

Comments

Jeffrey Frankel: Let me begin by expressing my admiration for the industriousness of Ilan Goldfajn. At LACEA in Rio de Janeiro he hosted one of the smoothest-running large meetings I have ever attended, presented two authored papers, and changed jobs, all at the same time.

From the viewpoint of the United States or Brazil, Panama looks like a small country. We must necessarily look at small countries, however, if we are to examine the historical experience with official dollarization. Indeed, as Goldfajn and Olivares point out, Panama has until recently been the largest dollarized country. The research strategy represented in this paper is therefore exactly the right one.

First, consider the origins of a country's decision to adopt the dollar as the national currency. Does the decision follow extraneous political currents or the recommendations of economic theory? If the latter, which theory? Does it reflect traditional optimum currency area (OCA) criteria—country characteristics such as small size, openness, dominance of internal disturbances, symmetry of shocks, and labor mobility? Or does it reflect modern criteria, many of which were designed to explain Argentina's popular adoption of the convertibility plan in 1991 despite its poor qualifications for a fixed exchange rate under the traditional OCA criteria. These modern criteria, which have more to do with stabilizing investor confidence than stabilizing the business cycle, are as follows:

- a strong (even desperate) need to import monetary stability, due to a history of hyperinflation, an absence of credible public institutions, or an unusually large exposure to nervous international investors;

- a desire for further close integration with the United States (which has the added advantage of enhancing the political credibility of the commitment, if such integration is indeed politically popular);

- an economy in which the dollar is already widely used; and
- access to an adequate level of reserves.¹

Panama adopted the dollar at independence almost one hundred years ago. At first glance, the original decision to dollarize fits the traditional OCA criteria: Panama is small, and it trades extensively with the United States. The Central American countries, in general, qualify fairly well.² At second glance, the decision also fits a political explanation: Americans were active in encouraging the onetime province of Colombia to break away in 1904, so that they could build the Panama Canal. At third glance, the modern criteria also hold. Panama had recently been the victim of a hyperinflation in Colombia's currency (the so-called War of 1000 Days), so that a desire for monetary stability was a perfectly good motive for switching to the dollar.

Every country that uses the dollar or some other foreign currency as its national currency has employed the regime at least since independence.³ The only major cases in which a country has fully given up its currency while remaining politically independent are two very recent ones. First, in 1999, eleven European countries entered a monetary union for reasons that do not fit the modern criteria, but rather follow traditional OCA criteria, unless one wants to explain the decision as serving purely political goals. Second, Ecuador opted for full dollarization in 2000; this small, open economy could fit the traditional OCA criteria, but it was the desperation of its economic circumstances that made dollarization seem the

1. Williamson (1995) and Larrain and Velasco (1999) offer similar lists. With regard to the existing use of the dollar, note that devaluation is of little use in a country that is already partially dollarized. If many wages and prices are already tied to the dollar, they will simply rise by the same amount as the exchange rate. If liabilities are already denominated in dollars—and in the case of international liabilities, foreign creditors generally insist on this—then devaluation may bankrupt domestic borrowers. Calvo (1999) and Hausmann and others (1999) discuss such initial conditions as criteria for dollarization.

2. Especially in the case of El Salvador and especially if one takes into account the role of migration (and emigrants' remittances) as one of the mechanisms of adjustment that can help make up for a loss of monetary independence. See Stein and others (1999) or Panizza, Stein, and Talvi (2000).

3. Independent countries using the dollar include the Marshall Islands, Micronesia, Palau, and Panama, as well as a number of U.S. and British territories. Independent countries using the non-dollar foreign currencies of neighboring countries are Andorra, Bhutan, Kiribati, Liechtenstein, Monaco, Nauru, San Marino, Tuvalu, and the Vatican.

only choice, which corresponds to the modern criteria. Most relevant data for the European Monetary Union and Ecuador will not be available for some time, so we must return to Panama.

The distinction between average performance in the long run and volatility in the shorter run is important. Computations suggest that Panama has generally performed better than countries with more flexible exchange rate regimes. It is by now well known that countries with less flexible exchange rate regimes tend to have lower inflation rates, not just in theory but empirically as well. This is particularly true of currency boards, whose enhanced monetary stability seems to come with average real growth rates that are higher, not lower, than other countries. The paper shows that Panama, the only fully dollarized economy of reasonable size, has had a substantially lower inflation rate than most other countries. Its growth rate (5.3 percent), while variable and lower than the world-wide average, is nevertheless similar to that of other Latin American countries.

Long-Run Real Depreciation in Panama

That the long-run average inflation rate in Panama is not only lower than in other developing countries, but lower than in the United States as well, is a bit of a puzzle. Given the common currency, one might expect the inflation rates to be equal; instead Panama has experienced a real depreciation. The authors conclude that this is some sort of reverse Balassa-Samuelson effect. The usual Balassa-Samuelson effect says, of course, that countries with rapid productivity growth experience rapid increases in the relative price of nontraded goods and, therefore, real appreciation. The authors should be careful, however, not to attribute this reverse Balassa-Samuelson effect to a high share of nontraded goods and services in the Panamanian economy (reported at 78 percent, versus 10 percent in manufacturing and 4 percent in construction).⁴ The effect of this would be to amplify the Balassa-Samuelson effect, not reverse it.

4. Surprisingly, the authors do not mention the agricultural sector, which I would have expected to be substantial.

The real exchange rate, using CPI baskets, is given by

$$\begin{aligned}
 Q &\equiv \frac{E(CPI^*)}{(CPI)} \\
 &\equiv \frac{E(P_{TG}^{*1-\alpha} P_{NTG}^{*\alpha})}{(P_{TG}^{1-\alpha} P_{NTG}^{\alpha})} \\
 &= \frac{(EP_{TG}^*) P_{TG}^{*-\alpha} P_{NTG}^{*\alpha}}{(P_{TG}) P_{TG}^{-\alpha} P_{NTG}^{\alpha}} \\
 &= \frac{(P_{NTG}^* | P_{TG}^*)^{\alpha}}{(P_{NTG} | P_{TG})^{\alpha}}
 \end{aligned}$$

where α is the share of nontraded goods and services (NTGs) in the economy. The real exchange rate thus varies with each country's relative price of NTGs. The presumption is that positive productivity growth (or perhaps a Baumol effect) gradually raises the relative price of NTGs in every country. In the equation, if the relative price of NTGs increases faster at home than abroad, the result is a real appreciation, which is the same effect as a high share of NTGs, α . But what, then, is the explanation for the observed real *depreciation*? I don't know. Perhaps Panama has a lower rate of productivity growth than the United States, or perhaps the nature of its services has led to rapid productivity growth in this sector in particular.⁵ The paper asserts a long-run downward trend in the relative price of services. I haven't seen any direct evidence on such prices, however, just the statistics on real depreciation.

5. Services are a very diverse category. There is no ironclad law that says that the prices of all services must increase relative to the prices of all goods, nor are all services less susceptible to international trade than all goods. Perhaps the answer lies in falling costs for the inputs into Panama's sort of nontraded goods and services. The innovation of containerized cargo, for example, sharply reduced the costs of ocean shipping in the postwar period, but I am unsure whether that should raise or lower the price of Panama Canal services. As the Canal was U.S.-owned during this period, perhaps what matters is any trend in the real value of royalties paid to Panama.

Sensitivity to External Shocks

The challenge, of course, is distinguishing to what extent the exchange rate regime is responsible for the differences between Panama and other countries. This means thinking about other distinctive aspects of the Panamanian economy, as well as trying to sort out what sort of shocks occurred during the time period and how well the different exchange rate regimes cope with the different sorts of shocks. Adverse external shocks hit Panama in 1982–83 and 1997–98 in the form of international debt crises, but the 1987 disruption associated with an arrest warrant for Manuel Noriega delivered by U.S. troops (a shock that was in a sense external) represented the sharpest negative shock that Panama has experienced to date. The authors suggest that dollarization made it worse. This is certainly the way it sounded at the time, that the United States cut Panama off from dollars. It is true that the United States cut off the supply of new paper currency and froze Panamanian bank accounts in New York. The first action had little real adverse economic impact, however, while the efficacy of the second derived not from dollarization per se but from the large role of New York banks in the economy.⁶ But the latter was in part the consequence of the former.

The 1997 East Asia crisis initially had only a moderate financial impact on Panama, but the impact became much sharper when the crisis spread to Russia and Brazil in 1998. The impact was sharper still, however, in other parts of Latin America. Despite its tie to the dollar, Panama's growth rate in 1997–98 was no worse than that of other countries in Latin America and better than that of the Caribbean. The econometrics section of the paper uses the Latin EMBI+ as an indicator of international confidence; its declines in 1995 and 1997–98 capture the bouts of contagion. The results show that declines in the EMBI+ over the period 1994–99 had negative effects on Panama, as measured by real depreciation (that is, deflation) and a decline in real economic activity. The adverse effects in Costa Rica and Argentina were worse, however. These two countries were chosen as comparisons because the former is a fairly similar country, but with a more flexible regime, while the latter is a very different country with a currency board. This finding is consistent with

6. Moreno-Villalaz (1999) argues that Panama's regime has given the economy stability even in the face of such political disruptions.

the hypothesis that a country that goes to the extreme of dollarization, thereby eliminating the residual fears of devaluation that linger even in Argentina, buys itself a degree of international confidence that insulates it from the vagaries of contagion.

The Appendix tests the effect of an increase in the U.S. federal funds rate, in place of the Latin EMBI+ index.⁷ It finds an adverse effect on Panama, as reflected in both the real exchange rate and the level of economic activity. This is to be expected. The major critique of dollarization is that the country's monetary policy becomes tightly linked to U.S. monetary policy, even though that might not be suited to its cyclical conditions. In light of new hypotheses about the confidence effects of dollarization, however, it would be interesting to explore how Panama's sensitivity compares to that of other developing countries. The paper does not report a comparison of this test for Argentina and Costa Rica.

Next Goldfajn and Olivares look at a foreign real shock, a decline in monthly production among industrialized countries. Panama again experiences an adverse effect, but in this case it is not noticeably milder than the effect on Argentina.

Their conclusion is that external shocks explain a much smaller proportion of the overall variance in economic activity in Panama than in the other two cases, despite the openness of the economy. The finding that domestic shocks are more important than external shocks makes Panama a good candidate for monetary union under the traditional textbook criterion. That foreign shocks dominate for Costa Rica is striking because its flexible exchange rate should in theory help insulate it against them.

The central finding of the paper is perhaps Panama's relative stability with respect to the EMBI+. The authors are hesitant to conclude that this is evidence of a positive confidence effect from dollarization. Their reasoning is that such an effect should show up in Panama's interest rate behavior. I am not sure that it doesn't. After all, interest rates are lower in Panama than in other Latin American countries. The next question is their degree of sensitivity relative to other emerging markets.

7. In Frankel and Roubini (2000, table 3), we find that an increase in the real U.S. federal funds rate of 1 percent has been associated with a reduction in the EMBI+ of an estimated 23 percent and in the International Finance Corporation (IFC) equity index for Latin America of an estimated 29 percent. (The effect on Latin American securities prices is stronger than the effect on U.S. securities prices.) However, the EMBI+ can capture other global effects besides U.S. interest rates, such as the 1998 contagion.

Does Dollarization Stabilize Interest Rates?

Whether interest rates in a dollarized country are lower and more stable under dollarization than under a flexible exchange rate, or even than under a currency board, is a key question. Hausmann and others find that currency board countries had lower interest rates, on average, than flexible rate countries.⁸ In my own work, I find that while interest rates in countries with a currency board (Argentina and Hong Kong) are tightly linked to the U.S. fed funds rate, they do not rise as much, on average, in response to an increase in the U.S. fed funds rate as do interest rates in countries with more flexible exchange rates (Brazil and Mexico).⁹ The pattern is even clearer in Panama's interest rates: a regression against the fed funds rate showed a higher R^2 but a lower coefficient than for other countries. Subsequent investigation suggests that this finding does not generalize to wider samples of fixed versus floating rate countries.¹⁰

Interest rates incorporate both a currency premium and a country premium. Dollarization, by definition, eliminates the currency premium that countries with a flexible exchange rate have to pay on their local-currency borrowings, and the currency premium is a major component of the interest differential for many countries. That premium is already rather low, however, in the case of a currency board. The open question is whether dollarization also reduces the country premium. The authors list theoretical arguments on both sides—reasons why default premiums should be positively correlated with currency premiums, across different exchange rate regimes, and reasons why they should be negatively correlated. If the first set of factors dominates, then dollarization necessarily reduces interest rates; if the second set is stronger, then it does not. The main argument for a positive correlation between currency premiums and default premiums is the so-called balance-sheet effect that was so evident in the 1997–98 East Asian crisis, as well as in the 1995 Mexican peso crisis: banks and firms that borrow from abroad in dollars will have difficulty meeting their debt-service obligations in the aftermath of a devaluation, and they may default. Under a flexible exchange rate regime, even when investors seek to protect themselves against currency risk, it shows up

8. Hausmann and others (1999).

9. Frankel (1999, table 1).

10. Frankel, Schmukler, and Servén (2000).

anyway in the form of default risk. The main argument for a negative correlation between the default premium and the currency premium is the capacity for countries that borrow in their own currencies to inflate away the debt consequences of an adverse shock; fundamental risk thus shows up either as currency risk under a flexible regime or as default risk under dollarization.

Such tests are more illuminating whenever one can use forward rates (or locally issued dollar rates or spreads in the Euromarket) that allow us to observe the extent to which foreign investors are willing to settle for lower interest rates when the element of exchange risk is removed. Such studies show that country premiums remain large, even in countries that use firm exchange rate commitments to lower their currency premiums substantially. They are also sensitive to U.S. interest rates. However, this does not yet provide a definitive answer regarding the correlation between currency premiums and country premiums, for example, when changes come in response to foreign disturbances.

Goldfajn and Olivares offer an interesting bit of additional evidence that might shed a different spotlight on this patch of ground when they discuss the debt ratings for six countries. The key is to compare the ratings by currency of denomination. Assume some firms borrow predominantly in dollars and others in local currency. Under the balance-sheet hypothesis, one would expect lower ratings (higher default risk) on the firms that borrow in dollars. The same is true under the inflate-away-the-local-debt hypothesis. Under either hypothesis, even if a country may have to pay very high interest rates on local currency debt to compensate for currency risk, the default risk should be higher on dollar debt. (This is very much a *ceteris paribus* proposition, but the fact that these comparisons are taking place within each country should help.) A review of the Standard and Poor's debt ratings for five Latin American countries shows that ratings are lower on dollar-denominated bonds than on local-currency bonds (Argentina, Brazil, Chile, Costa Rica, and Peru). In other words, the prediction of both theories is borne out.

This doesn't help much, since both theories have the same prediction, but a glimmer of a way to answer the question is visible. Can one obtain the same data by firm, that is, for those firms that issue debt both in local currency and in dollars? If the dollar-denominated debt continues to show lower ratings (higher default risk), it would support the inflate-away theory. The alternative balance-sheet theory would predict that a country

with substantial dollar debt is in danger of going bankrupt and defaulting on all its debt, whether in local or foreign currency, in the event of a devaluation; thus the difference in ratings would arguably disappear at the firm level. This presents another possibility for future research.

Overall Assessment of the Panamanian Experiment

Even if one reads the historical record as evidence that Panama has achieved better economic performance, one must ask whether dollarization has been the key to this success or whether other attributes are more important. On the plus side are at least three factors: services, an open banking system, and unusually high exposure to international trade. Dependence on the United States could also be viewed as a negative factor, as in the 1987–88 invasion.

The authors suggest that the large services sector may be behind Panamanian stability, since services are generally known to be more stable than goods. Again, I want to know more about those extra Panamanian services—financial services, entrepot services, the Canal itself. Are they really more stable than the rest of the economy? I can imagine the East Asian crisis, for example, hitting those services hard. Another factor is the international integration of the banking system, particularly the heavy participation of foreign banks, which some researchers identify as more important than dollarization.¹¹ I suspect that the former is largely a consequence of the latter and that countries considering dollarization realize and accept that this choice would be accompanied by increased participation of foreign banks. It is often remarked that when a country gives up the ability to print its own currency, it no longer has a lender of last resort; an increased role for foreign banks is the best solution to this problem.

A high degree of international integration with respect to trade, especially with the United States, is another factor that is usually taken as a parameter, but I consider it to be partially endogenous to the dollarization decision. Look at the effects of monetary unions on trade and growth. Statistical analysis suggests that dollarization triples trade with the United States and other dollar-based countries, even when geographic proximity, free trade areas, linguistic links, historical links, and a host of other factors

11. Moreno-Villalaz (1999).

are held constant.¹² For countries like Panama or Ecuador, which are already natural trading partners of the United States, this represents roughly a doubling of overall trade as a share of GDP. (Tests suggest no tendency for a currency union to divert trade away from nonmembers.) When these findings are combined with estimates of the boost that openness gives to real growth over the subsequent twenty years, dollarization has the potential to eventually boost real per capita income in Panama (retrospectively) or Ecuador (prospectively) by around 20 percent. This increase in trade with the United States also leads to an increase in the cyclical correlation of the two countries, which thus *ex post* makes Panama an even better candidate for dollarization under the traditional OCA criterion.

Gian Maria Milesi-Ferretti: The costs and benefits of dollarization or, more generally, of joining a currency union have been hotly debated in international economics in recent years. In this paper, Ilan Goldfajn and Gino Olivares take an eclectic approach, blending a thoughtful discussion of the theoretical literature with a detailed case study of the performance of the Panamanian economy over the past three decades. They also provide a number of informative cross-country comparisons of this performance with that of two other Latin American countries. For a relative newcomer to the literature on dollarization, such as myself, this is a very informative and useful piece.

Wouldn't one learn more, however, from a more comprehensive cross-country study that rigorously compares the economic performance of countries belonging to currency unions with that of countries outside the union? Unfortunately, countries that have belonged to a currency union for a sufficiently long period of time to be considered for such a study tend to be very small—indeed, Panama is a giant in such company, notwithstanding its population of under 3 million people. Many authors are therefore wary of drawing sharp lessons from cross-country studies that examine the effects of currency unions on economic performance by comparing the performance of a group of countries belonging to a currency union with that of other countries, despite the strong findings of Rose (2000) and Frankel and Rose (2000).

12. Frankel and Rose (2000). An important caveat is that since this result comes from a pure cross-section study, there is no way of saying how many decades must pass before the full effect on trade is realized.

Even so, conditional comparisons are a useful way of comparing economic performance between countries. The authors choose to compare Panama's inflation, budget deficit, growth, growth volatility, and interest rate spreads with those of other countries in the same geographical region, in particular with Argentina and Costa Rica. An alternative approach would be to rely on *conditional* comparisons of Panama's performance with one of the other countries, taking into account exogenous factors such as the size of the Panamanian economy and terms-of-trade shocks. This type of comparison should be based on the extensive empirical work devoted to explaining cross-country differences in growth performance, inflation performance, and even the volatility of growth. Then one could meaningfully ask the question whether, for example, Panama's inflation performance is better than to be expected given its other main characteristics, which include a fixed exchange rate.

The paper's main findings are eminently reasonable and sobering at the same time. Clearly, using the dollar is not a passport to economic prosperity regardless of the other policies being adopted. Using the dollar has obviously kept Panamanian inflation in check.¹ Panama's performance with regard to growth and growth volatility, however, has been average in comparison to other Latin American countries.

I am not surprised to see that dollarization has not automatically implied fiscal discipline, especially since its adoption was unaccompanied by major macroeconomic reforms. Given the fact that the stock of Panama's public debt is very high (and predominantly external), access to international capital markets for public sector financing is essential, and the ebbs and tides of international capital flows to emerging markets are going to be reflected in interest rate spreads. Despite the absence of currency risk, spreads exhibit common features with those of other Latin American countries using different exchange rate regimes. Panama's history, furthermore, includes a protracted sequence of IMF programs, a debt rescheduling agreement, and bouts of political instability; it is no wonder that Panamanian spreads are not wafer thin.

The paper's findings concerning response to shocks also appear reasonable. In particular, it is not surprising to see that a world production shock has a stronger impact on small, very open economies, such as Costa

1. The real depreciation trend vis-à-vis the U.S. dollar is very interesting and warrants further attention.

Rica and Panama, than on large, closed ones, such as Argentina, irrespective of the exchange rate regime. With regard to the smaller impact of the confidence shock on domestic activity, the large share of services (banking, in particular) may indeed be part of the explanation, as the authors suggest. A look at Panama's external accounts makes the size of the banking system's international transactions very clear: in an economy with a GDP below \$10 billion, the banking system accounts for around \$20 billion of both Panama's external debt assets and external debt liabilities, according to the international investment position statistics reported by the IMF's Balance of Payments Statistics (data for 1999).² Insofar as these reflect international offshore transactions, the effects of confidence shocks on this component of GDP are likely to be limited.

2. External debt assets (liabilities) of the banking system are defined as the sum of portfolio debt and "other" bank assets (liabilities). The data on the external sector also highlight the high level of net external liabilities (over 80 percent of GDP), of which a substantial fraction is accounted for by foreign direct investment.

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