

Dollarization

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The number of independent countries has almost tripled since World War II: in 1946 there were 76 independent countries; today there are 193. Until recently, most countries had their own currencies. Hence, the expansion of the number of countries led to a proliferation of the number of currencies. More recently, however, the identification of currencies with countries has weakened, and the discussion has shifted toward one of desirable forms and sizes of currency unions.

Roughly 60 small countries or territories have for some time been members of currency unions or have used a large country's money. Examples are the 15-member African Financial Community (CFA) franc zone in Africa, the seven-member Eastern Caribbean Currency Area, the use of the U.S. dollar by Panama and several smaller countries, the use of the Belgian franc by Luxembourg, the use of the Swiss franc by Liechtenstein, and the use of the Israeli shekel in the West Bank and Gaza.

In the future, currency unions will surely be more prevalent among large countries, as is clear from the recently formed union of the 11 European countries that use the euro. Greece will join soon, and several other countries may sign on later, although Denmark has said no, and the debate in the United Kingdom is intense. Dollarization has been contemplated by several countries in Latin America, including Argentina, Peru, and much of Central America. Argentina went part of the way toward dollarization through its adoption of a currency board linked to the U.S. dollar in 1991. Currency boards that lock local currencies to the dollar or the euro also exist in Hong Kong, Estonia, Bulgaria, and Lithuania. In 2000, Ecuador adopted a full dollarization, and El Salvador announced its determination to follow the same course.

We seek in our analysis to understand the forces that favor and oppose currency unions; that is, we extend the classic analysis of optimum currency areas from Robert A. Mundell (1961). One consideration, not touched on in Mundell's economic analysis, is that individual currencies are sometimes valued simply out of national pride. One would have expected these nationalistic concerns to be more intense for language than for money, yet most countries willingly use the language of another country, typically the one of a former colonial ruler. Given this acceptance of transplanted language, it is surprising how often people reject currency unions (which sometimes involve the use of another country's currency) simply on the grounds that important countries are supposed to have their own money.

From an economic standpoint, the strongest argument that Mundell identified for individual money is that it allowed a country to pursue its own monetary policy. In theory, if the country operates with a flexible exchange rate, the monetary authority can design a countercyclical policy that responds optimally to its own economic disturbances. In contrast, under a fixed exchange rate, monetary policy has to be subordinated to the maintenance of the exchange rate. Fixed-rate regimes include a peg to another currency, which may or may not be permanent, and the more serious commitments represented by currency boards and dollarizations (by which we mean one country's use of another country's money, which may not be the U.S. dollar).

In Mundell's framework, the main force that favors a common currency is the transactions-cost benefit. The use of the same money facilitates trade in goods and services and also in financial exchanges. The expansion of world trade, or globalization, has made this consideration increasingly important.

Globalization and two other factors seem to explain why the world has been moving away from the doctrine of one-country/one-currency and toward multi-country currency unions. The first additional factor is the already noted

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dramatic increase in the number of independent countries. For the many small, independent countries that have been created since the end of World War II, the costs in terms of forgone trade of maintaining one's own currency are unacceptably high.

The second additional consideration is that the benefit that economists and central bankers attribute to independent monetary policy has diminished as we all have learned to value price stability over active macroeconomic stabilization. In the 1960's and 1970's, there was much greater confidence that monetary expansion and inflation, either in general or in the form of well-tailored countercyclical policy, would convey benefits in terms of higher economic growth and lower unemployment. Now there is widespread belief that monetary authorities should concentrate on providing a stable nominal framework and otherwise staying out of the way.

I. The Pros and Cons of Dollarization

In two recent papers (Alesina and Barro, 2000; Alesina et al., 2000a) we have examined theoretically and empirically the determinants of optimal currency areas. In our formal model, we begin with the effect of currency unification in reducing the transaction costs of trade. Recent results by Andrew K. Rose (2000), who examines existing currency unions, suggest that the benefits of dollarization for trade may be large. His findings indicate that the sharing of a common currency, holding constant an array of other variables, increases the volume of trade dramatically, by a factor of 2–3. Although this effect seems large, the magnitude accords with other empirical results that have identified a strong home bias in trade (see John McCallum, 1995; John F. Helliwell, 1998). In fact, borders and other elements identified in the trade-gravity literature seem to matter a lot for trade and financial integration. To the extent that crossing a border implies, among other things, changing currencies, a currency union may have significant effects by reducing this large home bias.

The Rose program of empirical research on existing currency unions has sometimes been criticized for focusing on small and therefore nonrepresentative economies. Of course, this

focus is dictated by the available data. In the future, when the euro and other currency unions involving large countries have been around for a while, the data will be much better. However, even at present, one can regard the existing unions as providing very interesting experiments about the effects of alternative monetary systems. Consider, as a contrast, the plight of researchers on school choice, who eagerly examine the data for a few thousand students who are the subject of short-lived experimental programs. In the case of the small currency-union economies, we are effectively receiving experimental data for hundreds of thousands of people who have submitted themselves to an economic experiment about the long-term effect of alternative monetary systems.

Our formal analysis also considers that dollarization commits clients to a stable monetary policy, assuming a judicious choice of the anchor currency, which might be the U.S. dollar. Specifically, if an inflation-prone country adopts the currency of a credible anchor, it eliminates the inflation-bias problem of discretionary monetary policy that was emphasized by Barro and David B. Gordon (1983). This bias may stem from two sources: attempts to overstimulate the economy on average and incentives to monetize budget deficits and debts.

For many developing countries, dollarization provides a much better commitment device than alternative forms of fixed exchange rates. The adoption of another country's money (or the joining of a currency union with a new form of money) makes the costs of "turning back" very high. Hence, these regimes are much more credible than customary (typically ephemeral) promises to peg the exchange rate. Many countries also lack the internal discipline and institutions that can provide a firm domestic commitment to a monetary policy that is dedicated to price stability.

In the current world, with relatively low inflation, some may argue that the commitment problem has already been solved and, therefore, is not a valid reason to adopt a currency union. However, this argument is misleading for two reasons. First, in many cases, inflation came down thanks to some sort of nominal anchor mechanism, such as a temporarily pegged exchange rate, implementation of a currency board, or the constraints from "convergence cri-

teria" that were required before a country could join the European Monetary Union. Second, no one can be sure that the inflationary decades of the 1970's and 1980's are an isolated historical event, never to be repeated, especially in developing countries. Therefore, the commitment provided by dollarization remains valuable.

As already mentioned, one cost to a country from giving up its own currency is the elimination of an independent monetary policy that can be used to help stabilize the business cycle. Guillermo Calvo and Carmen Reinhart (2000), among others, have argued that this benefit is largely illusory. However, if we assume that the domestic monetary authority can commit to a useful countercyclical policy, then the loss of an independent policy will represent a true cost.

The cost from losing an independent monetary policy will be higher the less correlated is the business cycle of the client country with that of the anchor. We show in our formal model that two types of co-movements matter for this calculation. One involves movements of output, and the other involves changes in relative prices. With respect to output, if the anchor engages in effective countercyclical monetary policy based on its own economic conditions, then this policy will be useful for clients only to the extent that the countries' outputs covary. To the extent that outputs move independently, the anchor's actions will create unnecessary variability in the client's inflation rate. With respect to relative prices, the point is that price stability for the anchor translates into price stability for clients only to the extent that relative prices of the countries do not change. For example, if the Federal Reserve maintains a zero inflation rate in the United States, then the inflation rate in Argentina will not be zero, but will correspond to the change in relative prices (or real exchange rates) between the two countries.

Another consideration is that currency union may (but does not necessarily) increase the integration of country members and thereby create more synchronized movements of output and smaller movements of relative prices. In this case, currency union will turn out to be more favorable than one would estimate based on the co-movements that arise in the context of independent monetary regimes. Rose and Charles Engel (2000) provide a little empirical

evidence to support the idea that currency union increases the relevant co-movements.

Another cost of dollarization is the loss of seignorage for the client country. However, this loss is not a social waste, but rather a redistribution between the countries. In principle, the anchor could return the seignorage to the client. In fact, the allocation of seignorage can be part of compensation schemes between anchors and clients.

To understand the role of compensation, it is easiest to begin with the benchmark case in which the anchor country returns all the seignorage revenue to the dollarizing country. In this case, the anchor has no incentive to tailor its monetary policy to the interests of its clients. However, by allowing payments from the clients to the anchor, mutually beneficial transactions may occur. That is, a client may compensate the anchor for modifications of the anchor's monetary policy that reflect the client's interests. The allocation of seignorage may be part of these compensation schemes, and such schemes would be predicted to arise in an environment of competing anchor currencies. That is, the dollar or the euro may offer more or less favorable deals to potential clients, such as Brazil or South Africa, that are otherwise close to the margin with respect to their preferences for the two currencies.

From the point of view of the anchor, is dollarization beneficial or costly? In principle, it should not matter, since the anchor either does not change its policy, or it is compensated for doing so (in a competitive way if the world features an array of similarly attractive potential anchor currencies). In addition, the anchor may obtain the benefits of the reduction of trade costs.

From a political-economy perspective, if the anchor becomes the provider of the money for a large regional union, then the leader country may be worried about international pressures on its monetary policy. These pressures may be particularly strong if the central bank of the anchor country also assumes the role of the lender of last resort for its clients, but this role need not be tied to the provision of monetary policy.

II. What Currency Areas?

Based upon our previous discussion, the countries that should be more likely to abandon

their currencies are those that exhibit the following characteristics:

- (i) a history of high and variable inflation, which we take as an indicator of a lack of domestic commitment ability;
- (ii) a large actual or potential volume of international trade, particularly with the anchor country;
- (iii) business cycles that covary substantially with a potential anchor;
- (iv) reasonably stable relative prices (gauged by real exchange rates) with respect to a potential anchor.

In ongoing empirical work (see Alesina et al., 2000a), we consider the U.S. dollar, the euro, and the yen as three potential anchors. Then we examine which other countries would profit the most from the adoption of one of these currencies. We computed co-movements of output and prices between the three potential anchors and all the countries in the world. We also examined bilateral trade patterns, and we looked at the histories of inflation.

We found first that the yen does not look appealing as a potential anchor. We reach this conclusion partly because few potential clients exhibit a high degree of co-movement with Japan. Also, Japan is relatively closed compared with the United States and the euro area, and the imports of Japan are highly dispersed. Therefore, few potential clients have a high share of their exports to Japan. With the exception of Indonesia, even East Asian countries do not display a high degree of co-movement with Japan.

Our second finding is that the history of inflation in Central and South America should make many of these countries interested in dollarization. For Central America and Mexico, there is little doubt that the U.S. dollar is the best anchor currency. However, the pattern is less clear for South America. This region trades heavily with Europe, and in many cases the co-movements are as high with the euro-area countries as with the United States. For Argentina, for instance, it is not clear that the U.S. dollar dominates the euro as an anchor currency. However, for Ecuador and El Salvador, we do find that the U.S. dollar is the best choice.

Our third conclusion is that Africa and Eastern Europe are potential clients of the euro. Co-movements of output and prices among these countries are high, and so are trade shares.

In summary, we found that there seems to be a fairly clear dollar area involving Canada, Mexico, most of Central America, and parts of South America. The Philippines, Hong Kong, and Singapore also belong. The euro area includes all of Western Europe and most of Africa. There does not seem to be a yen area beyond Japan, except perhaps for Indonesia. There are also several countries that do not appear to need anchors. This group comprises countries with low inflation that engage in little international trade (and seem even potentially to have little trading prospects with the three anchor countries).

III. Conclusions

The proliferation of many small countries, the increasing volume of world commerce in goods and services and in financial exchanges, and the renewed emphasis on price stability are formidable forces leading toward dollarization. Therefore, we anticipate that the next decades will involve a transition toward a world in which the number of currencies is much less than the number of countries.

Increases in economic integration and expansions of currency unions also have implications for the benefits of political unions. If countries are linked more by trade and common currency, then the benefits from having a larger political union (i.e., a larger-size country) diminish.¹ Thus, if a country joins a monetary union, it may become easier for one of its regions to secede. The reason is that the benefits from free trade and common currency are no longer linked to the political union. To some extent, Europe is already a case in point. Together with the progress of economic integration and monetary unification, regionalism and the demand for regional political autonomy have shown renewed vigor. We submit that this coincidence of events is not a coincidence.

¹ See Alesina et al. (2000b) on this point.

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