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Methodological Pitfalls in Choosing among Currency Regimes

As a prelude to discussing individual currency regimes, one might ask why the choice among competing currency regimes does not become obvious merely by observing the differences in bottom-line economic performance (e.g., inflation, economic growth) across regimes. Although a large number of empirical studies have followed just such a bottom-line approach, their results have been clouded by at least three methodological issues.[1]

Classifying Regimes

First of all, the currency regime that a country or group of countries follows can be analyzed and classified in different ways that matter a lot for the results. More specifically, the literature contains at least three different kinds of regime classifications: (1) a pure de jure classification based entirely on the country's self-description of its regime (e.g., single currency peg, crawling peg, pure float); (2) a mixed de jure-de facto classification, where the self-declared regimes are either adjusted (by the researcher) for apparent anomalies (e.g., floating regimes that display practically no exchange rate volatility) or are aggregated into broader regime categories (e.g., infrequently adjustable pegs, frequently adjustable pegs, not pegged, or fixed, intermediate, floating) based on the observed frequency or size of exchange rate changes; and (3) a pure de facto regime

1. See Edwards and Savastano (1999) for an earlier comprehensive analysis of these methodological issues.

classification, where no account is taken of the self-described regimes and where the assignment of countries into fixed, intermediate, and floating regimes is based solely on the volatility of nominal exchange rates and of international reserves.

For many years, the IMF used de jure classifications to describe the shares of fixed versus floating arrangements among its member countries. Beginning in 1999, however, the IMF switched to a mixed de jure-de facto classification.[2] Outside the official sector, there has been a tendency of late to go more with the de facto regime comparisons.[3] Levy-Yeyati and Sturzenegger (2000) reported that about 50 percent of all cases were classified differently when a pure de facto methodology was substituted for the IMF de jure regime categories.

A few examples are sufficient to show why the regime-sorting methodology can make a difference in how one perceives the attributes of alternative regimes. Ghosh et al. (1997) analyzed inflation and growth performance across (primarily) de jure currency regimes for a sample of 136 countries during the 1960-90 period.[4] In brief, they found that inflation was both lower and more stable under pegged regimes, that economic growth varied only slightly across regimes, and that the volatility of economic growth was higher under pegged regimes.

In contrast, Levy-Yeyati and Sturzenegger (2000), using a pure de facto classification of currency regimes for 159 countries during the 1974-99 period,[5] found that inflation rates were quite similar between fixed rate regimes and pure floaters but were much higher for intermediate regimes, that fixed rates substantially underperformed floating exchange rate regimes as regards average real per capita growth, and that the volatility of economic growth was also worse for exchange rate pegs.[6]

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2. See IMF (2001) and Fischer (2001). The new IMF classification improves on the old by distinguishing hard pegs from other pegs, and by identifying countries that declare managed or independent floats but in practice keep their exchange rates virtually fixed.

3. See Levy-Yeyati and Sturzenegger (2000) and Calvo and Reinhart (2000, 2001).

4. In addition to the broad regime categories of pegged, intermediate, and floating, and of infrequent adjustable peg, frequent adjustable peg, and not pegged, Ghosh et al. (1997) also report results for nine more disaggregated, de jure regime categories, namely, single currency peg, SDR (special drawing right) peg, other published peg, secret basket peg, cooperative system, unclassified float, floating with determinate range, floating with indeterminate range, and pure float.

5. The Levy-Yeyati and Sturzenegger (2000) de facto regime classification is based on three variables: the average of absolute monthly changes in the nominal exchange rate, the standard deviation of monthly percentage changes in the nominal exchange rate, and the average of absolute monthly changes in international reserves (relative to the monetary base). These measures are then used (in conjunction with K-means cluster analysis) to assign country-years to different currency regime categories (fixed, intermediate, and floating).

6. The basic findings of Ghosh et al. (1997) and Levy-Yeyati and Sturzenegger (2000) also hold for the developing-country or emerging-market subgroups of countries.

The same kind of sensitivity (to the regime-sorting methodology) also emerges in analyzing the survival and transition properties of currency regimes. Fischer (2001)—using the IMF's new mixed de jure-de facto classification—presented figures suggesting that there was a dramatic shift in the "bipolar" direction in the 1990s, both for the entire IMF membership and for the subgroup of industrial and emerging-market economies. Whereas 39 percent of IMF member countries had adopted either a "hard peg" or were "floating" in 1991, that (bipolar) share had risen to 66 percent by 1999. Similarly, if one confines attention to the subgroup of 55 industrial and emerging-market economies, the bipolar share of arrangements rose from 34 percent in 1991 to 72 percent in 1999.[7]

In contrast, when using the pure de facto classifications of Levy-Yeyati and Sturzenegger (2001), Masson (2001) found that in the 1990s there were frequent transitions across currency regimes (from fixed rates to intermediate and floating regimes, and from floating to intermediate regimes), and that there was *no* discernible trend toward a "hollowing out" or "bipolar distribution"—be it either for the IMF membership as a whole or for emerging-market economies in particular.

By the same line of argument, when one seeks to interpret the results of empirical studies that examine the impact of de jure currency regimes on, say, monetary independence or on the cushioning of shocks, one does not usually know whether the results are reflecting the true properties of the different (textbook) regimes or simply a comparison among de jure regimes that are very much alike de facto. Nor are de facto regime classifications free of interpretation problems.

Suppose, for example, that Mexico displays a higher volatility of the exchange rate relative to the volatilities of international reserves and interest rates in 1996-2000 than in 1989-93 but still less (relative) exchange rate volatility than Japan or the United States during the period 1996-2000. Is it fair, then, to conclude that Mexico is not "floating" in the most recent period? As was noted by Ortiz (2000), when countries differ in terms of shocks, financial vulnerability, and openness of trade and capital accounts, it is difficult to establish a straightforward benchmark for whether or not they are floating.

Robustness of Regime Comparisons

A second important source of uncertainty is that relatively little is yet known about the robustness of regime comparisons to a host of factors, including (inter alia) the kind of countries included in the sample; the level of detail in the regime classification; the influence of shocks on the

7. Along with Fischer (2001), most researchers define "hard pegs" as currency boards or as arrangements where the country has no national currency.

outcomes; the control variables whose influence is being held constant in the comparisons; and the way that "endogeneity," "contamination," and "peso" problems are handled. Again, a few examples convey the flavor.

Ghosh, Gulde, and Wolf (1998, 2000) found that currency boards yielded much lower average inflation rates than other currency regimes in a large, multicountry sample, but this superior inflation performance disappeared completely when the sample was restricted to countries without any capital controls.[8] Suggestive of the influence of disaggregation, Ghosh et al. (1997) concluded that "pegging" reduces average inflation rates relative to "floating," but they also reported (in a seeming paradox) that "clean floating" had the greatest anti-inflationary effect among the nine currency regimes considered.

Although a few studies do make some accommodation for the possibility that large shocks could be influencing the outcome variables and/or the de facto regime categories, many others do not. Likewise, what is being held constant to isolate the independent effect of the currency regime on economic performance also differs, often markedly, from study to study. Kuttner and Posen (2001), for example, find that the effects of the currency regime are quite different when one controls for the domestic monetary framework (i.e., the degree of central bank autonomy and the presence or absence of an announced domestic monetary or inflation target) than when one does not.

Nor are the estimated effects of the currency regime immune from the kinds of econometric problems that often plague other studies attempting to isolate the effects of government policies. Three such problems deserve explicit mention.

Because the decision to adopt a particular kind of currency regime and/or the ability to sustain it can be influenced by some bottom-line outcomes (e.g., countries with low inflation are apt to be more successful at sustaining a fixed rate), there is a potential simultaneity bias afoot if the currency regime is treated as an exogenous variable. Although some studies have confronted this endogeneity problem directly by using the "estimated" currency regime in the regressions for inflation and for economic growth, these efforts are typically much more basic than in the empirical literature on the choice of currency regime itself; contrast, for example, the long list of determinants of currency regime choice (including political factors) in Poirson (2001) with the more truncated treatment in Ghosh et al. (1997).

A second potential problem is that regime comparisons can be "contaminated" if the collapse of one regime shows up in the outcomes of the successor regime. For example, if an adjustable peg system collapses

8. Likewise, a recent IMF (2001) study found that the conclusion of Ghosh et al. (1997) that pegging was associated with lower average inflation rates could not be replicated using an emerging-markets-only sample for a more recent time period.

in a large devaluation and is then followed by a float, the resulting increase in inflation could be inappropriately assigned to the "effects" of floating. Although such contamination effects can presumably be reduced by excluding from the sample the observations directly surrounding regime shifts, no one really knows whether such a correction accounts adequately for the effects of currency crashes, particularly those effects that are relatively longer lived.

Third, a so-called peso problem can arise if the sample period does not include instances of the kind of severe economic stress than can bring down a currency regime. In this case, the currency regime could be less resilient and could generate different bottom-line outcomes than suggested by the in-sample observations.

Constraints on Choosing a Regime

Yet a third methodological problem concerns the constraints upon regime choice. Even when empirical results suggest that one type of currency regime is associated with better bottom-line performance than others, there is no guarantee that a particular country can adopt that regime. For example, if a country does not have adequate international reserves to back most of its base money, it will not have the option of operating a currency board even if it is attracted by the monetary discipline of that regime. Frankel (1999) and Williamson (1995) go farther and argue that a currency board is unlikely to be successful without the solid fundamentals of the rule of law, fiscal discipline, and a strong and well-supervised financial system.

Equally to the point, certain (de facto) currency regime options that were available in the past (in the 1950s and 1960s) may no longer be available to emerging-market economies. This applies particularly to the relationship between emerging-market currency regimes and Group of Three (G-3) currency regimes. As long as the G-3 currencies (dollar, yen, and euro) continue to "float" with regard to one another, emerging economies cannot truly be "fixed" with respect to all the key currencies—no matter what regime choice they make. Indeed, some have argued that any significant strengthening of the international financial architecture should begin with an effort to bring more stability to the G-3 currencies —say, via a system of target zones.[9]

9. The dissenting views in the Council on Foreign Relations (1999) task force report on the future international financial architecture take this position. See Bergsten and Henning (1996) on the key features of such a G-3 target zone, along with their interpretation of the counterfactual (i.e., how such a G-3 target zone would have fared in the past had it been in operation).

Suffice it to say that I do not share the view that a regime shift by the G-3 from managed floating to target zones is likely or desirable for the foreseeable future.[10] Nor is it at all clear that a G-3 target zone would bring net benefits to developing countries, because it would probably involve a trade-off between lower G-3 exchange rate volatility and higher G-3 interest rate volatility. An analysis of the implications of such a G-3 currency regime for emerging-market economies has recently been undertaken by Reinhart and Reinhart (2001). Although their results differ across individual countries and regional groups (depending, inter alia, on trade and debt structures), their overall conclusion is worth highlighting: "From the perspective of emerging market economies, the case for limiting G-3 exchange rate volatility is not proven" (p. 35). In the chapters that follow, I therefore assume that the operating environment faced by emerging economies remains one where the G-3 currencies float with respect to one another.

Concluding Note

The practical upshot of these methodological pitfalls and constraints is that there is no smoking gun that makes it obvious which currency regime would be superior for emerging-market economies heavily involved with private capital markets. It is a matter of weighing trade-offs, sifting through sometimes conflicting empirical findings, evaluating which attributes of different regimes are likely to be most important in the period ahead, identifying the key constraints in the operating environment, and gauging which past institutional weaknesses and market failures can be changed for the better and which cannot. On that basis, I see managed floating plus winning the horserace.

10. My reasons for rejecting a "loud" target zone scheme for the G-3 countries include: the conclusion from simulation studies that an exchange-rate-targeting rule for monetary policy would produce worse bottom-line growth and inflation outcomes for the G-3 than domestically oriented monetary policy rules (see Bryant, Hooper, and Mann 1993); the limitations of fiscal policy (particularly its inflexibility relative to monetary policy) for achieving internal balance; the spotty track record of sterilized exchange market intervention in influencing G-3 exchange rates; and the lack of evidence supporting a "honeymoon effect" for earlier target zone or adjustable peg regimes. See Goldstein (1995) for an elaboration of these arguments. Crockett (2001) is also skeptical about the desirability of a G-3 target zone and doubts whether the dollar's considerable appreciation (vis-à-vis the euro) during the 1995-2000 period could have been accommodated in such a framework.