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# Capital Controls and Exchange Rate Stability in Developing Countries

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In the wake of the East Asian, Russian, and Brazilian currency crises of the 1990s, a growing chorus of observers and economists (for example, Radelet and Sachs 1998, and Stiglitz 2000) has argued that an underlying cause of – or at least a contributing factor to – such disruptions is the liberalization of international capital flows, especially when combined with fixed exchange rates. A common policy prescription that follows from this argument is to impose restrictions on capital flows and other international payments with the hope of insulating economies from speculative attacks and thereby creating greater currency stability.

Surprisingly little systematic work, however, has been done on how well capital controls help stabilize currencies in developing countries. This *Economic Letter* reports on our study, which investigates the link between capital flow restrictions and exchange rate stability for a broad sample of developing economies (Glick and Hutchison 2000). We employ an empirical model of the determinants of currency crises as a benchmark from which to analyze the effects of capital account restrictions. In particular, we investigate the extent to which capital controls effectively insulate countries from – that is, lower the probability of – a currency attack.

### Pros and cons of capital controls

Restricting the international flow of capital essentially means limiting and restricting the purchases and sales of foreign assets by domestic residents and/or domestic assets by foreign residents. Restrictions on capital inflows and/or outflows have a long history as a means of reducing macroeconomic and financial instability. In fact, they were the norm during the Bretton Woods era (1944-1971), and over much of the immediate post-war period they were officially sanctioned by most governments in the large industrial countries and by the International Monetary Fund (IMF). A large literature on the appropriate sequencing of financial liberalization in developing countries suggests that lifting controls on the capital account too soon may destabilize the economy. More recently, with the turbulence in exchange markets following the introduction of generalized floating in the early 1970s, James Tobin

argued that a global tax (“Tobin tax”) on foreign exchange transactions would reduce destabilizing speculation in international financial markets. In the aftermath of the European (1992-1993) and Asian (1997-1998) currency crises, some have renewed calls for some form of capital controls.

However, capital controls themselves may have a destabilizing effect on exchange rates for several reasons. First, restrictions on the international capital account may in fact lead to a net capital outflow and precipitate increased financial instability. The reason is that controls preventing investors from withdrawing capital from a country act like a form of investment irreversibility: by making it more difficult to get capital out in the future, controls may make investors less willing to invest in a country. Second, the imposition of controls is typically correlated with other restrictions on economic activity or with government macroeconomic policies that investors regard as inimical to the economic environment. Thus, imposing capital controls may send a signal of inconsistent and poorly designed government policies that render a country more vulnerable to currency crises. Finally, capital controls may be ineffective and distortionary, leading to economic misallocation and corruption that, in turn, contribute to economic instability.

### **Defining currency crises and capital account restrictions**

In our empirical analysis, we investigate whether legal restrictions on international capital flows are associated with greater currency stability. We employ a comprehensive panel data set of 69 developing economies over the 1975-1997 period. It should be noted that this sample includes both countries that did and did not experience currency crises. Using such a broad control group allows us to draw inferences about the conditions and characteristics distinguishing countries encountering crises and others managing to avoid crises.

For each year in our sample, a country is classified as in one of two states: either undergoing a currency crisis or not undergoing a currency crisis. Our indicator of currency crises is constructed from “large” changes in an index of currency pressure, defined as a (weighted) average of real exchange rate changes and reserve losses. “Large” changes are defined as those where the monthly rate of increase (a) exceeds 5% for any month in the year, as well as (b) exceeds the mean plus two times the country-specific standard deviation. The first criterion ensures that any large depreciation is counted as a currency crisis, and the second criterion attempts to screen out changes that are not large enough in an economic sense relative to the country-specific monthly change of the exchange rate. For each year, we also classify a country as either “restricted” or “liberalized,” reflecting the existence of legal and explicit controls on capital account transactions, as indicated by the IMF’s *Annual Report on Exchange Rate Arrangements and Exchange Restrictions*.

The 69 developing countries in our data set experienced a total of 160 currency crises during the 1975-1997 period, implying a frequency of 12% of the total country-year observations in the sample. Considering successive five-year subperiods of the sample, we find that the frequency of currency crises has not risen over time; in fact, the frequency actually was higher in the late 1980s than in the 1990s, suggesting that the spate of currency crises in the 1990s was not atypical.

We also find that the presence of capital controls is very common; indeed, it is the norm for most developing economies, occurring in approximately 80% of the country-year observations. Furthermore, we found that the incidence of capital controls – while high throughout the sample period – rose noticeably from 1975 through 1989 and then declined in the 1990s, as many countries pushed for greater liberalization in the movement of financial capital.

### **Benchmark results**

To explore the relation between capital controls and currency crises, we begin by establishing a relatively simple benchmark. The first step in developing this benchmark is to measure the frequency of a currency crisis for a given country and year, and to note whether capital controls were in place at the

end of the previous year. We find that countries with restricted capital flows had currency crises about 13% of the time, while those without capital restrictions had currency crises about 8% of the time. This is suggestive *prima facie* evidence that controls may not be effective and, indeed, may increase the likelihood of a currency crisis.

We next estimate (multivariate probit regression) models that allow us to focus on the contribution of capital controls to currency crises while accounting for other macroeconomic and institutional factors that vary across time and country. The factors we account for are common in the empirical currency crisis literature: the ratio of broad money to foreign reserves, domestic credit growth, the ratio of the current account to GDP, real GDP growth, and real exchange rate overvaluation.

Consistent with the findings above, our results indicate a statistically significant and economically meaningful *positive* link between the presence of controls and the likelihood of a currency crisis. After accounting for macroeconomic factors, the likelihood of a currency crisis in developing economies with capital controls in the previous year appears to increase by 5% to 10%.

### **Robustness of the results**

We checked the robustness of the benchmark results in three ways. First, we used a number of alternative measures of balance of payments and exchange rate restrictions to account for variations in the intensity of controls and in their enforcement.

Second, we explored the effect of including additional variables that explain the occurrence of currency crises. One set of variables included contemporaneous and lagged bank crises. Another set included international factors, such as the U.S. long-term interest rate and a measure of regional currency crisis contagion. We also looked at two political variables – the frequency of change in government and the degree of political freedom – that may affect a country's vulnerability to currency crises.

Third, we explored the possibility of causal linkages between currency crises and the decisions of governments to maintain a system of capital controls. For example, countries with excessively expansionary monetary policies are more likely to employ controls on outflows by investors seeking to escape the resulting inflation tax. To account for the possibility that the same economic and political factors that make countries more vulnerable to currency crises also predisposed them to employ capital restrictions, we used a (bivariate probit) technique that controls for the determinants of capital restrictions. The results from these sensitivity tests were uniform and consistent with the benchmark results: The probability of currency crises is higher in the presence of capital controls.

### **Conclusions**

We find that restrictions on international capital flows are associated with a *higher* probability of an exchange rate crisis. This result holds even when taking account of macroeconomic factors that lead to speculative attacks, as well as country-specific political and institutional factors that induce countries to maintain a system of capital controls in the first place. Thus, countries without capital controls appear to have greater exchange rate stability and fewer speculative attacks.

This evidence is supportive, of course, of previous work questioning the effectiveness of capital controls in insulating countries from speculative attacks when their fiscal, monetary, and exchange rate policies appear to be inconsistent. It also indicates that, in the context of the literature on the sequence of economic reform, an environment where the capital account is liberalized does not appear to be more vulnerable to exchange rate instability.

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