects on both nominal and real exchange rates. In fact, the real exchange rate may in the short run depart markedly from its longer-term equilibrium level. The fact that elasticities of demand and supply for foreign exchange may be much lower in the short than in the longer run may also result in substantial overshooting of the exchange rate (Duesenberry, Gray, and McPherson, 2001, p. 9).

One of the key policy issues examined by the EAGER/Trade project is the extent to which it is desirable for central banks to intervene in the foreign exchange market to correct these distortions and to provide for orderly movements in the exchange rate. The financial and technical resources required for this intervention varies substantially across countries (Duesenberry, Gray, and McPherson, 2001, p. 10). In most countries, moreover, the ability of the central bank to sterilize the effects of its interventions in the foreign exchange market on the domestic money supply through open market operations is severely hampered by the narrow secondary market for government securities. As a result, stabilization of the exchange rate may be at the expense of instability of interest rates. This was a major problem for Uganda in the mid 1990s because of the coffee boom.

Another problem is the tendency for governments to encourage central banks to try to avoid excessive depreciation of the exchange rate as an anchor against inflation. This almost always results in appreciation of the real exchange rate, which encourages imports and discourages exports. In Latin America and Asia, this has given rise to the belief that macroeconomic stabilization is a prerequisite to successful trade liberalization (McCulloch and McPherson, 2001, p. 23). In Africa, on the other hand, trade and exchange liberalization have often been the first components of a structural adjustment package, before the macroeconomic situation is really under control. The result too often is a squandering of reserves, accumulation of external debt, and imposition of “informal” controls on trade and foreign exchange. Furthermore, exporters have suffered from lack of price incentives and uncertainty regarding the RER.

5. Dollarization

The presence of substantial uncertainty resulting from rapid depreciation and instability of the exchange rate has resulted in SSA in the phenomenon of dollarization or currency substitution, whereby dollars or other convertible foreign currencies are held as a hedge in place of local currency. To some extent this may occur offshore, but increasingly, with

liberalization of exchange controls, it occurs through increases in foreign currency deposits held in the domestic banking system. This protects the private holder but reduces the effectiveness of monetary policy, which only influences the supply of local currency. It can also make the banking system more vulnerable to capital flight and to fluctuations in holdings of foreign exchange.

There is considerable debate regarding the pros and cons of dollarization. In Ghana, for example, dollarization is significant but hardly massive, as it has been in some Latin American and East European countries (Stryker, 1999). However, the monetary authorities have been concerned about the potential inflationary consequences of foreign exchange deposits over which they have little control and which can be used to fulfill reserve requirements against loans.

Dollarization is interesting because it is a step towards complete acceptance of a foreign currency as a store of value, unit of account, and even medium of exchange. In effect, an exchange rate regime in which a convertible foreign currency is the recognized currency of the country is very similar to a currency board. There is complete absence of monetary and exchange rate policy, as well as the loss of the benefits from seigniorage. As with a currency board, this inhibits inflation, lowers transaction costs, increases certainty, and makes adjustment more difficult.

C. Empirical Analysis of Impact of Exchange Rate Regime on Growth

Research under EAGER/Trade looked at the empirical significance of the exchange rate regime for trade and economic growth (Amvouna, 1998). The analysis was conducted using panel data for 35 African countries for three periods over the years from 1980 to 1994. The dependent variables examined were average annual growth of real per capita GDP, average annual growth of the ratio of exports to GDP, and the ratio of the current account balance to GDP.

The results indicate that countries that maintained fixed exchange rate regimes but adjusted their exchange rates frequently performed almost as well with respect to growth of per capita GDP as did countries with floating rates. Each of these groups performed much better than countries with fixed rates but only very infrequent adjustment, such as the CFA franc zone. This was particularly true during the period 1987-93, just before the devaluation of the CFA franc. This suggests that increasing overvaluation of the CFA franc during this period had a significant negative impact on economic growth.

Furthermore, countries that changed their regime in the direction of floating rates saw a substantial increase in their exports in relation to GDP. Part of the reason appears to be the gain from depreciation in the real exchange rate associated with this shift.

One implication of this research is that monetary union may pose significant problems for its members despite the fact that this union helps to minimize fiscal deficits and excessive expansion of the supply of money and credit. The problem appears to be that monetary union makes changes in the exchange rate exceedingly difficult, since all members must

agree on the changes and the changes required by some countries may not be the same as those required by other countries.

IV. Empirical Analysis of Monetary and Exchange Rate Policy

In this section, we describe the empirical analyses conducted under EAGER/Trade of monetary and exchange rate policies in Kenya, Uganda, and Ghana. Each of these analyses uses a somewhat different methodological approach. In addition, the Kenya and Uganda analyses estimate systems of equations whereas the paper for Ghana estimates only a single reduced-form equation. Together the analyses arrive at a number of important, and not totally expected, results.

A. Exchange Rates and Economic Growth in Kenya

McPherson and Rakovski (2000) use annual data covering the period 1970-96 to analyze both direct and indirect relationships between real and nominal exchange rates and growth of real GDP.⁴ They derive these relationships using a single-equation approach, a fully specified macroeconomic model, and a vector-autoregression model and cointegration test.

1. Single-Equation Estimations

The single equation approach estimates the impact of the money supply, inflation, and the exchange rate on real economic growth. The underlying theoretical underpinning of this model is the standard purchasing power parity (PPP) approach, with no distinction being made between tradables and nontradables so that domestic prices (P) equal foreign prices (P^f) multiplied times the nominal exchange rate (E). The demand for money $M^d = P*Y/V(i)$, where Y is real income, V is the velocity of circulation, and i is the rate of interest. Demand for money is assumed to equal the supply of money, and interest rate arbitrage is assumed to prevail, so that $i-i^f = dE$. First differences are used to limit the influence of trends in the variables, and one-period lags in these differences are also introduced into the estimating equation.

According to this model, the real exchange rate (RER) is determined by real GDP (Y/P), real money balances (M/P), and real interest rates ($i-dP/P$). For any given level of real GDP, therefore, the real exchange rate is determined in the model solely by monetary variables. In the estimating equation, only the real rate of interest has a significant effect on RER, the effect being positive. The most reasonable explanation for this is that autonomous capital flows into Kenya, including donor support, tend to result in both an appreciation of the real exchange rate and a lowering of the real rate of interest. This suggests that the model as it stands is incomplete in that it neglects at least one important exogenous variable.

⁴ Exchange rates are defined throughout this paper as local currency divided by foreign currency. A depreciation is therefore considered to be an upward movement in the exchange rate, and an appreciation a downward movement.

One of the most important conclusions of the analysis is that the real exchange rate does not have any significant effect on real GDP. This suggests that there may be a number of other factors influencing trade and growth, and that devaluation by itself is no panacea.

2. Simultaneous-Equation Model

In addition to the single-equation model, a simultaneous-equation model was also constructed, which includes the following dependent variables expressed as first differences: price level, real income, nominal exchange rate, government revenue, imports, real agricultural output, money supply, change in net foreign assets as an indicator of the balance of payments surplus, and change in domestic credit. The last two variables are expressed as levels of changes in net assets or liabilities rather than first differences. This model, which includes both real and monetary variables, is based on the financial programming framework used by the International Monetary Fund. The equations were estimated using three-stage least squares.

Although the empirical results are somewhat inconclusive, with many independent variables not being significant or having the wrong signs, a number of interesting conclusions emerge from the analysis:

1. Inflation is positively related to M and P^f and negatively related to real income. This is not surprising as long as there is little change in the velocity of circulation, in which case the estimating equation becomes almost definitional. What is more interesting is the fact that the nominal exchange rate has had very little impact on inflation, despite the fact that the shilling depreciated substantially over the period covered.⁵ This implies either that prices in Kenya are dominated by nontradables, which are little influenced by the prices of tradables, or, more likely, that depreciation of the exchange rate has been a result rather than a cause of inflation. The latter explanation refutes the idea of using the exchange rate as an anchor against inflation.
2. There is little relation between changes in the real exchange rate and growth of real income, even when the change in the exchange rate is lagged by one year. This implies that if there is a response in the production of tradables to a change in the RER, it either is relatively muted or is very slow. This may be because there are other important intervening variables such as infrastructure, human capital, etc., which are required for this response to take place. The result confirms that obtained from the single-equation analysis.
3. The association between the real exchange rate and real growth of agricultural output is significantly negative. This may reflect the combined impact on the exchange rate and agricultural output of exogenous variables such as weather and the terms of trade. Good weather or an improvement in the terms of trade would tend to increase the value of agricultural production, accompanied by a decrease

⁵ According to the data presented in the paper, the shilling depreciated by 348% vis-à-vis the US dollar from 1985 to 1996.

in imports and/or an increase in exports. Each would tend to cause the real exchange rate to appreciate. The problem is not just one of simultaneity but also of identification of the true relationships between the different variables.

4. Foreign aid has a significant positive effect on the nominal exchange rate (NER), which is opposite of what would be expected. Normally, one would suppose that an increase in foreign aid would result over the longer run in an appreciation of the exchange rate, yielding a negative sign. But in Kenya's case, until the mid 1990s, the nominal exchange rate was pegged to the SDR (IMF, 1996), after which the country moved to a managed float, with the central bank operating in the foreign exchange market to slow depreciation of the shilling. Changes in the NER have thus depended much more on changes in the exchange rate regime and on rates of inflation relative to Kenya's trading partners than on disturbances to the balance of payments. For example, during the 1990s there was a sharp decline in the level of foreign aid, followed by a steep expansion in the money supply and a sharp rise in inflation. The exchange rate was partially freed up, but was not allowed to depreciate as rapidly as inflation, so that the Real Effective Exchange Rate appreciated by about 66% from 1993 to 1999 (World Bank, 2001, p. 50).⁶ This suggests that the link between foreign aid and the real exchange rate can be quite complex.

3. VAR Model and Cointegration Test

A Johansen cointegration test was run on a vector-autoregression (VAR) model of real income and the real exchange rate. No cointegration was found between these two variables, suggesting that, no matter what the direction of causation, no relationship exists between them, at least for the Kenya data.

This suggests exchange rate management must be accompanied by broad-based structural adjustment and reform related to other dimensions of development such as dependence on foreign aid, large and inefficient public sector, low rates of saving and investment, persistent and relatively large budget deficits, and inconsistent macro policy (McPherson and Rakovski, 2000, p.1).

B. Alternative Approaches to the Real Exchange Rate

There have been a number of criticisms made of the financial programming model, which underlies the simultaneous model estimated for Kenya (Tarp, 1994, pp. 75-78). One is that it is essentially a monetary model, with output and exports determined exogenously. The focus is on maintaining stability by constraining demand rather than increasing supply. A second critique is that there are no structural equations to show how the exchange rate influences growth of output, via, e.g., growth of exports and/or investment. A third is that the model assumes the law of one price. Changes in the exchange rate

⁶ The Real Effective Exchange Rate (REER) is a trade-weighted index of RERs of major trading partners.

influence balance of payments only through changes in the overall level of prices and not through relative price effects.

An alternative approach to analyzing the real exchange rate is to estimate a reduced form equation explaining the real exchange rate on the basis of a number of fundamental real variables, plus monetary variables, which influence RER in short run. This is the approach used by Edwards (1994), which was described earlier. The equilibrium real exchange rate (ERER) is then derived from long-term, sustainable values of the fundamental variables. Substantial departures of the RER from the ERER over any length of time can serve as an element of an early warning system (Musinguzi, Obwona, and Stryker, 2000, p. 16).

As an example, the model constructed for Ghana applies to a small open economy with three sectors: importables, exportables, and nontradables (Jebuni and Stryker, 2001).⁷ The domestic price index of tradables is given by,

$$P_T = E[(1-t_x)P_x^f]^a [(1+t_m)P_m^f]^{1-a}, \quad \dots (1)$$

where E is the nominal exchange rate, t_x is the tax rate on exports, t_m is the tax rate on imports, and P_x^f and P_m^f are the dollar-denominated world prices of exportables and importables. The price of nontradables P_n is endogenously determined by supply and demand in the domestic market. Demand for nontradables is assumed to be determined by the domestic prices of the three goods and domestic absorption A ; supply of these goods depends on the three prices and income Y . In addition, the level of government expenditures G in relation to income, as well as the composition of those expenditures g_n (equal to the fraction of government expenditure spent on nontradables), can also be introduced as an explanatory variable, since demand on the part of government probably differs from demand by the private sector.

The real exchange rate e is defined as the domestic price of tradables relative to the domestic price of nontradables,

$$e = P_n/E[(1-t_x)P_x^f]^a [(1+t_m)P_m^f]^{1-a} \quad \dots (2)$$

Solving for e in terms of the exogenous variables of the model yields

$$e = e(A/Y, Y, TOT, t_x, t_m, G/Y, g_n), \quad \dots (3)$$

where TOT represents the external terms of trade. This equation assumes instantaneous equilibrium in the nontradable goods market in terms of foreign and domestic fundamentals. Higher levels of absorption relative to income imply an inflow of capital, which result in appreciation of the exchange rate. Greater levels of income, with A/Y held constant, implies larger excess aggregate demand or supply, with resulting effects on the exchange rate. There is also likely to be a pro-trade bias to the growth of absorption,

⁷This model is largely taken from Elbadawi and Soto (1995, pp. 13-19).

holding constant the price-distorting effects of trade policy, which may or may not be compensated for by bias in the growth of aggregate supply. Higher taxes on imports lead to appreciation of the exchange RER, whereas higher taxes on exports have the opposite effect. An improvement in the terms of trade raises the domestic price of exports relative to that of imports. This leads to both income and substitution effects, with the net outcome on the RER being theoretically ambiguous, though empirical evidence suggests that the RER in this case usually tends to appreciate. Greater expenditures by government on nontradables tend to increase their prices relative to those of tradables, which also appreciates the exchange rate. The theoretical effect of G/Y is ambiguous, though empirical evidence suggests that the share of nontradables in these expenditures is higher than for the private sector, so that a higher value of G/Y tends to increase the prices of nontradables relative to those of tradables, causing the RER to appreciate.

Extensions of this model can involve endogenizing A/Y as a function of the sustainable level of capital inflows, the real rate of interest abroad, the domestic risk premium, and expectations regarding future changes in the exchange rate (Elbadawi and Sato, 1995, p.15). The resulting model can be solved recursively to yield the full equilibrium exchange rate (FEER) that is consistent with the expected long-run evolution of the fundamentals. In order to have an empirical estimate of the FEER; however, it is necessary to estimate the sustainable path of the fundamentals. This may be done with historical time-series data by using a cointegration approach and decomposing the series into cyclical and permanent (sustainable) components (Elbadawi and Sato, 1995, p.17). Projections can then be made on the basis of the empirically estimated parameters and additional information regarding the likely evolution of exogenous and policy variables.

The empirical analyses of the RER in Ghana and Uganda are applications of this model. In the case of Ghana, the cointegration approach was used, whereas in Uganda, a system of equations was more fully elaborated and estimated using two-stage and three-stage least squares.

1. Ghana

For Ghana, the quarterly data set covers nineteen years, beginning in the first quarter of 1980 and ending in the fourth quarter of 1998 (Jebuni and Stryker, 2001). The real exchange rate used in the estimation is the real bilateral exchange rate between the US dollar and the Ghanaian currency, calculated as the nominal exchange rate adjusted for relative rates of inflation between the two countries. Trade policy is estimated as the greater of the black market premium or the effective import duty rate, to reflect the fact that duties were not always binding. The terms of trade (TOT) measure is commodity weighted and dominated by the world market prices of gold and cocoa -- two of Ghana's leading export commodities; import prices are measured by the export unit price index for developed countries. Long term capital inflows equal the sum of foreign direct investment and long term capital under the capital account of the balance of payments expressed as a ratio to GDP. Growth of real GDP is used as a proxy for change in productivity in Ghana relative to its trading partners. The real interest rate differential

between Ghana and the US was used to measure country risk. Central government non-debt expenditures (excluding transfer payments) were used as one indicator of the relative importance of nontradables. The influence of monetary policy was measured by the difference between actual growth in credit and growth in GDP.

The model implies that there is a long-run relationship between the real exchange rate and its fundamentals. An important issue, therefore, is whether those variables and the real exchange rate are co-integrated. Since fundamentals are variables that affect the exchange rate in the long run, they are expected to have the same order of integration as the real exchange rate. If the real exchange rate is stationary in the sense that it reverts to its mean, then the fundamentals should be stationary too. However, if the real exchange rate is non-stationary, then any stationary variable cannot be a fundamental.

The results of the Augmented Dickey-Fuller (ADF) unit-root test indicate that virtually all variables, including the RER and its fundamentals, have unit roots i.e., they are non-stationary. However, there is strong evidence that the measure of excess credit growth is stationary, which is consistent with monetary policy not having any long-term impact on the real exchange rate.

Tests of cointegration show that there is at least one co-integrating equation between the real exchange rate and the fundamentals. This permits estimation of the cointegrating equation and also of the short-run dynamic relations using the error correction model.

The results of this analysis suggest that increased taxes or restrictions on imports lead to appreciation of the real exchange rate, whereas import liberalization results in depreciation of the local currency. These results are consistent with findings for Ghana and other developing countries (Edwards, 1994; Elbadawi and Soto, 1995), which imply either that trade liberalization is not sustainable without a corresponding real exchange rate depreciation or that more open economies require a more depreciated equilibrium real exchange rate than controlled ones.

The coefficient of long term capital inflows is also significantly negative. This implies that capital inflows lead in the long run to real appreciation. This could also be true of official and private transfers. There is some concern, therefore, that flows of foreign aid and remittances from abroad could result in appreciation of the RER, inhibiting the expansion of exports. For example, in Uganda, exports at the end of the 1990s equaled only about one-third the value of imports, the rest being covered by official and private transfers. This is likely one of the reasons why the value of exports was about the same as it was during the early 1990s, at the start of reform (Government of the Republic of Uganda, 2001).

A successful outward oriented policy may require the maintenance of an undervalued currency for a considerable period of time as an incentive for the development of the export sector. This was accomplished in a number of Asian countries through the achievement of fiscal surpluses (World Bank, 1993). As exports become more competitive and productivity increases in the export sector, the real exchange rate may be

expected to appreciate back towards its equilibrium value. Indeed, the coefficient for overall GDP growth is significantly negative, implying appreciation of the RER as productivity increases. Capital inflows and transfers, particularly to the public sector, can lead to a real appreciation of the local currency before productivity growth is sufficient to justify this appreciation, which creates problems related to the sustainability of real depreciation achieved through economic reforms and the maintenance of export incentives.

The coefficient of the terms of trade variable is positive suggesting that an improvement in the terms of trade is associated with real depreciation in the long run. In theory, the direction of the effect of the terms of trade on the equilibrium real exchange rate cannot be determined a priori, depending on the relative strengths of the income and substitution effects. However, empirical work on other countries, including Ghana, using different time periods, suggests that favorable movements in the terms of trade lead to real appreciation in the long run (Elbadawi, 1994; Feyzioglu, 1997). There are two reasons for the opposite result to occur in Ghana. First, the terms of trade variable is dominated by cocoa and gold exports. These two sectors were dominated by the state over most of the period studied, resulting in little transmission of the income and price incentives generated by the improvement in the terms of trade.⁸ Second, there is a confounding of the effect of changes in the terms of trade with those of foreign aid transfers, which are not included in the variable on capital flows. Transfers tended to increase when the terms of trade worsened and vice versa. This offset the effect of the terms of trade shift.⁹

The short run dynamic relationship is modeled using the error correction model. This allows us to discuss the role of macroeconomic policy in affecting the exchange rate. Expansive macroeconomic policies that are not consistent with the fundamentals will lead to exchange rate misalignment (Edwards, 1994). For countries pursuing an export-led growth strategy such misalignment can be counterproductive as it erodes the incentives for the tradables goods. Furthermore, such misalignment can lead to further policy distortions, as interest rates and trade policies are used to sustain the overvalued exchange rate.

In the empirical analysis for Ghana, two indicators of macroeconomic policy are used. These are the government budget deficit as a percentage of GDP and the excess growth in credit. The coefficients for both variables have the right signs, but that for monetary policy is not significant. Thus, expansionary fiscal policies resulting in budgetary deficits tend to lead in the short run to real exchange rate appreciation. Maintained over a period of time, this can cause significant overvaluation of the exchange rate.

Monetary policy, as stated, is not significant statistically. This raises a possible question about fiscal accommodation by the monetary authorities and the independence of monetary policy. For most of the reform period in Ghana, monetary policy has

⁸ For example, in the cocoa sub-sector, the producer price is fixed by the Cocoa Board.

⁹ In the short run, according to the error correction model, improvements in the terms of trade led to real appreciation.

accommodated fiscal expansion by the government. In these circumstances, the effects of the two variables cannot be distinguished. However, the Bank of Ghana has also intervened in foreign exchange markets to stop the local currency from depreciating. This intervention has taken the form of the use of moral suasion on both the deposit money banks and the Forex Bureaux to set appropriate exchange rates. Moreover, with a foreign exchange market that is quite segmented, and the Bank of Ghana's dominance of the interbank foreign exchange market, the exchange rate in this market is determined to a large extent by the foreign exchange operations of the Bank of Ghana. These activities tend to mask the effects of monetary policy on the exchange rate. However, the signs of the coefficients show that expansionary monetary policy, like expansionary fiscal policy, will lead in the short run to overvaluation of the exchange rate.

The results also suggest that the process of dynamic adjustment is very slow so that monetary, fiscal, and exchange rate policy can exercise a fairly sustained influence over the RER until alignment of the RER with its fundamentals is reached. It should also be noted that reaching this alignment does not imply that the RER is at its long-run equilibrium rate. For this to occur, the fundamentals would also have to be at their long-run equilibrium levels. What these should be is a subject that has been debated at length in the literature (Hinkle and Montiel, 1999).

2. Uganda

The analysis for Uganda involved estimation of equations for exports, imports, government expenditures, and government revenue, in addition to a reduced form equation for RER (Musunguzi, Obwona, and Stryker, 2000). Quarterly data were used from the first quarter of 1987 to the last quarter of 1998. The econometric procedure was two and three stage least squares. Some of the major results are as follows:

1. The RER is significantly affected in a positive direction by the RER lagged one period, suggesting the presence of short-term dynamics not fully accounted for in the Ugandan model.
2. There is no significance of the monetary variable (excess liquidity) on the RER. This may be either because there has been little excess liquidity, given the high level of fiscal discipline that has prevailed in Uganda, or because monetary variables do not have much influence on the exchange rate, which would be consistent with the experience of Ghana. The Bank of Uganda has intervened in the foreign exchange market, and this has undoubtedly broken some of the links between monetary policy and the exchange rate. The reasons for this have had more to do with trying to stabilize the RER in response to shocks to the balance of payments than the interventions pursued by the Bank of Ghana to use the exchange rate as an anchor against inflation.
3. The terms of trade in Uganda do not have significant affect on the RER when excess liquidity is included as an explanatory variable, but the signs of both current and lagged values of this variable are in the right direction. It is

significantly negative, as expected, when the monetary variable is excluded from the analysis.

4. Capital inflows are positively related to the RER, with the sign being significant when the monetary variable is excluded. This is similar to the experience in Kenya with respect to foreign aid. Since the period was one in which there was substantial liberalization of the exchange rate regime accompanied by large inflows of capital associated with programs of structural adjustment, it is possible, as in Kenya, that this overwhelmed the true relationship between capital flows and the exchange rate.
5. The value of real exports is positively affected by lagged real exports, the terms of trade, and productive capacity. There is no perceived influence of the RER, which supports the Kenyan result that the RER does not have any tangible influence on economic growth. This implies that the price elasticity of exports with respect to the RER is relatively low, at least in the short run, in absence of other interventions.

V. Policy Conclusions

There are a number of policy conclusions that can be drawn from the EAGER/Trade research on monetary, fiscal, and exchange rate policy in Africa. Some of these relate to the problem of aligning the real exchange rate (RER) with its long-term equilibrium level. Others deal with the difficulties posed by short-term shocks to the balance of payments.

A. Alignment of Real Exchange Rate with Its Equilibrium Level

1. Fixed versus Floating Exchange Rates

The cross-country analysis discussed earlier strongly suggests that floating exchange rates or fixed rates that are changed frequently are preferable to a fixed rate with very infrequent changes. This is particularly likely to occur when the fixed rate regime exists within a common monetary union, where it may prove difficult to get agreement on changing the rate. Such was the case with the CFA franc zone. Nevertheless, this finding is provisional because it is based largely on the CFA monetary union in which serious overvaluation only occurred during one period.

2. Trade Policy and the Real Exchange Rate

The results for Ghana show that trade protection is negatively related to the RER. The higher the degree of protection, the lower the exchange rate. This penalizes exports and is a major reason why protective trade and exchange rate regimes are inimical to growth. Inversely, lowering of protective barriers must be accompanied by depreciation of the exchange rate. This not only stimulates exports but also helps to protect import competing industries when they lose their protection.

The fact that tariffs on trade are accompanied by a lower exchange rate is important when considering what should be the equilibrium real exchange rate (ERER). Since import tariffs are generally required for revenue purposes in most African countries, this implies that the exchange rate will be overvalued and exports penalized in comparison with a free trade situation in which public revenues are less distortionary. This cannot be helped, given the weakness of the tax base and tax administration, but it argues for keeping import tariffs as low as possible.

3. Overvaluation Due to Fiscal Deficits

Probably the most difficult problem that sub-Saharan African countries face with respect to monetary, fiscal, and exchange rate policy is how to avoid persistent overvaluation of the currency in a situation of sustained budget deficits. These deficits put heavy pressure on the monetary authorities to expand credit to the government, and the thinness of money and financial markets makes it very difficult to finance these deficits by issuing government securities or to offset the expansion of credit with open market operations. The result is inflation, balance of payments deficits, and pressure on the central bank to intervene in the foreign exchange market to slow resulting depreciation of the local currency. As a consequence, the exchange rate becomes overvalued and exports are discouraged.

The problem is compounded by limits of the capacity of the central bank to slow depreciation because of the low level of foreign exchange reserves. As a result, ingenious means must be found to “jawbone” the foreign exchange market into resisting upward movements in the exchange rate through “moral suasion”. Other mechanisms include increasing reserve requirements for loans backed by foreign exchange and imposing unofficial restraints on trade. Each of these acts as a disincentive to trade. In addition, the arbitrariness of these policies and the fluctuations in foreign exchange reserves that are likely to arise imply that movements in the exchange rate often become erratic and uncertain.

4. Overvaluation Due to Capital Inflows

Another major problem is overvaluation resulting from inflows of capital, official transfers, and remittances and other private transfers. Although the impact of these on the RER is not conclusive from the empirical studies summarized above, in Kenya and Uganda this seems to be at least partly because increased inflows accompanied substantial liberalization of the exchange rate regime, which caused the RER to depreciate. Thus, the positive correlation between these inflows and the RER is spurious. This conclusion is supported by the results in Ghana, which experienced reform somewhat earlier and where the correlation is significantly negative. To the extent that these inflows cause the exchange rate to be overvalued in relation to the equilibrium rate in the absence of the flows, the export sector is likely to experience substantial price disincentives.

5. Low Export Price Elasticities

The results for both Kenya and Ghana suggest that the elasticities of export and GDP response to changes in the RER are quite low, if not zero. This is consistent with the general observation that African countries have not experienced very rapid export growth following structural adjustment and that the growth that has occurred has often been due to a “bounce back” from a situation in which severe distortions in the economy had nearly crippled it (Jebuni and Stryker, 2001). This finding suggests that much remains to be done in the way of infrastructure development, institution building, and forging linkages with regional and overseas markets before the potential created by policy reform can be fully realized.

B. Responding to Shocks

Another set of problems arises because of limited ability to respond to shocks to the balance of payments in ways that would stabilize the market for foreign exchange. Some have argued, as was pointed out earlier, that monetary authorities would be better off not trying to respond, given the thinness of financial markets, limited availability of reserves, and the difficulty of distinguishing between short term shocks and longer term movements in the fundamentals. Nevertheless, the pressures are often intense.

The shocks and the constraints facing policy makers make a formidable list:

- Heavy dependence on foreign aid, which is often subject to substantial fluctuations for political, bureaucratic, and other reasons.
- Dependence on a limited range of primary product exports with substantial fluctuations in world market prices.
- Vicissitudes of the international capital market.
- Thinness of the secondary money and financial markets, which inhibits open market operations designed to sterilize the impact on local currency of stabilization operations in the market for foreign exchange. This poses the danger that stabilization of foreign exchange markets may spill over and destabilize domestic capital markets.
- Problem that intervention in the foreign exchange market may engender speculation.
- Currency substitution engendered by uncertainty regarding value of local currency renders monetary and exchange rate policy more difficult.

The short-term empirical analysis summarized in this paper offers little guidance concerning how to reduce these problems beyond the stricture that fiscal deficits exacerbate the problem. Monetary policy is generally shown to have little influence on the real exchange rate, even in the short run. This may be because the central bank is intervening in other ways, such as directly in the foreign exchange market. Or, it may be because the parameters underlying the relationship between monetary policy and the exchange rate are sufficiently unstable that predictable relationships cannot be

established. Either way, the analysis offers no encouragement to those who would advocate the use of monetary policy to accomplish exchange rate objectives.

This leaves fiscal and exchange rate policy. Fiscal policy is notably inflexible and undependable when it comes to its use for stabilization purposes. Direct intervention in the foreign exchange market is feasible as long as reserves are adequate or foreign borrowing is possible. However, foreign exchange reserves are often very limited, and there is the danger of increased foreign indebtedness associated with foreign borrowing to prop up the local currency.

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