Costs and Benefits of Dollarization

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1. Introduction

In the last few years, the idea of dollarization has surged to the forefront of monetary policy alternatives for Latin American countries. Several countries have already officially adopted the US dollar as legal tender. Panama adopted the dollar as its official currency in 1904, Ecuador dollarized in September 2000 and El Salvador followed suit in January 2001. By eliminating their national currencies and replacing them with the US dollar, countries considering dollarization hope to achieve economic stability and growth. Is dollarization a quick remedy for economic stability in Latin America? The answer is yes and no. Dollarization may promote economic stability in the short term, but structural and institutional problems must also be addressed if a dollarizing country is to achieve long-term economic growth and development.

In addition to full dollarization, many Latin American countries have experienced a high degree of partial dollarization since the 1970s. Under partial, or unofficial, dollarization, individuals substitute domestic currency with foreign currency to make transactions and protect the purchasing power of their money income. However, the speed of the unofficial dollarization process will depend on the development of the financial system and the institutional regulations allowing domestic holding and circulation of foreign currency (Savastano 1996). A high degree of partial dollarization not only has an impact on the effectiveness and performance of economic policies, but also requires adjustments in prudential regulations.

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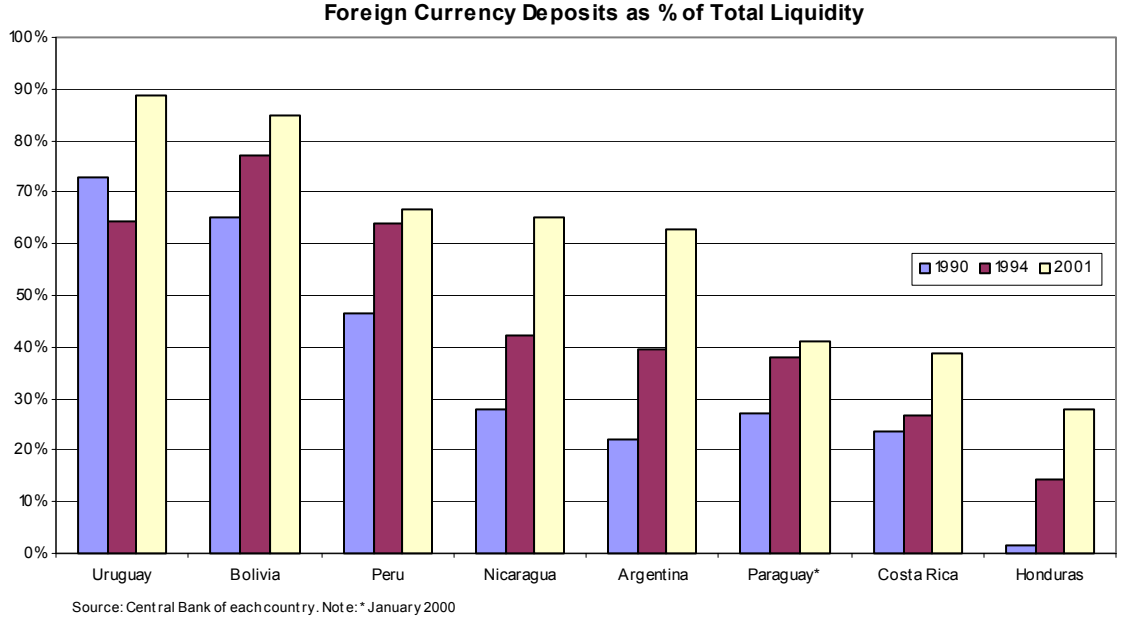
Why partial dollarization rates are so high in developing countries is an interesting question. In the 1970s and 1980s, when macroeconomic instability and high inflation rates characterized several Latin American countries, individuals used foreign currency to keep their assets from the negative effects of inflation and uncertainty. However, in the 1990s, many Latin American economies have seen increasing or even accelerating rates of dollarization after the implementation of successful disinflationary programs. Graph 1 shows increasing dollarization ratios for several Latin American countries between 1990 and 2001. The degree of dollarization is measured by deposits in foreign currency as percentage of total liquidity, where total liquidity includes money supply and deposits in foreign currency.

Graph 1
Partially Dollarized Economies in Latin America
Foreign Currency Deposits as % of Total Liquidity



Source: Central Bank of each country. Note: * January 2000

Note: The graph excludes Brazil, Chile, Colombia, Guatemala, Mexico and Venezuela. In these countries, the share of foreign currency deposits in money supply was below 10% in 2001.

This paper examines full and partial dollarization in Latin American countries. Section two presents the definition and measurements of dollarization. The third section discusses full

dollarization, its costs and benefits, reviewing the experiences of Ecuador, Panama and El Salvador. The fourth section examines the challenges that a highly dollarized financial system poses to economic policy and discusses the implications of partial dollarization in policymaking, including the Convertibility Plan in Argentina. The final section offers concluding remarks.

2. Definition and measurement of dollarization

The interpretation of the term "dollarization" has evolved since the early 1970s. Early in the literature, "currency substitution" was the term used to describe the demand for foreign currency by local economic agents. Most of the literature on currency substitution presented the experiences of Latin American countries in the 1970s and 1980s. Given the preference of Latin Americans for US dollars, the term dollarization was coined to describe the demand for foreign currency. The terms currency substitution and dollarization were interchangeable during these years. In the 1990s, "dollarization" came to describe the legal adoption of the US dollar as domestic currency. Consequently, it is important to distinguish between two types of dollarization: official or full dollarization, and unofficial or partial dollarization.

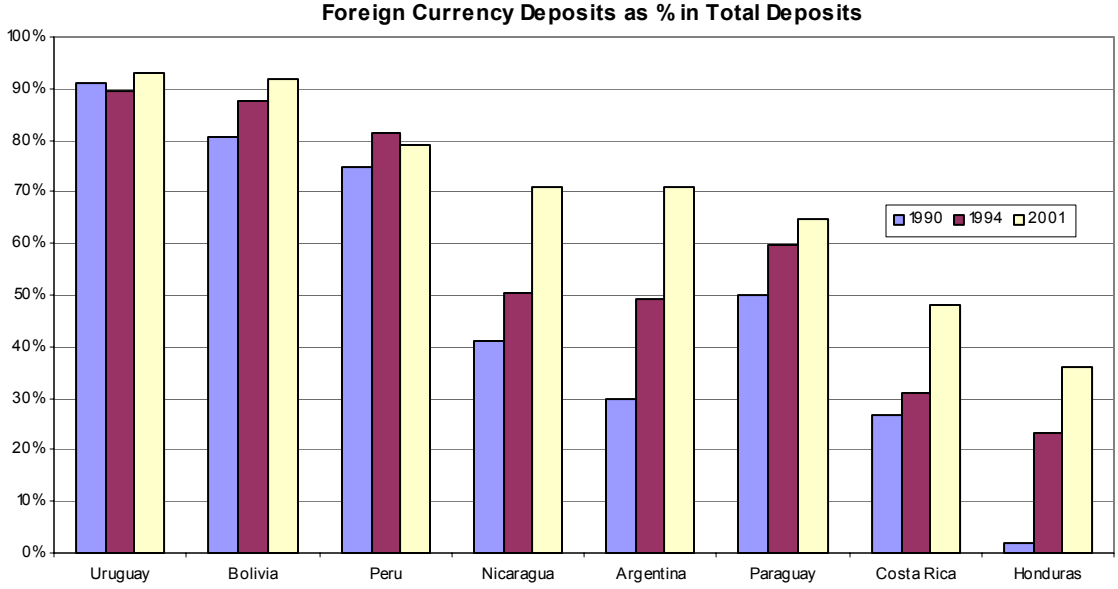
In official or full dollarization, monetary authorities adopt the US dollar as legal tender for all transactions. The US dollar takes over all functions of domestic money: unit of account, medium of exchange and store of value. Unofficial or partial dollarization refers to the process by which individuals substitute domestic currency with foreign currency to make transactions and allocate their financial assets. In such cases, the monetary authorities do not necessarily promote or encourage dollarization. Partial dollarization typically responds to the need to protect the purchasing power of money income and assets in domestic currency from the perverse effects of high inflation rates.

Under unofficial or partial dollarization, it is useful to distinguish between currency substitution and asset substitution. This differentiation depends on the economic agent's motive for demanding foreign currency. Currency substitution refers to the use of foreign currency as medium of exchange and unit of account. In an inflationary situation, the cost of holding domestic currency becomes so expensive that residents will make transactions using foreign currency. After an initial learning period, transactions using US dollars are widely accepted. A reversal is not immediate even when the inflation rate declines.[1]

Asset substitution describes the allocation of portfolios in assets denominated in foreign currency. The US dollar replaces the domestic currency as store of value. By using assets denominated in foreign currency, local residents try to avoid the negative impact of macroeconomic instability, inflation and depreciation of the currency. In these cases, risk and return are important variables in the demand for foreign currency.

Graph 2 shows the share of deposits in foreign currency in total deposits in several Latin American countries. It reveals that the share of deposits in foreign currency in total deposits in these countries has increased in the last 10 years. This increase has been continuous except in the case of Peru, which shows a small decline in 2001 relative to 1994.

Graph 2
Partially Dollarized Economies in Latin America
Foreign Currency Deposits as % in Total Deposits



Source: Central Bank of each country.

Although full and partial dollarization are observable processes, the accurate measurement of the degree of dollarization depends on the limitations that monetary authorities impose on the circulation of foreign currency, its use in domestic transactions, alternative financial instruments in foreign currency and capital flows. In the absence of such restrictions, local residents can hold foreign currency in three ways: foreign currency in circulation, foreign currency deposits held in domestic financial institutions, and foreign currency deposits held abroad. Information about foreign currency in circulation from the home country does not exist or has serious limitations.[2]

One of the most common indicators of dollarization is the share of foreign currency deposits in the money supply (inclusive of foreign currency deposits), as shown in Graph 1. Graph 2 illustrates another indicator of dollarization, the share of foreign currency deposits in total deposits. For a more precise measure of the degree of dollarization, the previous indicators should include foreign currency deposits held abroad by local residents. This "expanded" or

"broad" dollarization ratio includes the share of deposits in foreign currency held locally and abroad in broad money, the sum of money supply and deposits in foreign currency held locally and abroad. However, information about deposits of local residents held abroad presents serious problems in collection and availability.[3]

3. Benefits and costs of full dollarization

Full dollarization has become one of the most debated policy alternatives for Latin American countries fighting high inflation rates and economic uncertainty. For example, economist Steve Hanke has proposed full dollarization as one of the necessary (but not sufficient) conditions to help solve the economic crisis in Argentina.[4] But are the benefits of full dollarization greater than the costs? The decision whether or not to dollarize brings to mind the statement "there is no free lunch." Benefits will come at a cost.[5]

One of the expected benefits of full dollarization in the short run is the decline of inflation rates and inflation expectations. Full dollarization eliminates the risk of depreciation of the domestic currency, a contributing factor to the acceleration of inflation. Another benefit of full dollarization is the perceived enhancement of economic policy credibility. The high cost of reversing full dollarization could restore confidence in policymakers' long-term commitment to price stabilization and fiscal discipline. This gain in policy credibility reinforces the reduction in inflation fears.

By adopting the US dollar, the monetary authority gives up control of the interest rate and money supply. Given the experience of Latin American countries with hyperinflation, this lack of control might be seen as positive. Full dollarization would eliminate the possibility of financing the fiscal deficit with seigniorage, the revenue associated with the printing of domestic

currency, and exchanging it for goods and services. Without this possibility of public financing, dollarization imposes on the government the need to look for alternative sources of revenue or reduce government expenditures. By giving up control of the money supply, full dollarization encourages fiscal discipline; however, it also restricts any stabilizing response of fiscal policy to negative external or domestic shocks.

Another implication of full dollarization is the restriction imposed on the monetary authority's role as the lender of last resort to the domestic banking system. As lenders of last resort, central banks provide loans to banks facing liquidity problems by assuring the availability of deposits in a bank run situation. Under full dollarization, printing money is no longer the source for liquidity and the central bank needs to look for alternative sources to respond to financial emergencies. These solutions include external lines of credit and reserve funds from tax revenues. Paradoxically, therefore, even though full dollarization limits the role of lender of last resort and monetary policy response to financial crisis, it might make a bank run less likely by giving economic agents greater confidence in the domestic banking system.

An expected benefit from full dollarization is the reduction of the cost of borrowing. Use of the US dollar eliminates the devaluation risk and should reduce interest rates. In the case of public debt, this decline represents a reduction of debt service. In the private sector, the elimination of devaluation risk might bring stable capital flows, increase the confidence of foreign investors, and therefore promote investment and growth. However, sovereign or default risk is still present and investors still respond to financial crises—real shocks as well as political and social conditions specific to a country.

One of the consequences of full dollarization is the opening of the economy to capital mobility. Given prudential regulations, these capital flows could promote financial

intermediation, encouraging the development of a sound financial system and its integration with the rest of the world (Berg and Borensztein 2000). Full dollarization not only promotes financial integration, but also international trade. Countries with full dollarization will have a common currency with their main trading partner, lowering transaction costs by eliminating depreciation risk and promoting trade between these countries. Rose (2000) finds that two countries sharing the same currency trade more than they would with countries using different currencies.[6]

In sum, dollarization promotes, but does not guarantee, fiscal discipline, an efficient financial system, the adoption of institutional reforms, and financial and trade integration with international markets. At the same time, however, a fully dollarized country becomes more vulnerable to real and financial shocks due to the restrictions that full dollarization imposes on policymakers.

Why, then, is full dollarization an attractive solution? Are the gains from policy credibility, economic stability and the reduction in borrowing expenses greater than the costs? The experiences of Panama, Ecuador and El Salvador can help sketch out an answer to these questions.

A. Full dollarization in Panama

Panama was the first fully dollarized economy in Latin America. After the country gained independence from Colombia in 1904, the US dollar became the legal tender for transactions and the domestic currency. The balboa was used for small transactions as well as a unit of account.[7] Panama's decision to adopt full dollarization responded to political and historical reasons rather than economic ones. Due to its geographical location, Panama was a natural route for trade, leading to the construction of the Panama Canal at the beginning of the twentieth century. The opening of the Colón Free Trade Zone, a tax- and import duty-free

facility for business operations, in 1948 confirmed the importance of international goods and financial markets in Panama.[8]

As noted earlier, one of the expected benefits of dollarization is stability in terms of output and prices. Looking at the last decade's performance, Panama's economy shows an average stable growth rate of 4.4%, exceeding the average growth rates of Central American countries, and low variability, 2.8%. The average inflation rate remained very low (1.1%) and stable (0.4% of volatility). In fact, Panama's inflation rate was 2 percentage points lower than the average inflation rate in the United States, resulting in a continuing depreciation of the real exchange rate. Goldfjan and Olivares (2000) point out that Panama's reliance on the service sector (almost 77% of GDP) and the openness of its economy are contributing factors to the depreciation of the real exchange rate when there is a gain in productivity in nontradable goods.

Another characteristic of fully dollarized countries is the adjustment of the financial system to the limitations of the central bank as lender of last resort. In 1970, the liberalization of the financial system in Panama involved the entry of foreign banks. As a result of the financial integration of the economy and perfect capital mobility, banks were free to invest excess funds in Panama or abroad. Without a central bank, foreign banks performed the role of lender of last resort by increasing their exposure to the domestic economy when economic conditions were weak. In addition, domestic banks established lines of credit with foreign banks with branches in Panama to help them respond to liquidity problems (Moreno-Villalaz 1999).

Another potential benefit of full dollarization is the promotion of fiscal discipline. In Panama's case, fiscal deficits were large despite the limitation of domestic financing. Improvements in fiscal management reversed this trend between 1990 and 1995. Public debt financed the fiscal deficit, with 75% as foreign debt. Panama's reputation was damaged in 1987

and 1988 when external debt payments were suspended. Since 1963, Panama has agreed to 13 adjustment programs with the International Monetary Fund (IMF), more than any other Latin American country. Foreign debt began to decline in 1996 thanks to an external bond exchange and a debt reduction operation.

One of the costs of full dollarization is increased vulnerability to external and internal shocks and the lack of flexibility to adjust to these events. In the 1960s, political conflicts over the Canal Zone resulted in the massive withdrawal of domestic deposits, offset by an increase in domestic lending. The increase in international oil prices in 1973 and 1978 caused increases in domestic prices, resulting in high inflation rates. But a major crisis came in 1987 and 1989, as a result of political tensions between the governments of Panama and the United States. Eleven percent of local deposits were withdrawn from the banking system in 1987. As in previous years, banks borrowed abroad and reduced their liquid assets to compensate for the loss in domestic resources, but also reduced lending. In 1988, a US court indicted Manuel Noriega, Panama's military leader, and imposed economic sanctions on the country. Real GDP decreased 15.6% in 1988 and 0.4% in1989, accompanied by large-scale capital flight.[9]

The impact on Panama of the Asian and Russian crises in 1997 and 1998 was relatively mild. In 1997, Panama grew at a lower rate than the regional average, but in 1998 its growth rate was higher than the performance for Latin American countries. The effect of the crises was more pronounced in Panama's dollarized economy because of the increase in interest rates. In 2001, Panama's GDP grew 0.3%, the lowest growth rate in the decade. Contracting US demand and weak domestic investment were among the main contributing factors for this weak performance.

In sum, Panama's fully dollarized economy has low and stable inflation rates along with constant economic growth. Full dollarization enhanced Panama's policy credibility but did not guarantee fiscal discipline. Due to the rigidities imposed by the restrictions in monetary and exchange rate policies, Panama is vulnerable to real, financial and political shocks that affect economic growth.

B. Ecuador's recent experience with full dollarization

Attempts to open the Ecuadorian economy to international trade and capital markets during the 1990s failed for the most part. Large fiscal deficits and increasing external debt led to imbalances that became unsustainable with the decline of world oil prices and the devastating impact of El Niño in 1998. These external shocks resulted in low growth, inflation and liquidity problems in an already fragile banking sector. The country's dependence on oil and agricultural products to generate export revenues limited its ability to service foreign debt, due to declining prices for these commodities.

Several developments contributed to Ecuador's economic collapse in 1999: the devaluation of the sucre in February, a freeze on bank deposits in March, a default on external debt payments in September, and the country's overall political uncertainty and lack of policy direction. In 1999, Ecuador's real GDP declined by 7.3%, inflation reached 52.2% and the currency depreciated 200%. In January 2000, in an environment of social unrest and lacking congressional support for the implementation of structural reforms, then President Jamil Mahuad called for full dollarization to avoid the collapse of the banking system. Days later, Mahuad was deposed. Congress confirmed Gustavo Noboa, the elected vice president, as the new president.

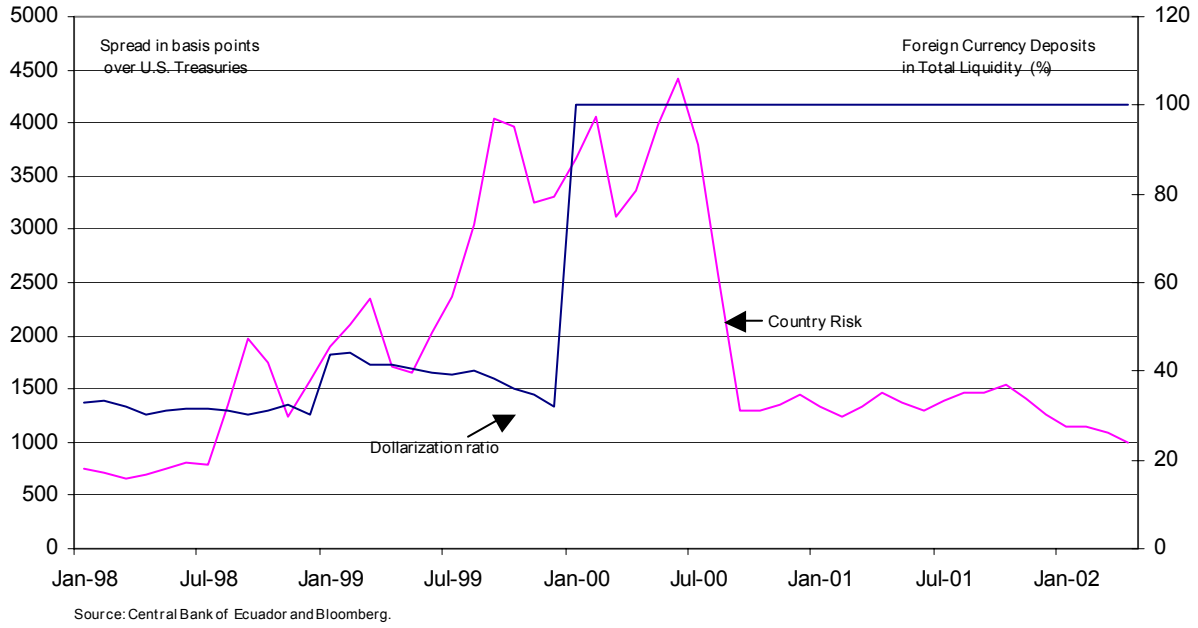
Noboa continued with full dollarization to promote a return to economic stability. In this already partially dollarized economy, the exchange rate was set at 25,000 sucres per US dollar. Along with full dollarization, the Law of Economic Transformation introduced reforms that provided incentives to private investment in the energy sector, encouraged privatization of state enterprises and made labor markets more flexible. The International Monetary Fund signed a stand-by agreement with the Ecuadorian government to support economic stability and recovery, helping to attract additional funding from other multilateral institutions.

Ecuador started enjoying the expected benefits of full dollarization even before the US dollar was officially adopted on September 9, 2000. In a sign of the enhanced credibility of full dollarization, the release of frozen bank deposits in March did not translate into a bank run. Lower inflation in July and economic recovery in the first quarter of 2000 supported the stabilizing effect of full dollarization. Ecuador also restructured its external debt in August 2000, reducing the total external debt ratio from 106% of GDP at the end of 1999 to around 98% in 2000.[10]

In Ecuador, full dollarization eliminated devaluation risk, although country risk did not decline immediately. Graph 3 shows the dollarization ratio and country risk between January 1998 and June 2002. Deposits in foreign currency as percentage of total liquidity is the indicator for dollarization. The indicator for country risk is the interest rate spread in basis points between Ecuador's emerging market bond index over 30-year US treasuries. As can be seen in Graph 3, Ecuador was a partially dollarized economy before the adoption of full dollarization. However, the degree of dollarization was moderate; on average, 3% of total liquidity was in foreign currency deposits in 1999. The graph shows that country risk did not decline with the announcement of full dollarization in January 2000, but did became less volatile after

dollarization took effect in September. Despite the elimination of devaluation risk, country risk is still present and responds to the uncertainties surrounding Ecuador's long-term economic performance.

Graph 3
Ecuador: Dollarization and Country Risk



Source: Central Bank of Ecuador and Bloomberg.

Despite an annual economic growth rate of 5.6% in 2001 and a lower inflation rate of 37.7%, Ecuador is still vulnerable to external shocks due to its dependency on revenues from oil and external financing. The real exchange rate has appreciated since the adoption of full dollarization and non-oil sectors are experiencing competitiveness problems. Full dollarization imposes an additional cost to this vulnerability: the lack of flexibility of economic policies to respond to real, financial and political shocks. To overcome the limitations of the central bank as lender of last resort, banks should establish lines of credit with international institutions and private deposit insurance programs to respond to liquidity problems. However, full dollarization does not guarantee fiscal discipline and Ecuador depends on oil revenues to finance government

expenditures. Tax reform and the restructuring of fiscal accounts are necessary to show the government's commitment to consistent and sustainable policies to attract foreign investment.

An additional challenge to the dollarization process is the circulation of counterfeit currency. To prepare the population for the transition to the US dollar, the government printed guidebooks with information on how to identify false money. In addition, the monetary authorities swapped 5 million one-dollar bills for US golden dollars to offset the rapid deterioration of paper currency, which tends to last only between six and eight months in Ecuador, compared to an average of 18 months in the US. By contrast, the coins are expected to last between 25 and 30 years.[11]

Political consensus will be the greatest challenge for structural reform in Ecuador. President Noboa began negotiating a fiscal reform with political groups, but talks slowed down in anticipation of presidential and congressional elections in October 2002. Full dollarization has helped Ecuador reduce inflation and enhance policy credibility and has supported economic stability in the short run. In the long term, however, further benefits for economic growth and development will depend on structural and institutional reforms.

C. El Salvador's dollarization experiment

On January 1, 2001, the US dollar became official legal tender in El Salvador under the Monetary Integration Law. The domestic currency, the colón, continues to circulate along with the US dollar at an exchange rate of 8.75 per US dollar. Unlike Ecuador, which adopted the US dollar as a policy alternative to bring economic stability, El Salvador has enjoyed economic stability and low inflation rates during recent years. Between 1990 and 2000, real GDP grew an average of 4.4%. The average inflation rate was around 10%, mainly due to relatively higher inflation between 1990 and 1995. El Salvador is one of four investment-graded countries in

Latin America, showing the confidence of international investors. By including full dollarization in their long-term structural plan, El Salvador's monetary authorities expect to increase trade and financial integration with the US and international markets.

In 2001, weak domestic demand, the devastating effects of two major earthquakes and the negative impact of the global slowdown in the export sector held economic growth at 1.8%. Despite these setbacks, the monetary authorities expected to complete the dollarization process successfully. As of March 2002, almost 65% of the money in circulation in the country was in US dollars. The recovery of the US economy, El Salvador's main trading partner, and the improvement of investor confidence due to full dollarization should help boost economic growth.

The adoption of full dollarization responds to diverse factors. In Panama, political and historical factors contributed to the decision to implement full dollarization. In Ecuador, full dollarization represented an alternative to avoid economic collapse and restore economic stability. In El Salvador, full dollarization is expected to support structural reforms boosting investment for continued economic growth and stability.

As experienced in these Latin American countries, full dollarization brings several benefits that contribute to more sustainable economic growth. Full dollarization lowers inflation rates and enhances policy credibility, encouraging foreign investment. It also promotes, but does not guarantee, fiscal discipline, a competitive financial system and economic integration with international markets. Structural programs and institutional reforms are necessary to ensure that short-term stabilization develops into long-term economic growth.

4. Partial or unofficial dollarization in Latin America

In Latin America, the process of unofficial dollarization accelerated after the external debt crisis. In the 1980s, the region struggled with recession, inflation and unemployment. The repeated failure of stabilization policies resulted in higher inflation rates, larger fiscal deficits, deeper external imbalances and continuous capital flight. Under these circumstances, individuals used the US dollar as hard currency to protect their income from the detrimental effects of inflation. As the inflationary situation became chronic, the US dollar was accepted as the unit of account for contracts and large denomination transactions. At the end of the decade, Latin American economies became more dollarized as both domestic and foreign currencies were used as mediums of exchange. This wide acceptance was encouraged even further when some governments allowed deposit accounts and loans in foreign currency.

In the 1990s, Latin American economic policies changed dramatically, from policies based on government intervention to market-oriented reforms. These reforms sought to control inflation and achieve economic stability by fiscal discipline, reduction of the size of the government, privatization, tax reform, and trade and financial liberalization. Partial dollarization accelerated as many Latin American economies integrated with financial and capital international markets.

Graphs 1 and 2 show the increase of the degree of partial dollarization in highly dollarized economies—Argentina, Bolivia, Costa Rica, Honduras, Nicaragua, Paraguay, Peru and Uruguay—between 1990 and 2001.[12] They reveal a common increasing trend in the partial dollarization process; however, the degree and speed of this process differed in each case. The partial dollarization process depends not only on macroeconomic developments—high inflation rates, expectations about rising inflation and depreciation of the domestic currency—but also on

the development of the financial system and structural and institutional reforms. These include the restrictions that monetary authorities impose on the circulation of foreign currency and its use in financial transactions domestically or abroad.[13]

To simplify the discussion, I will assume that there is free circulation of US dollars in the economy and individuals can make transactions with the currency of their choice. The following assessment of the benefits and costs of partial dollarization focuses on its effects on the financial system and economic policy.

A. Benefits and costs of unofficial or partial dollarization

In a situation of chronic inflation, individuals will use the US dollar as hard currency to protect the real value of their income. If foreign currency deposits are not an alternative, individuals have to keep their foreign currency "under the mattress" or send it abroad, resulting in capital flight. By allowing the opening of deposits in foreign currency accounts, monetary authorities promote financial intermediation and diversification. The financial system not only captures new funds and expands its operations, but also helps reverse capital flight.

The opening of foreign currency accounts could also facilitate the integration of the domestic financial market with the rest of the world by lowering the cost of international financial transactions. In the 1990s, several Latin American countries opened their doors to foreign banks as part of the structural reform process. In addition, reform of the financial system included the establishment of regulatory and supervisory institutions, providing more credibility to financial intermediaries. This enhanced credibility and the participation of foreign banks could be a partial explanation for the acceleration of partial dollarization in some countries.

The increase of operations in foreign currency in the financial system comes at a cost, however. The expansion of loans in foreign currency introduces an additional source for currency depreciation risk in the financial system. The depreciation of the domestic currency will have a negative impact on the financial position of local producers with loans in US dollars. Such producers receive domestic currency for their products but have to pay their debt in foreign currency. The depreciation of the domestic currency makes the repayment of the loan in US dollars very expensive, increasing the possibility of loan defaults and weakening the financial position of producers and banks.[14] Argentina is a clear example of the risks involved in foreign currency loans.

Even if banks offer only deposits and not loans in foreign currency, a currency depreciation risk results from the currency mismatch of bank assets and liabilities. Another source of vulnerability for the financial system is the mismatch in the maturities of deposits and loans in foreign currency. According to Baliño et al. (1999), withdrawals of short-term dollar credits from banks forced the Mexican authorities to provide substantial dollar loans to the banking system in early 1995.

Under partial dollarization, the government faces some loss of seigniorage, but in smaller magnitude than in the case of full dollarization. The replacement of domestic currency by foreign currency in transactions limits the revenue that the government receives for printing domestic currency. Several governments have tried to discourage the use of foreign currency by restricting its use for transactions or deposits, and many authorities view the displacement of domestic currency as a loss of sovereignty.[15]

In a partially dollarized economy, policymakers will face several challenges to the conduct of monetary and exchange rate policies. Under partial dollarization, the money supply

includes a component in foreign currency, raising questions about the appropriate exchange rate and monetary regimes. Given the volatility that a devaluation of the domestic currency could cause in the financial sector, many policymakers favor a fixed exchange rate in highly dollarized economies. The sustainability of the exchange rate regime requires fiscal and monetary restraint. In addition, the central bank's credibility to maintain the pegged exchange rate will depend on having sufficient foreign reserves to support the peg.

As an alternative to direct exchange rate management, some partially dollarized countries in Latin America have implemented monetary policies under flexible exchange rates by managing their domestic money supplies or targeting inflation rates. In such cases, the question for policymakers is to identify the role of foreign currency deposits in the choice of intermediate targets in monetary policy. The association of foreign currency deposits with the final target (for many Latin American countries, the inflation rate) and its inclusion in the formulation of the monetary program is an empirical question specific to each country.

Under partial dollarization, the financial system will receive intermediate capital flows, helping to bring about financial deepening. However, the volatility of capital flows can impose serious problems to the development of the financial system. As Baliño et al. (1999) point out, bank intermediation of capital inflows will result in an increase in gross official international reserves and required reserves with the monetary authorities. Unless the central bank holds this increase in required reserves in foreign currency, the intermediation of capital inflows will deteriorate the foreign-currency-denominated position of the central bank. In addition, the intermediation of capital flows under the fractional reserve banking system implies that the total volume of dollar- denominated assets and liabilities will greatly exceed the volume of net dollar assets held in the economy. These two effects weaken the position of the central bank as lender

of last resort in a partially dollarized economy, contributing to the vulnerability of the financial system to capital flows.

In sum, partial dollarization could promote financial deepening and integration with international markets. It not only encourages financial intermediation, but also the reversal of capital flight. However, policymakers in a dollarized economy face several challenges, including the vulnerability of the financial system to capital flows and depreciation risk, the weakening of the central bank's effectiveness as lender of last resort, and the reformulation of monetary and exchange rate policies to include the presence of foreign currency deposits. Regulatory and supervisory institutions and consistent economic policies are necessary to offset these vulnerabilities and other risks. To illustrate these points, the following section reviews the Convertibility Plan in Argentina in a context of partial dollarization.

B. The Convertibility Plan in Argentina

After the debt crisis and a series of failed stabilization programs in the 1980s, the Argentine economy went through a severe recession and hyperinflation. In 1989, GDP shrank 6.9% and the inflation rate soared above 3,000%. The policy response implemented by Economy Minister Domingo Cavallo in 1991 was the Convertibility Plan, which fixed the exchange rate at one Argentine peso per US dollar and required the central bank to back two-thirds of the monetary base with international reserves.[16]

The Convertibility Plan eliminated the possibility of inflationary financing of the fiscal deficit and limited the role of the central bank as lender of last resort. The plan's sustainability depended upon fiscal discipline, surplus in the current account, and a stable financial sector to support investment and savings. The financing of economic growth required a positive balance

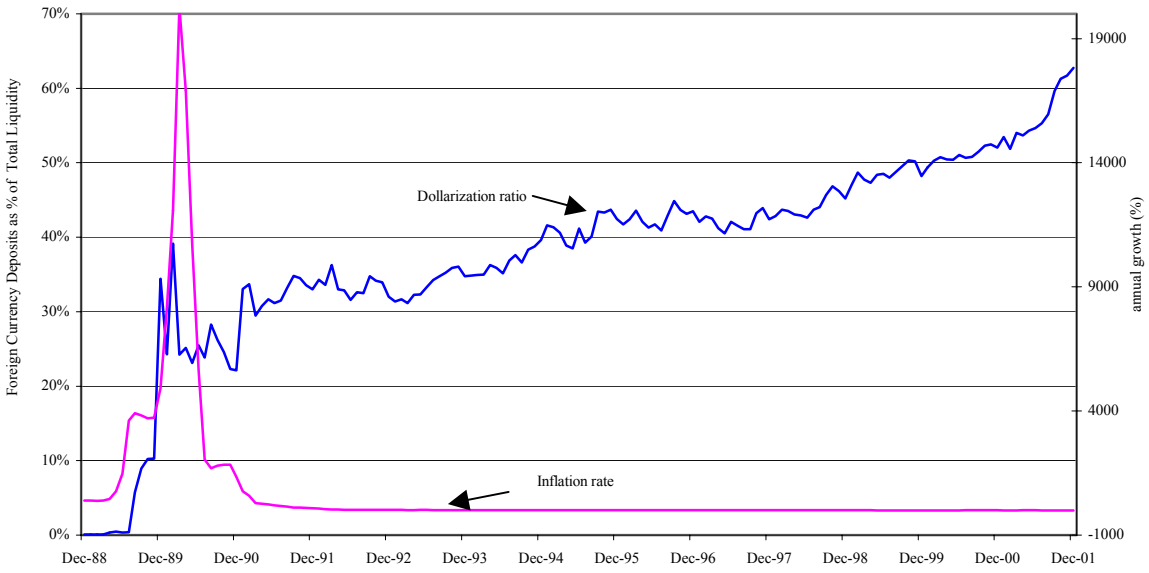
of international reserves involving a surplus in the current account and/or in the capital account. Convertibility required either a competitive economy or a continuous flow of capital in the form of foreign investment or net borrowing. In other words, fixing the exchange rate meant that change in money supply was no longer an instrument of economic policy. Convertibility provided instant credibility in that it prevented the government from printing money to finance deficit spending.

Along with convertibility, additional reforms sought to strengthen the financial sector and open the economy to international capital markets. Tax reform and the privatization of public enterprises were aimed toward creating a more efficient public sector, while trade liberalization brought the reduction of tariffs and elimination of import quotas. Argentina joined Brazil, Paraguay and Uruguay in the Mercosur customs union in an effort to promote trade. As a sign of renewed confidence in Argentina, the government was able to return to voluntary financing of the external public debt, which had been rescheduled under the Brady Plan.

Strengthening the banking sector was fundamental to the success of the Convertibility Plan because it imposed strict limitations on the ability of the central bank to act as the lender of last resort. Consequently, the government initiated a series of reforms that encouraged competition, strengthened supervision and regulation, and invited foreign entry into the banking sector. Central bank regulations imposed capital requirements that were stricter than those recommended by the Basle Committee because of Argentina's past history of macroeconomic volatility. Many argued that the presence of foreign banks would provide depositors with an extra level of confidence, and by 2001, nine of the 10 largest private banks in the country were foreign owned.

Before implementation of the Convertibility Plan, Argentina was a partially dollarized economy. Graph 4 shows the degree of dollarization and inflation in Argentina between 1988 and 2001. In this graph, the share of deposits in foreign currency in total liquidity is the indicator of the degree of dollarization. The graph shows a hyperinflationary situation in 1989 and its stabilization after implementation of the Convertibility Plan in April 1991. From 1992 on, inflation declined steadily, reaching one-digit numbers and even deflation.

Graph 4
Argentina: Dollarization and Inflation Rate



Source: Central Bank of Argentina.

Nevertheless, low inflation did not discourage partial dollarization in Argentina. Deposits in foreign currency represented 33% of total liquidity in December 1991 and remained below 40% until the beginning of 1995. The entry of foreign banks and the increase in capital flows from the privatization process could have encouraged partial dollarization and one of its expected benefits, the promotion of financial intermediation. Between April 1991 and December

1994, total deposits increased more than 300%. This performance could also result from the success of convertibility in encouraging the reversal of capital flight and greater confidence in the financial system.

The limitations of convertibility became apparent after Argentina was hit by a series of external economic shocks beginning in 1995. The tequila crisis in early 1995, following Mexico's devaluation of its currency in December 1994, resulted in a run on bank deposits, a loss of international reserves and a recession. Graph 4 shows an increase in the dollarization ratio from 35% in January 1994 to 42% in December 1995, remaining at this level for the next three years. As result of the Mexican crisis, total deposits and deposits in foreign currency declined 10% and 7% in the first eight months of 1995. These deposits returned to pre-crisis levels later in the year after the introduction of financial reforms that, along with multilateral commitments, restored investor confidence.

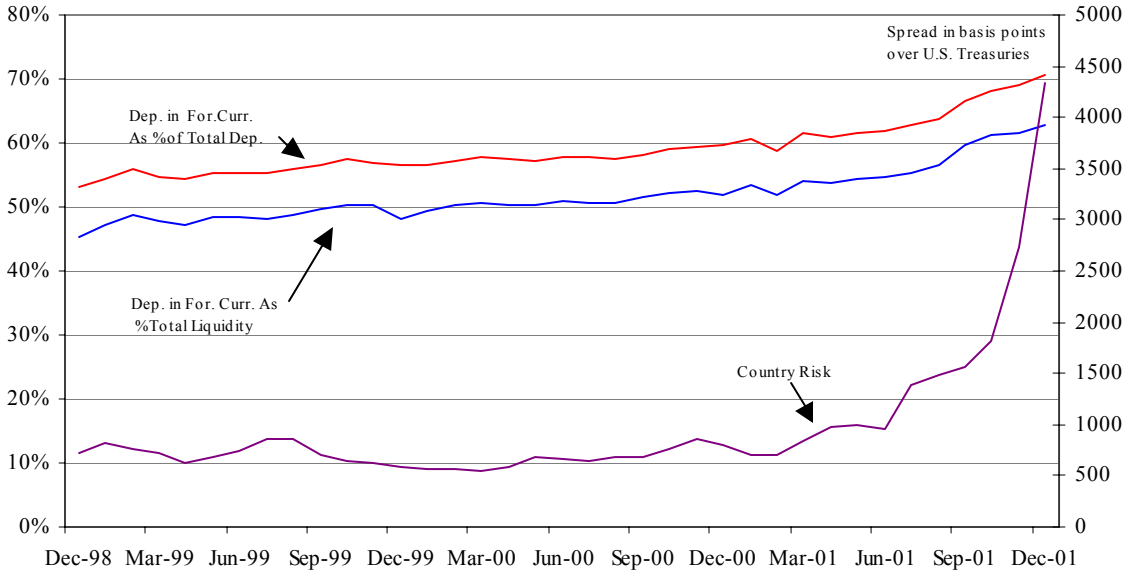
Additional shocks occurred in 1998 with the Asian and Russian crises, and again in 1999, when Brazil devalued its currency. Initially, the devaluation of the real raised some doubts in Argentina about the sustainability of the currency board system. Argentina now faced renewed competitive pressure from Brazil, its largest trading partner. The depositor's fear of devaluation might explain the increase of the dollarization ratio to 45% in 1998, reaching 50% in October 1999. Looking at the performance of deposits between December 1998 and December 1999, we see that total deposits in foreign currency increased 9%, while deposits in domestic currency fell 5%. Expectations that Argentina would follow Brazil in devaluing its currency could explain this exchange to safer foreign currency deposits.

The government's loose fiscal policy began to undermine confidence in convertibility as debt levels continued to climb in 2000. The unwillingness of the government to address the

fiscal problem led to uncertainty and a loss of credibility among investors, and resulted in capital outflows. The country risk premium increased, hurting the performance of domestic financial markets and raising the cost of accessing funds in the international markets. All of these factors exacerbated the recession. In December 2000, the IMF approved a $39.7 billion financial assistance package to restore credibility to Argentina's economic program. But by this time, investor concern about the government's ability to repay its foreign debt had caused the country's risk premium to rise again.

Graph 5 shows partial dollarization and country risk in the last years of the Convertibility Plan. Partial dollarization involves two indicators: the share of foreign deposits in total liquidity, as in the previous graph, and the share of foreign currency deposits in total deposits. Country risk is the interest rate spread between Argentina's bond index and 30-year US Treasury bonds. The graph reveals a slight increase in the share of foreign currency deposits in total liquidity, which reached 52%. In addition, 57% of total deposits were in foreign currency. The conversion from domestic currency deposits to foreign currency deposits continued. Even though total deposits increased 5%, domestic currency deposits declined around 3% and foreign currency deposits increased almost 12%. This switch to foreign currency deposits, combined with increases in country risk and partial dollarization, point to the lack of confidence of international and local investors in the sustainability of the Convertibility Plan.

Graph 5
Argentina: Dollarization and Country Risk 1998-2001



Source: Central Bank of Argentina and Bloomberg.

In 2001, as political shocks took their toll on investor confidence, the government undertook a series of drastic measures, including debt swaps, a "zero-deficit" policy, and a deposit freeze designed to avoid default or devaluation at all costs. In early December, after the IMF refused to release a $1.2 billion dollar funding tranche, the government announced restrictions on bank withdrawals to halt the accelerating run on deposits. Not surprisingly, many Argentines were unhappy with the new measures, and the crisis spilled out of control amid violent street demonstrations. Under a succession of new presidents, the government defaulted on its foreign debt and then scrapped the Convertibility Plan in January 2002.

As we can see in Graph 5, the dollarization process accelerated in 2001 and country risk increased by 3500 basis points. Total deposits and domestic currency deposits declined 16% and 39%, respectively, but the decline in foreign currency deposits was less than 1%. Despite growing concerns about the risk of devaluation, individuals did not worry about confiscation of their deposits at least until mid 2001. In fact, the decline in total deposits and domestic currency deposits occurred in the last six months of 2001, coinciding with the acceleration of country risk.

In December 2001, 67% of total liquidity and 71% of total deposits were denominated in US dollars. The question about the role of partial dollarization in the deepening of Argentina's economic crisis will be the subject of future research.

The Convertibility Plan ended a cycle of hyperinflation and brought credibility to Argentine monetary policy by linking the peso to the US dollar. After convertibility was implemented, foreign investment surged and the economy recorded robust economic growth. Internal savings and external capital flows financed investment and production as well as fiscal deficits. But as external shocks hit the country and uncertainty grew about its capacity to finance the public debt, capital flows dried up and convertibility was no longer sustainable. The economic, financial and social costs of the collapse of convertibility have been drastic and will endure for many years.

Even when convertibility was successful, individuals kept their assets in foreign currency. Contrary to expectations, lower inflation did not discourage individuals from holding foreign currency deposits. This partial dollarization during the successful years of the Convertibility Plan could be the result of the entry of foreign banks and capital inflows. However, the acceleration of partial dollarization during times of uncertainty and economic instability suggests that Argentines had serious concerns about the sustainability of the Convertibility Plan. It is important to note that even without an increase in the inflation rate the dollarization ratio began to rise at the very start of the crisis in Argentina. International investor confidence, as revealed in country risk indicators, was similar to depositors' confidence in convertibility.[17]

5. Concluding remarks

The experiences of Panama, Ecuador and El Salvador show that full dollarization can help countries achieve lower inflation, economic stability and growth. Full dollarization enhances policy credibility and encourages foreign investment. It promotes fiscal discipline, a competitive financial system and economic integration with international markets. However, countries implementing full dollarization must establish structural programs and institutional reforms to ensure that short-term stability develops into long-term economic growth. In Ecuador and El Salvador, full dollarization is a relatively recent development. Specific conclusions regarding the success of the policy there will come only with time.

Countries under partial dollarization can benefit from the promotion of financial intermediation and integration with international markets. However, policymakers in partially dollarized economies face several challenges: the vulnerability of the financial system to capital flows and depreciation risk, the weakening of the central bank's effectiveness as lender of last resort, and the reformulation of monetary and exchange rate policies to include the presence of foreign currency deposits. Regulatory and supervisory institutions and consistent economic policies are necessary to offset these vulnerabilities and other risks. Finally, partial dollarization provides important information about citizens' preferences for asset allocation and their expectations about the performance of the economy. Its discouragement would limit information that policymakers can use to develop more efficient economic policies.

Notes

[1] See Guidotti and Rodríguez (1992), and Clements and Schwartz (1993) for explanations of the irreversibility of the demand for foreign currency.
[2] Baliño et al. (1999) presents alternative sources for this information.
[3] One source for deposits held abroad is the *Federal Reserve Bulletin*. This publication of the Federal Reserve System contains statistics on deposits by foreigners in US banks by country of residence.
[4] "Putting the Banks in Charge," *Latin Finance*, June 2002, page 39.
[5] See Berg and Borensztein (2000) for further discussion.
[6] Rose's study focuses on the impact of currency unions on international trade. It also finds a small negative effect of exchange rate volatility.
[7] The exchange rate was set at one balboa to one US dollar.
[8] Bogetic (2000), Goldfajn and Olivares (2000), and Moreno-Villalaz (1999) provide a good discussion of Panama's experience with full dollarization.
[9] See Moreno-Villalaz (1999) for a detailed explanation.
[10] According to the Economic Intelligence Unit, the total external debt/GDP ratio was estimated at 75% in 2001.
[11] This is not an increase in money supply because imported coins have been paid in dollars.
[12] According to Baliño et al. (1999), highly dollarized economies are those where foreign currency deposits represent more than 30% of broad money (or total liquidity). With the exception of Honduras, Graphs 1 and 2 show highly dollarized countries.
[13] See Savastano (1996) for further discussion of partial dollarization in the early 1990s.
[14] The exception to this case would be an exporter or individual whose income is denominated in US dollars.
[15] In Mexico and Bolivia, some financial alternatives in domestic currency offered an indexation mechanism to keep the real value of deposits.
[16] See Quispe-Agnoli and Kay (2002) for a discussion of the crisis in Argentina.
[17] Information about deposits in foreign currency is available through December 2001.

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