

Dollarization: A Scorecard

ROBERTO CHANG

The author is an associate professor at Rutgers University. At the time this article was written, he was a research officer in the macropolicy section of the Atlanta Fed's research department. He thanks Marco Espinosa, Frank King, Will Roberds, George Selgin, and Ellis Tallman for useful comments and suggestions and Michael Chriszt for valuable assistance.

IN JANUARY OF THIS YEAR, JAMIL MAHUAD, THEN PRESIDENT OF ECUADOR, STARTLED HIS COMPATRIOTS BY PROPOSING TO ELIMINATE THE NATIONAL CURRENCY, THE SUCRE. INSTEAD, MAHUAD ADVANCED, THE U.S. DOLLAR WOULD REPLACE THE SUCRE FOR ALL PURPOSES. SUCH A CHANGE WOULD STABILIZE ECUADOR'S SINKING ECONOMY AFTER A DISMAL 1999

and help return the country to growth and prosperity. Mahuad's announcement was received with skepticism, and a popular uprising forced him out of office a week later. But the succeeding government has actually implemented Mahuad's proposal and recently announced that U.S. dollars will have completely replaced the sucre by September 2000.

The question remains as to whether the Ecuadorian plan will be successful and, more generally, whether other countries will follow Ecuador's lead. But one thing is clear: proposals to replace the domestic currency with the U.S. dollar, or to "dollarize" the economy, have taken center stage in Latin America and other developing regions. The idea is the subject of hot debates in academic and policy circles. And where candidates stand with respect to dollarization has become a key factor in several political contests.

The ascent of dollarization from being a relatively neglected issue to the role of powerful economic medicine is mysterious and fascinating. It implies, for example, that as monetary policy in advanced economies has steadily gained respect, developing nations have come to believe it is better to get rid of their own currencies. To illustrate why,

this article will discuss the currently fashionable proposals for dollarization in Latin America and other developing regions.

After describing what dollarization is about, the article places special emphasis on identifying and analyzing various arguments for and against dollarization in the light of existing economic theory and evidence. By embracing dollarization, a developing country would accept at least three costly consequences:

- Its government would give up the revenue it enjoys from creating money.
- Its central bank would no longer serve as a lender of last resort to domestic banks.
- It would no longer control domestic monetary policy.

On the other side of the ledger, dollarization may result in at least two benefits:

- Dollarization may lower the country's cost of foreign credit.
- It may enhance the credibility of government policy.

Are the benefits from dollarization worth its costs? The answer is unclear. Comparing the relative significance of the costs and benefits listed involves many difficulties. The article discusses these issues and, as it moves down the list, it finds that measurement problems become considerably larger. The conclusion is that, remarkably, the popular belief that dollarization is a desirable reform has been reached in spite of widespread uncertainty about its economic benefits.

Official Dollarization: What It Is and What It Is Not

Most nations have their own currencies, but in a number of countries the U.S. dollar is also used widely as a means of payment, store of value, and unit of account. This phenomenon, which may be called unofficial dollarization, became manifest in the 1980s in some economies experiencing rapid inflation. As inflation rates in Mexico, Israel, Peru, and other countries reached triple digits, domestic residents learned to protect themselves against the loss of purchasing power of their national currencies by switching to

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the dollar. Over time, the governments of these countries validated unofficial dollarization by allowing residents to open bank accounts denominated in dollars and by including dollars in circulation and dollar deposits in their own monetary statistics.

In spite of the growing importance of dollarization, attention to it remained confined to a relatively small and mostly academic literature.¹ This state of affairs changed, however, with the sequence of crises in emerging markets that started with the Mexican one in 1994–95 and continued with the 1997–98 crises in Asia, Russia, and Brazil. The observation that dramatic and costly devaluations of national currencies were common to most crises led to a renewed search for alternative exchange rate arrangements. Official dollarization emerged then as a feasible and intriguing possibility. But its popularity ballooned after President Carlos Menem of Argentina announced at the beginning of 1999 that he was seriously considering a dollarization plan.

What would official dollarization actually involve for Argentina, Ecuador, and similar developing coun-

tries? In contrast to many other economic reforms, recent dollarization proposals are very simple. Essentially, two exchanges would have to be enacted:

- The domestic monetary base, that is, all local currency (coins and notes) in circulation plus the vault cash reserves of banks, would be redeemed for U.S. dollar bills at some predetermined conversion rate and then destroyed. In Ecuador, for example, the central bank is currently paying one dollar for each twenty-five-thousand-sucre coin and note presented to it.
- All contracts denominated in local currency would be transformed into contracts in U.S. dollars, also at predetermined conversion rates (which may, but do not necessarily, equal the rate for coins and bills). In particular, local currency bank deposits would become deposits denominated in and payable in dollars.

Three features of this scheme deserve particular emphasis. First, dollarization would be unilateral. Ecuador did not ask the U.S. government for permission to implement its dollarization scheme, nor did it have to. Second, and as a consequence, under this plan a government would give up any power to conduct independent monetary policy and would implicitly accept the monetary policy decisions of the U.S. Federal Reserve. Ecuador's decision to dollarize gave it neither a voice nor a vote in the Federal Open Market Committee. Third, the local currency would be completely replaced by the dollar, not just by a dollar equivalent.

These aspects are noteworthy because they set dollarization apart from some alternatives.² For instance, instead of pursuing dollarization unilaterally, a developing country could try to negotiate a Treaty of Monetary Association with the United States. Such a treaty would entitle the dollarizing country to some transfers from the U.S. government (and, ultimately, from the U.S. taxpayer) as compensation for the loss of monetary policy independence. A more encompassing alternative would be to negotiate a monetary union similar to the current European Monetary System. In a monetary union, the United States and the developing country would agree to have a common currency, which could be the U.S. dollar, and a common monetary authority. Hence the developing country would presumably gain some control over monetary policy decisions.

It has become evident that neither a monetary association treaty nor a monetary union would be feasible without prolonged and complex negotiations between the U.S. government and the developing countries involved. As a consequence, some developing nations,

led by Argentina, have moved almost all the way toward dollarization and established a currency board system. In a “pure” currency board, the central bank stands ready to buy or sell U.S. dollars for domestic currency at a fixed exchange rate; in addition, the currency board does not issue domestic currency in exchange for local currency assets. This commitment is, in turn, guaranteed to be permanent because the amount of domestic currency in circulation is fully backed by U.S. dollars held by the central bank. This arrangement does not eliminate the local currency but makes it, in principle, completely equivalent to the U.S. dollar. That would indeed be the outcome in Argentina if holders of Argentinean pesos were 100 percent sure that the central bank of Argentina would always be there to pay one dollar for each peso in circulation.³

If in fact a government can make the national currency a perfect substitute for the U.S. dollar by establishing a currency board, what are the further gains from official dollarization? On the other hand, if dollarizing the economy is so straightforward, why not just do it? The answer to both questions, of course, is that dollarization may have costs as well as benefits, to which the discussion now turns.

The Seigniorage Question

A country engaging in official dollarization would naturally have to destroy its national currency. This fact has been used by some to argue against dollarization on the basis of national pride, symbols, traditions, and the like. While such arguments can be politically effective, their economic significance is virtually impossible to evaluate. Perhaps as a consequence, economists have avoided debating these political factors. Instead, economic theory identifies other reasons why it is costly for a nation to eliminate its national currency. Some of the losses can be readily quantified, and they turn out to be significant in practice.

The first source of losses from dollarization is what is called seigniorage. The right to create domestic currency is valuable for a government because newly printed currency can be issued in exchange for goods and services. For example, newly printed pesos, which cost essentially nothing to produce, allow the Bank of Mexico to pay for purchases of goods or for foreign exchange as well as

to grant credits to domestic banks. This is what economists mean when they say that a government collects revenue when it prints domestic currency or, in other words, that it extracts seigniorage revenues from the economy.

A dollarizing country would give up its seigniorage revenues, which would accrue instead to the U.S. government. For developing countries, the loss can be large. To illustrate, the significance of annual seigniorage revenues has been calculated for Argentina, Brazil, and Mexico, over the 1993–97 period for Argentina and Mexico and 1995–97 for Brazil (the difference being that for Brazil previous years are abnormally turbulent.)⁴

Chart 1 displays the actual flow of revenue from printing domestic currency, given by the increase in the domestic monetary base in a year, both in terms of U.S. dollars and as a percentage of the country’s gross national product (GDP). Accordingly, the chart shows that seigniorage revenue per year has been about one-third of 1 percent of GDP for Argentina, or U.S.\$1.2 billion per year. In contrast, seigniorage revenues in Brazil have been about 1.3 percent of GDP, or U.S.\$10 billion per year. In other words, after correcting for the relative size of the Argentinean and the Brazilian economies, the seigniorage transfer from Brazil to the United States under dollarization would be more than three times larger than the corresponding transfer from Argentina to the United States. These figures explain, perhaps, why the dollarization idea has been clearly more popular in Argentina than in Brazil. Mexico turns out to be a middle case: annual seigniorage revenues amount to nine-tenths of 1 percent of GDP, about U.S.\$3.8 billion.

The different magnitudes of seigniorage in Argentina, Brazil, and Mexico reflect the different degrees to which their governments have relied on money creation to finance their budgets. Chart 2 shows that money creation is only 1.7 percent of total government revenue in Argentina. Therefore losing seigniorage would not require a major fiscal adjustment in that country. But in Brazil, domestic money creation is responsible for almost 9 percent of government revenue. As a consequence, dollarization would require Brazil to find new and significant sources of tax revenues or to drastically reduce government expenditures. While the fiscal effects

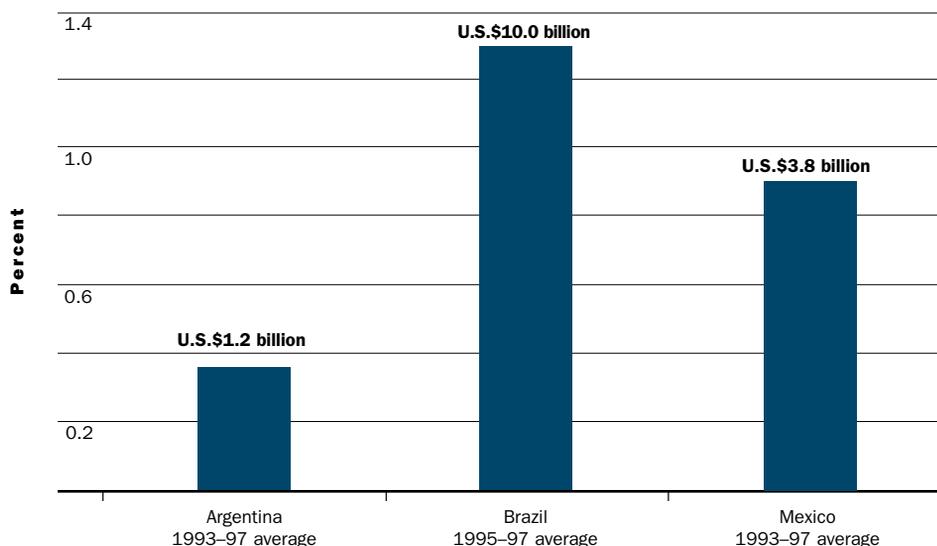
1. For a taste of the literature prior to the 1994 Mexico crisis, see Chang (1994) and the references therein.

2. See Berg and Borenzstein (2000) for a more detailed discussion.

3. Argentina’s system, called the Convertibility Law, departs from a pure currency board in a number of ways. For example, up to one-third of the central bank’s reserves that back base money can be held in the form of Argentinean government bonds. For a full discussion, see Hanke and Schuler (1999), who also argue for a move toward official dollarization.

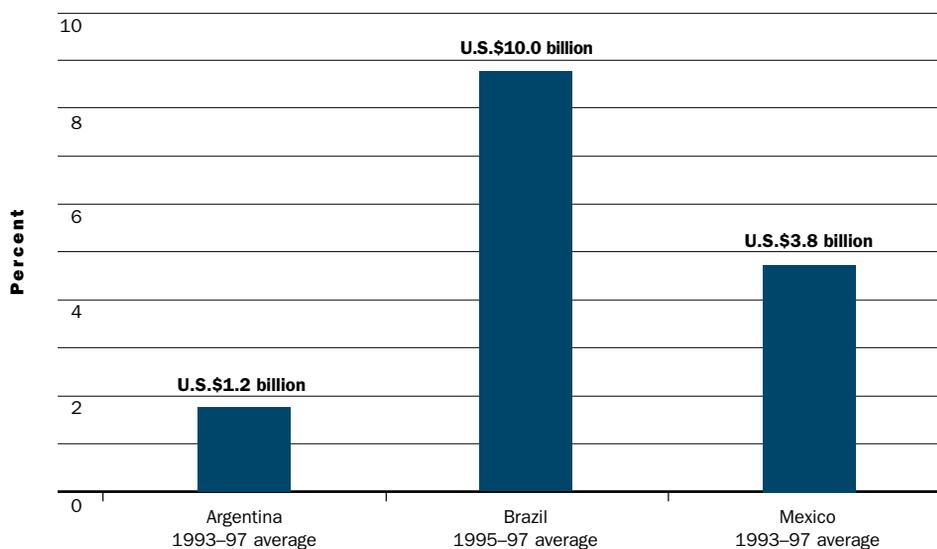
4. The method for calculating seigniorage revenues follows Fischer (1982).

CHART 1 Flow of Revenue from Seigniorage as a Percentage of GDP



Source: International Financial Statistics

CHART 2 Flow of Revenue from Seigniorage as a Percentage of Total Government Revenue



Source: International Financial Statistics

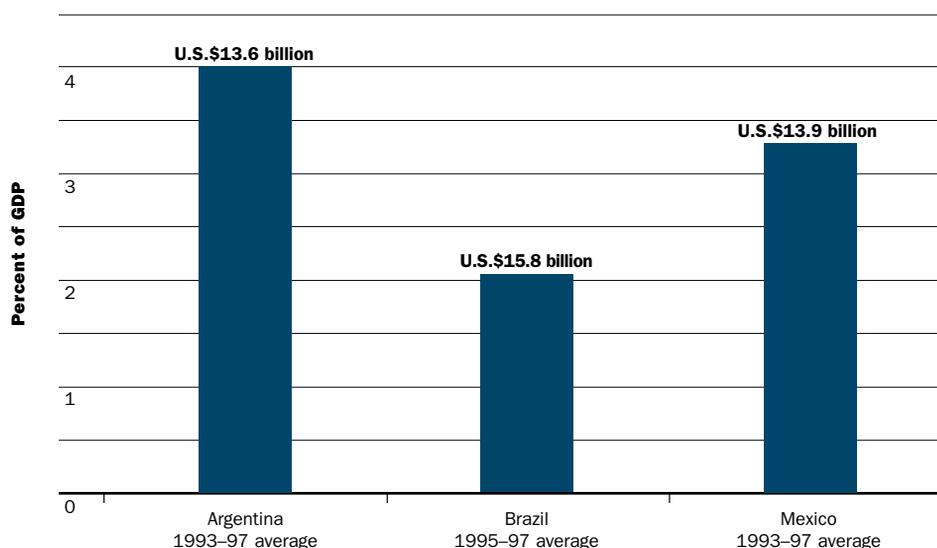
would not be as large for Mexico, seigniorage is about 4.7 percent of total government revenue.

The numbers just quoted refer to what is called flow seigniorage, the amount of resources that Argentina, Brazil, and Mexico would have to transfer to the United States each year in order to obtain dollar bills. In addition to these annual transfers, dollarization would require exchanging the existing amounts of domestic currency in circulation for U.S. dollars, entailing an additional, one-time startup cost equal to the dollar value of the domestic currency in circulation.

Chart 3 shows the magnitude of this startup cost. For the three countries under analysis, the cost is substantial, between 2 percent and 4 percent of GDP. The relatively smaller cost for Brazil reflects a smaller demand for domestic currency, which is natural because hyperinflation was perceived as a major threat until very recently. Note that the cost, when expressed in absolute dollar amounts, is very similar in the three cases (U.S.\$14 billion–15 billion).

The conclusion is that dollarization would imply a fairly large seigniorage transfer from a dollarizing country to the United States. For Argentina, the

CHART 3 Cost of Replacing Domestic Currency in Circulation with U.S. Dollars



Source: International Financial Statistics

transfer would be paid mostly up front while for Brazil the transfer would be paid mostly over time. Mexico seems to be an intermediate case. The amounts involved are clearly identifiable and relatively straightforward to calculate.⁵

Even the most ardent proponents of dollarization do admit that the loss of seigniorage is an important drawback. To mitigate the effects, it has been suggested that a dollarizing nation should engage in negotiations with the United States to recover some of the seigniorage revenue involved. But it is fair to say that there is little reason to be optimistic about prospects for such negotiations in the short run.

There is an important caveat. The discussion has assumed, implicitly, that the loss of seigniorage revenue is costly. That assumption is usually accepted even by dollarization proponents, but is a debatable one. In particular, it has been argued that the loss of seigniorage may be beneficial if it forces an otherwise irresponsible government to choose sound policies. This key contention is taken up later in this article. For the time being, it suffices to note that the loss of seigniorage would be costly even if the government were completely responsible. In such a case, however, the calculation of the seigniorage lost with dollarization may have to be based on the

inflation rate that would be chosen by such a government, which may be lower than past inflation (see Chang and Velasco 2000a).

The Lender of Last Resort

A second issue with official dollarization is that a country's central bank would no longer serve as the lender of last resort to the domestic banking system. A lender of last resort is an institution that stands ready to provide credit to banks in the event that they experience a sudden demand for liquidity, as when bank runs occur. Such an institution is crucial in a system of banks with fractional reserves in order to reassure bank depositors and short-term creditors that their claims on the banks will be honored if they attempt to liquidate them. If there is no lender of last resort, confidence crises and bank runs become more likely and more damaging if they occur.⁶

In most countries, the role of lender of last resort has traditionally been played by the central bank. This role is natural because the central bank can create credit quickly and at a negligible cost simply by issuing domestic currency. Since the ability to print currency would disappear under official dollarization, the central bank would no longer be able to serve as the lender of last resort.

5. Incidentally, the amounts in Chart 3 may be taken as not only the startup costs of dollarization but also the potential profit of reintroducing a national currency from the viewpoint of a government in a dollarized economy. In other words, these amounts are a measure of the temptation to renege on the implicit promise that dollarization is a permanent reform.

6. U.S. history, in fact, provides a good example of the importance of the lender of last resort. Miron (1986) and others have documented that bank panics became less frequent after the establishment of the Federal Reserve.

The associated cost is hard to quantify, however. For one thing, the cost depends on what system dollarization is replacing. In Argentina, for instance, dollarization would replace a currency board system. But, as shown formally by Chang and Velasco (2000c), a central bank cannot effectively act as a lender of last resort if it is fixing the exchange rate, as in a currency board system. In other words, moving from a currency board to dollarization would not change the ability of the central bank to act as a lender of last resort: that ability does not exist in the first place. On the other hand, in countries with flexible exchange rates, such as Brazil and Mexico, the central bank can act as a lender of last resort.

Dollarization may therefore be more costly in these cases because of the need to implement an alternative arrangement.

In addition, dollarization (or, for that matter, a currency board or a fixed exchange rate system) would not imply the complete absence of a lender of last resort, only that the central bank cannot perform that role. There are a

number of alternatives open to a dollarized country. The government could set aside a liquid fund to be lent to banks in a crisis. Another possibility would be for the government to secure lines of credit from abroad that could be drawn upon in the event, and only in the event, of a banking crisis. Argentina, in fact, has been implementing the latter strategy since the Tequila Crisis of 1995. However, both alternatives are more costly than having the central bank serve as the lender of last resort. And there is considerable debate about how to calculate that cost in practice.

Argentina provides an excellent illustration of these points. In 1995, following the Mexican crisis of December 1994, the Argentinean banking system came under intense pressure; in particular, there was a massive liquidation of domestic deposits, caused by growing expectations of bank failures. Because Argentina was committed to a currency board system, the central bank could not assist domestic banks with emergency credit. In other words, the rules of the currency board did not then (and do not now) allow the central bank to act freely as a lender of last resort.

In 1995 the situation was saved thanks to a rescue package orchestrated by the International Monetary

Fund and the World Bank. After that scare, the Argentinean government secured lines of credit from foreign private banks to be used in case of an emergency. This arrangement clearly helps replace the lender of last resort, but it is not free. Argentina must pay a premium for what is essentially an option to borrow. In addition, it is not clear whether the credit lines are large enough to replace what the central bank might be able to do as a lender of last resort. In particular, in a crisis, banks may need enough liquidity assistance to meet all of their demandable obligations, as stressed by Chang and Velasco (2000c). To be effective, the Argentinean lines of credit may therefore need to be much larger than they actually are.

It may be instructive to attempt at least a very rough calculation of the cost of the Argentinean strategy. In 1996 the Argentinean private line of credit reached U.S.\$6.1 billion, at a cost of about U.S.\$18 million a year—about 0.3 percent. Assuming that this rate remains the same, the total cost of the strategy would depend on how large a credit line is “enough.” At the end of 1999, Argentina’s M2 (the sum of its banking system monetary and quasimoney liabilities) was U.S.\$88.2 billion. Since it had U.S.\$26.5 billion in international reserves, the banking system’s net liquid liabilities were arguably as large as U.S.\$88.2 billion – U.S.\$26.5 billion = U.S.\$51.7 billion. At 0.3 percent a year, a line of credit large enough to cover that amount in whole would cost somewhat more than U.S.\$150 million per year. While this is not a negligible figure, it is only a small fraction of Argentina’s GDP.

Of course, the calculation just performed could be refined in several ways. However, the point is twofold. First, replacing the domestic central bank with an Argentina-style line-of-credit approach would be a negative consequence of dollarization. Second, the cost can be calculated explicitly. For Argentina, the cost turns out to be relatively minor, and it is much smaller than that associated with the loss of seigniorage.

To end the discussion of the Argentinean strategy, it should be noted that significant enforcement questions remain unsettled. Will the foreign banks involved be reliable enough to deliver on their contractual obligations in a time of crisis instead of defaulting? Who would enforce the contracts between Argentina and the creditor banks? And who would ensure that the creditors themselves have access to the necessary liquidity?

Losing Independent Monetary Policy

It is widely accepted that, in modern economies, conditions in the domestic market for money are crucial determinants of macroeconomic outcomes.

Under dollarization a government would give up any power to conduct independent monetary policy and would implicitly accept the monetary policy decisions of the U.S. Federal Reserve.

There is debate about what concept of “money” is relevant for analysis. However, whatever that concept is, it must include at least the monetary base, that is, local currency in circulation and in bank vaults. By controlling the monetary base, a central bank affects the domestic market for money and, consequently, may have an impact on real (inflation-adjusted) activity and inflation. With official dollarization, the domestic central bank would no longer have access to its key policy tool, the monetary base. In this sense, there would simply be no sovereign monetary policy.

Whether the loss of monetary autonomy is costly in practice is controversial. This fact may come as a surprise, particularly to readers who believe in the effectiveness of monetary policy. Nevertheless, as the discussion will show, it has been argued that the loss of independent monetary policy would entail essentially no cost to developing economies.

There are many sides to this contention. One depends, as with the question of the lender of last resort, on what system dollarization is compared with. If dollarization is considered as the alternative to a currency board, as in Argentina, then the loss of monetary independence is not an issue: in a currency board, there is no such independence anyway. The issue of independence emerges only if dollarization is considered against exchange rate flexibility.

Even then, there are those who argue that the issue is moot. For instance, Hausmann and others (1999) have observed that, in response to the 1997–98 emerging markets crises, interest rates were least variable in countries with more rigid exchange rate systems. At the same time, exchange rates moved very little in countries with flexible exchange rate systems. Hausmann and others attribute this combination to the fact that, in this period, countries with flexible exchange rates raised interest rates aggressively to defend their currencies. Hence they state that “Latin American Central

Banks used their exchange rate flexibility very sparingly, even when they formally float or have wide bands” (1999, 7). The implication is that whatever policy leverage is lost with dollarization is unimportant as it would not be used even if exchange rates were flexible.

However, the fact that central banks try to smooth exchange rate fluctuations is not an argument in favor of fixing exchange rates, currency boards, or dollarization. Such a behavior is neither inconsistent with floating exchange rates nor suboptimal in principle. Further, it can be shown that even if exchange rate stabilization were not a primary goal for the central bank, monetary instruments—and consequently interest rates—would still have to react to exchange rates. This reaction would occur because, as discussed by Chang and Velasco (2000b), current exchange rate movements carry information that is useful for predicting future goal variables, such as future inflation or employment.

Perhaps most importantly, a recent study by Ghosh and others (1997) provides convincing evidence that more rigid exchange rate systems result in larger fluctuations in output and employment and in perhaps less growth. Table 1 summarizes the implications for developing countries. The table compares developing countries under pegged, floating, and intermediate exchange rate systems in terms of their economic performance. The latter is measured by the level and volatility of inflation, growth, and employment relative to the average for all countries. Hence, the leftmost number of the first row, 0.00, indicates that developing countries with pegged exchange rates grew, on average, at the same rate as a typical country. In contrast, the third number of the first row, 0.50, indicates that developing countries with floating exchange rates grew, on average, half a percentage point faster per year than the typical country.

From the table, it is apparent that floating exchange rate regimes have enjoyed faster growth

TABLE 1 Developing Countries: Exchange Rate Regimes and Macroeconomic Performance

	Average for Various Exchange Rate Regimes ^a		
	Pegged	Intermediate	Floating
Output Growth			
Level	0.00	0.70	0.50
Volatility	0.08	-0.80	-0.52
Employment Volatility	0.05	0.01	-0.32
Inflation Rate			
Level	-2.90	-0.10	3.80
Volatility	-1.74	0.53	1.67

^a For the countries with each type of exchange rate regime, the figures are the average, in percent, of the deviation from the average of all countries.

Source: Goldfajn and Olivares (2000), based on Ghosh and others (1997)

and less volatility in output and employment than fixed rate regimes. The cost of this accomplishment has been substantially higher and more variable inflation. These results are consistent with the view that flexible exchange rates allow a government to cushion the impact of exogenous shocks on output and employment, even at the cost of generating inflation. But the fact that flexible exchange rates allow for the existence of a trade-off seems indisputable.⁷

The remaining question is whether that is a trade-off worth having. The net cost associated with the loss of monetary independence depends, at the end, on the value of a more stable price level that dollarization brings about relative to the more satisfactory behavior of output and employment associated with flexible exchange rates. The answer is unclear and likely to depend on the specific characteristics of individual countries.

Would Dollarization Lower the Cost of Credit?

Up to this point, the discussion has mentioned a number of costly consequences of official dollarization. But dollarization has some favorable aspects, as one should expect. One of them is that the risk of currency devaluation would not exist because the domestic currency would disappear. As a consequence, dollarization proponents argue, the cost of foreign credit for a dollarizing country would come down, stimulating investment and economic growth.⁸

However, that dollarization would result in a lower cost of credit is not as straightforward as it might sound. Consider what determines the interest rate that a resident of a developing economy must pay to borrow in the world market. If the loan is denominated in U.S. dollars, there is often a difference or spread between the rate charged to that borrower and the rate lenders would charge to otherwise similar American borrowers. That difference is what is called default risk or sovereign risk. It reflects the possibility of a developing country's default on its foreign debt. Such a possibility increases the cost of credit for all domestic agents. Even if default can be declared only by the government on official debt, domestic residents are likely to also stop or have difficulties servicing their individual obligations.⁹

If the loan is denominated not in dollars but in domestic currency, there may be an additional spread component that compensates lenders for the possibility of a devaluation of the domestic currency. In other words, the spread must also incorporate devaluation risk.

Since dollarization would imply the elimination of the national currency, there would no longer be domestic currency loans, and in this sense devaluation

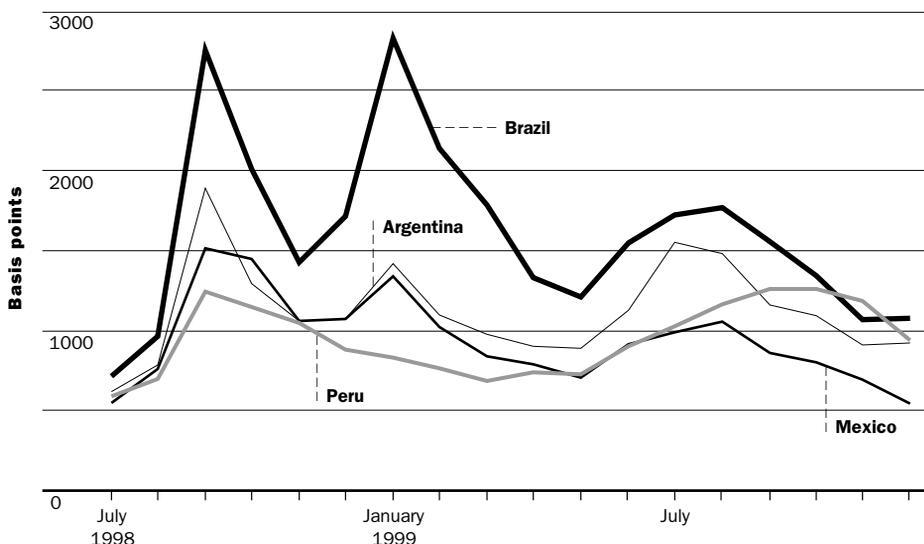
risk would disappear. However, it does not necessarily follow that the cost of credit would be lower for domestic residents. Instead, those that had the option of borrowing domestic currency before dollarization would be forced to take dollar loans instead. Thus, other things being equal, dollarization would be detrimental to those borrowers because, before dollarization, they presumably could have borrowed in dollars but chose not to.

The hope of dollarization advocates, however, is that the disappearance of devaluation risk would also reduce sovereign risk and hence result in lower dollar interest rates. This development may occur for at least two reasons. First, domestic residents or the government often have foreign currency liabilities but revenues that depend on the value of the domestic currency. A devaluation of the currency then increases the relative value of the liabilities, causing domestic bankruptcies. This situation, implied by the currency mismatch of assets and liabilities, would presumably be avoided with dollarization. Second, a government that is committed to defending the value of the national currency may resort to capital controls in order to fend off speculative attacks. Capital controls may, in turn, force domestic borrowers into default on their foreign debts.

However, it is also possible that eliminating devaluation risk may increase sovereign risk instead of reducing it. In particular, Chang and Velasco (2000c) showed that, in a theoretical model, a currency board or official dollarization may "succeed" in eliminating devaluations. However, such a success comes at the cost of preventing the central bank from acting as lender of last resort to domestic banks and implies the possibility of bank runs. In contrast, a flexible exchange rate system allows the central bank to create domestic credit to help banks in case of trouble and eliminates costly speculative runs. The implication, if domestic banks have foreign debts, is that flexible exchange rates may help reduce the risk of default on those debts. A different mechanism, emphasized by Berg and Borensztein (2000), is that a devaluation may have expansionary economic effects, which may improve fiscal revenues and reduce pressures for default.

Unfortunately, the empirical evidence is not very helpful in clarifying whether dollarization would reduce sovereign risk. To illustrate why, Chart 4 displays measures of sovereign risk for Argentina, Brazil, Mexico, and Peru during the second half of 1998 and all of 1999. Sovereign risk is measured by the difference between the yield of each country's Brady bonds and the yield on five-year U.S. Treasury bonds. The chart shows no discernible relation between sovereign risk and whether

CHART 4 Sovereign Risk



Note: Each country's graph is its Brady bond discount stripped yield minus the five-year U.S. Treasury yield, in basis points.

Source: Calculated by the Federal Reserve Bank of Atlanta using data from BancBoston Robertson Stephens, Inc., and the Board of Governors of the Federal Reserve System.

exchange rates are fixed or flexible. Argentina maintained a currency board and for most of the period had to pay a sovereign spread higher than that of Mexico or Peru, both of which maintained flexible exchange rates. On the other hand, the Argentinean spread was lower than Brazil's, even after Brazil switched to a flexible rate regime at the beginning of 1999. Also, the chart shows that the sovereign spreads of the four countries moved together after the Russian crisis of August 1998 and the Brazilian devaluation of January 1999. The chart thus underscores the fact that, to a large extent, sovereign spread movements reflect shocks that affect developing countries as a whole, independently of their exchange rate regimes.

The above remarks apply even for the case of Panama, which has been officially dollarized since 1904. Berg and Borensztein (2000), in particular, point out that Panama's sovereign spread has been very similar to Argentina's and was strongly affected by the Asian, Russian, and Brazilian crises. And Goldfajn and Olivares (2000) document that in 1998

and 1999 Panama's sovereign spread was considerably higher than that paid by Costa Rica, which maintained a flexible exchange rate system.

One can dispute the evidence just presented on a number of counts. The most important one may be that the international comparison of sovereign spreads should take into account not only their exchange rate regimes but also the influence of other, country-specific characteristics. But the fact remains that evidence that dollarization is likely to reduce sovereign risk premia and dollar interest rates is still missing.

Dollarization and Policy Credibility

Finally, one often hears that official dollarization would be beneficial because it would enhance the credibility of domestic policy. This contention is very difficult to evaluate, partly because the word "credibility" has been employed in many different senses and partly because there has been virtually no success at quantifying the size of the potential credibility gains.

7. One may argue that the data in Table 1 are consistent with a different view: that economic characteristics determine exchange rate regimes and not vice versa. This case would hold if, in particular, low-inflation countries are better able to maintain pegged exchange rates. However, Ghosh and others (1997) investigate this "reverse causation" possibility and conclude that it makes little difference to their results.
8. For instance, Hanke and Schuler observe, "The major benefit of dollarization [in Argentina] would be reduced interest rates" (1999, 407).
9. This would be the case if, in particular, a government's default is coupled with exchange restrictions and capital controls, limiting the private sector's access to hard currency.

One sense in which policy would be more credible is that official dollarization would be more difficult to reverse than other fixed exchange rate schemes. This contention has been most prominent in Argentina. There, the prevailing currency board system is widely regarded as having played a key role in lowering inflation in the 1990s. In spite of that success and repeated official announcements to the contrary, there remains a market expectation that the currency board may be abandoned. This market perception is evident from comparing dollar interest rates against

Argentinean peso interest rates on otherwise similar financial securities. The spread between peso- and dollar-denominated eurobonds, for instance, averaged 2.5 percentage points during the 1997–98 period, indicating that international investors demanded compensation for the risk of the government’s possibly abandoning the currency

board and a subsequent devaluation of the peso.

While the Argentinean government could end its currency board system virtually overnight if it wished to, it may be much more difficult to reverse official dollarization. Such a reversal would entail reintroducing national currency and, presumably, convincing domestic residents to turn in their holdings of dollars. Seen in that light, official dollarization would be a more “credible” arrangement than maintaining a currency board with an uncertain future.

But a further question emerges: are there clear benefits from such marginal gains in credibility? Dollarization enthusiasts hope for a positive answer in at least three respects. The first is that, by eliminating the possibility of devaluation, enhanced credibility will help reduce interest rates. It has already been argued, however, that it is unclear whether such a promise will materialize.

The second benefit from the irreversibility of dollarization is, in fact, that monetary policy will be taken out of the hands of the domestic central bank. Calling this development a benefit may sound paradoxical, but if the central bank cannot fully commit to its policy announcements then there is a benefit in taking control away. Specifically, it may be the case that the central bank has incentives to promise

low inflation *ex ante* but to engineer unexpectedly high inflation *ex post*. By generating surprise inflation, the central bank may stimulate the economy and increase employment and output. But private agents will soon understand if there is a systematic attempt to act in this way and will adjust their behavior accordingly, possibly not only offsetting the effectiveness of surprise inflation but also leading to a situation in which average inflation is sub-optimally high.

The importance of the argument just stated remains to be elucidated. While dollarization may reduce the inflation bias associated with the central bank’s lack of commitment, it can do so only at the cost of reduced policy flexibility. Policy flexibility is advantageous under some circumstances, as when the economy is hit by exogenous shocks. In addition, taking monetary policy away from domestic authorities, as dollarization does, is not the only way to overcome the commitment problem. An alternative is to structure the contracts of central bankers so as to eliminate their incentives to generate surprise inflation. Finally, it should be observed that in the last decade average inflation came down in most developing countries, regardless of their exchange rate regimes. Annual inflation in Peru was over 7,000 percent in 1990, the same year in which important economic reforms were enacted, including flexible exchange rates. Inflation then fell steadily and has remained in the single digits since the mid-1990s. While other cases may not be as dramatic, the evidence shows that fixing exchange rates has not been necessary to reduce average inflation.

A third reason that the irreversibility of dollarization may be beneficial is that it may enhance fiscal discipline. If a government is prone to lax fiscal behavior, the argument goes, dollarization may impose some discipline by making it more difficult for the government to finance excess fiscal behavior. It might do so by eliminating seigniorage revenues and inflationary finance and by forcing the government to issue only foreign currency debt.

The fiscal discipline argument for dollarization has its own problems. Tornell and Velasco (1995) have pointed out that its theoretical underpinnings are myopic. Regarding fiscal discipline, they argue, dollarization differs from flexible exchange rates not in preventing lax fiscal behavior but in shifting its costs to the future. A government can always finance its expenditures today by borrowing. The cost of such a move would be a higher interest rate if exchange rates were flexible. Under dollarization, the interest cost may be lower but the fiscal expenditures have to be paid in some other way; in most cases, doing so means lowering

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expenditures or raising taxes tomorrow. Which alternative acts as a better deterrent for a fiscally irresponsible government, therefore, depends largely on the rate at which the government discounts the future. An impatient government would, in fact, be more disciplined with flexible exchange rates, which impose immediate costs on lax fiscal behavior, than in a dollarized regime, which postpones the time of reckoning.

In addition, the evidence is not supportive of the idea that more rigid exchange systems enhance fiscal discipline. As noted by Goldfajn and Olivares (2000), Panama's annual fiscal deficit averaged 3.8 percent of GDP between 1970 and 1998, considerably higher than the deficits of Chile, Costa Rica, and Peru, where exchange rates were more flexible. And, in spite of its currency board, Argentina has had recent difficulties controlling its fiscal deficit: its fiscal deficit in 1999 is estimated at 3.8 percent of GDP.

In sum, dollarization advocates are right in arguing that dollarization would be harder to reverse and in that sense more "credible" than a currency board or other exchange rate regimes. But whether that irreversibility would translate into actual benefits to

the economy is more uncertain. Further, there has been virtually no attempt to quantify the net benefits associated with the credibility argument.

Conclusion

There is an old movie in which the leader of the world's smallest country asks his advisers how to handle an economic crisis. One minister suggests, "Declare a war on the United States." When the perplexed leader asks how that would help, the minister points out that nations like Germany and Japan fought a war against the United States, lost, and then became world powers. At first, the leader seems satisfied with this explanation. But then he has a doubt and asks, "And what happens if we win?"

Like declaring war on the United States, official dollarization would impose considerable costs on a developing country. And as the discussion has shown, the costs are by and large identifiable and can be quantified. On the other hand, the benefits from dollarization remain to be demonstrated. As in the war story, it is not even clear what would happen if dollarization won.

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