The Implications of Currency Substitution Experiencesin Latin America and in Eastern Europe for Cuba

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I. Introduction

This paper assesses the experience of dollarization and currency substitution in Latin America and in Eastern Europe and analyzes the implications of this phenomena for Cuba. Under conditions of high inflation, the ability of national currencies to function adequately as a store of value, a unit of account, and a means of exchange is hindered. In these circumstances, the domestic currency tends first to be displaced as a store of value by a stableand convertible currency (usually in the form of interest-bearing foreign currency deposits); this phenomenon is known in the literature as dollarization.[2] Long periods of high inflation induce the public also to conduct transactions in foreign currency, a process which is usually referred in the literature as currency substitution. Both types of experiences are occurring in Cuba. SectionII summarizes the measures taken by the Castro Government to allow the circulation of freely convertible currencies (mostly U.S. dollars) in Cuba. SectionIII discusses the reasons of why dollarization and currency substitution take place, and the form and extent that it has taken place in Latin America and European countries. SectionIV discusses the advantages and disadvantages of allowing a foreign currency as legal tender. SectionV draws conclusions from the experience of other countries for Cuba's recent dollarization and currency substitution developments and the implications for the future.

II. Cuba's Experience with Dollarization and Currency Substitution

Prior to the summer of 1993, U.S. dollars entered Cuba through remittances or were brought into the country by foreign visitors, investors, and by Cuban residents working abroad.[3] The Cuban Government exchanged the U.S. dollars for pesos at the official exchange rate of Ps1.35=US$1. As scarcity grew in Cuba, the black market expanded and its transactions became increasingly quoted in U.S. dollars. The U.S. dollar also became the only accepted means of payment in this market, notwithstanding the penalties imposed by the Castro Government over the illegal use of the U.S. dollar. Over time the peso depreciated sharply in the black market and the exchange rate reached about Ps60=US$1 in early 1993.

In a partial attempt to legalize illegal exchange transactions, in June 1993 the Castro Government authorized certain groups of Cuban citizens (working abroad, in Cuban tourist facilities, and in joint ventures in the island) to hold U.S. dollars and use them in special state stores where goods not easily found in the rest of the country could be purchased.[4] The authorization of using convertible currencies in state stores followed a long standing practice in centralized economies as discussed in SectionIII. Shortly thereafter, the right to hold U.S. dollars was extended to the rest of the Cuban population through the decree-law of August13, 1993 that decriminalized the possession of freely convertible currencies for all Cuban residents. It permitted Cubans who possessed or received freely convertible currency to exchange them for foreign exchange certificates, open bank accounts in freely convertible currency, purchase goods and services in state stores authorized for this purpose, and exchange foreign currency for local currency at the preferential exchange rate in effect at the time of the transaction.

It appears that through these measures the Cuban Government expected to be able to increase its earnings of freely convertible currency by bringing into the official economy foreign exchange transactions so as to compensate for the disappearance of Soviet aid and the decline in sugar export earnings. However, the potential annual foreign exchange earnings from remittances, tourism, and taxes on packages on food and medicines sent to Cuba by expatriates is likely to be significantly less than the decline in foreign exchange earnings from sugar exports or from the Soviet aid received by Cuba in previous years (which amounted to several U.S. billions on an annual basis). Mesa-Lago has estimated that the potential annual earnings from remittances, tourism, and taxes to be only between US$365 million to US$650 million.[5]

No official information is available about the foreign exchange receipts of Cuba following the issuance of the August 1993 decree, but it appears that the Castro Government has been disappointed with the results. No doubt the Cuban residents who earned U.S. dollars were reluctant to exchange them at a "preferential exchange rate" that was established at Ps1=US$1 or were scared to open bank accounts in convertible currencies because of fear of subsequent confiscation. Moreover, the fact that prices were increased sharply in the special state stores in June 1993 at the same time that the circulation of U.S. dollars was permitted, did not contribute to bring foreign currency into the official economy.

During this period, black market operations have reportedly continue to grow in light of the growing scarcity and transactions have become increasingly dollarized. The peso continued to devalue in the black market rate and the peso/U.S. dollar exchange rate reached Ps100-120 = US$1, something which, of course, did not encourage the population to hand over their U.S. dollars at the so-called preferential rate. Apparently, few foreign currency bank accounts have been opened for fear of confiscation. Only state enterprises that have foreign exchange transactions have opened foreign currency accounts with the public holding U.S. dollars outside the banking system.

Complicating matters for the Government was the fact that a sharp difference was being established in the living standards between those who had access to U.S. dollars and those who did not. For example, absurd situations have arisen where low skill workers in the tourism sector earn incomes that exceed by several factors the income of professionals who are being paid in Cuban pesos. To address this growing inequality and because of the fear of losing control over the segment of the population earning U.S. dollars, the Castro Government seems to have reversed its policy regarding the circulation of U.S. dollars as part of the measures announced by the National Assembly on May1-2, 1994. The Government announced that revenue and expenditure cutting measures aimed at reducing a large public sector deficit would be implemented, and that consideration was being given to a monetary reform and to measures to encourage output and savings. At the same time, the Government announced the intention to "increase the control" over the circulation of freely convertible currencies in Cuba, which does not augur well for the legality of the circulation of U.S. dollars in Cuba.[6] The Government's idea apparently is to force the earners or holders of U.S. dollars to exchange them for "convertible pesos" that are to be issued in the future and could be used in the special state stores. The Government has not yet announced at what rate it will exchange convertible pesos for U.S. dollars, or whether the pesos already in circulation will be exchanged for convertible pesos at a discount rate as part of a monetary reform.

III. Dollarization and Currency Substitution Experiences in Latin America and in Eastern Europe[7]

In Latin America and in other countries, dollarization and currency substitution experiences have been associated with inflationary episodes. As Calvo and Végh note causal evidence suggests that foreign currency is first used as a store of value under high inflationary conditions as the domestic currency quickly loses its value. In fact, in a number of high-inflation countries, the store of value function of domestic currency has tended to disappear to a large extent. As high inflation continues, the prices of some large transactions start to be quoted in foreign currency (e.g., real estate and cars) and the domestic currency also loses ground as a unit of account. The last stage of this process is when some transactions begin to be performed in foreign currency, although the experience in Latin America has been that domestic currency retains its function as a unit of account and medium of exchange for most nondurable goods.

In some Latin American countries the dollarization process has begun as an illegal activity, but where it has occurred more extensively is in countries that have not imposed restrictions on maintaining foreign currency deposits in the domestic financial system. These deposits have been frequently permitted as a means of inducing the repatriation of capital that had previously flown from the country, or to attain an improvement in the net foreign exchange position of the Central Bank and strengthen the process of financial intermediation. As Savastano (June 1992) has emphasized, it is important to perceive dollarization of the financial system and the occurrence of capital flight as two different instances of a broader process that have opposite effects on the foreign exchange holdings of the country's central bank.

Econometric research on currency substitution explains its occurrence typically as a function of exchange rate expectations, interest rate differentials, and a stock adjustment mechanism that is represented by a lagged dependent variable.[8] Clements and Schwartz (November 1993) added a deterministic time trend to this type of model to better capture inertia factors in the process of currency substitution. The econometric results corroborate that the expectation of a devaluation of the domestic currency, or the existence of a real interest rate differential against the country in question induces currency substitution. Econometric studies show different values for the coefficients of the variables representing exchange rate expectations and interest rate differentials for various countries that have experienced currency substitution. In this regard, the findings of Clements and Schwartz are particularly interesting. Their estimates for the coefficients for exchange rate expectations and interest rate differentials for the case of Bolivia are quite small but their estimate for the stock adjustment coefficient is much larger. The large coefficient for the stock adjustment coefficient implies that economic agents do not immediately and fully adjust their holdings of foreign currency to variations in relative yields of foreign currency balances in a country that has experienced high inflation and extensive dollarization. This suggests that there exists a strong inertia in the process of currency substitution in Bolivia and that it would be difficulty to reverse such a trend in the future. This is an experience that is shared by other South American countries as noted below.

Some of the literature on currency substitution has tried to explain the irreversibility of currency substitution once an economy has reached a certain level of dollarization. Emphasis is put in this literature on the role of financial innovation and financial adaptation. It has been noted that creating financial products (like foreign currency deposits in the domestic banking system) is costly and requires a learning process. Once this investment has been done, the public will continue to use the new financial instruments even if the incentives for currency substitution are reversed. This implies externalities or increasing returns to scale of currency substitution.

Guidotti and Rodríguez (1992) have developed a model to explain the irreversibility (hysteresis) of currency substitution, which stresses the role of switching costs involved in changing the currency denomination in transactions. They noted that the ratio of foreign deposits to total deposits in Bolivia, Mexico, Perú, and Uruguay did not always respond positively to the inflation differential vis-à-vis the United States. In their model, the transaction costs of currency substitution define a band for the inflation differential within which there will be no incentive to switch between currencies. As soon as the inflation differential exceeds the upper value of the band, the local currency will gradually disappear since economies of scale in using the foreign currency favor the dollarization process. The basic hypothesis derived from the model is that it is the level of inflation rather than a rise in inflation which determines dollarization.

Comparing the currency substitution process in Bolivia to those of Mexico, Perú, and Uruguay, Savastano highlighted the importance of institutional factors in shaping this process. In all these countries foreign currency deposits were authorized to be held by the public in the domestic banking system in the aftermath of serious external imbalances. Thus, the measure was either preceded or accompanied by a large devaluation aimed at restoring macroeconomic equilibrium and to stem speculative attacks against the domestic currency at the time foreign exchange controls were being lifted.[9]

The extent of currency substitution varied in these countries during the period analyzed by Savastano. In Bolivia from 1970 to 1982, the stock of foreign currency deposits constituted less than 20percent of the broadly defined money supply (M2).[10] Only in 1982 it increased to 40percent prior to their elimination. In Mexico this ratio rose from less than 5percent at the beginning of the decade to more that 15percent in the late 1970s-early 1980s when the so-called "mex-dollar" deposit rate and exchange restrictions were liberalized. This ratio reached a peak of 36percent in June 1982 during the time period studied by Savastano. In Perú and Uruguay the dollarization was more rapid and pronounced. In Perú the ratio of foreign currency deposits to M2 rose from less than 5percent in the mid-1970s to over 100percent after December 1984 prior to their elimination in December 1985. In Uruguay the ratio rose from less than 20percent in the early 1970s to close to 200percent by the mid-1980s.

In Bolivia (1982), Mexico (1982), and Perú (1985) the authorities attempted to halt the currency substitution process abruptly when they converted the stock of foreign currency deposits into domestic money. In all three cases, the reimposition of foreign exchange controls was accompanied by a large devaluation and the subsequent adoption of a fixed exchange rate. However, efforts to reverse currency substitution have not been very successful. Melvin and Fenkse (June 1992) have argued that in the case of Bolivia they stimulated capital flight and have driven the dollarized economy underground. In fact, Bolivia reintroduced the possibility of opening foreign currency deposits in the country after the 1984-85 hyperinflation ended. A similar measure was introduced by Perú as part of the August 1990 attempt to regain price stability. The Governments of these two countries had to use a foreign exchange collateral facility to signal their willingness to honor the convertibility of the deposits and to regain the confidence of the public.

Currency substitution also has a long history in Eastern Europe. Economic agents in these countries moved into more stableWestern currencies in times of economic and political turmoil and there also were cases of currency substitution promoted by governments.[11] To better control the foreign exchange which had been illegally circulating within the country, centrally planned economies began to gradually liberalize the use of foreign exchange for transactions or savings purposes in the 1970s. In the 1980s in all centrally planned countries of Eastern Europe (Bulgaria, former Czechoslovakia, German Democratic Republic, Hungary, Poland, and Romania) except in the former U.S.S.R., private individuals could hold freely foreign exchange in cash balances and in foreign currency deposits within the country. On the other hand, it was forbidden by law to hold foreign currency deposits abroad.

In addition to authorizing foreign currency deposits in the domestic banking system, the governments of centrally planned economies distributed foreign exchange coupons in exchange for hard currencies which could be used to buy goods in Western currency shops. The issue of these coupons served primarily to absorb the foreign exchange balances held by private individuals and to control their use. The coupon system, as noted by Brand, was ideologically easier to justifythan accepting the implicit replacement of socialist countries' currencies by hard Western currencies.

Similarly to what has happened in Cuba, the introduction of the coupon system did not succeed in reducing significantly illegal black market transactions in foreign exchange because the coupons could not be used in all transactions and were subject to the political risk of government confiscation. After the economic liberalization of Eastern European countries, the coupon system disappeared for all practical purposes but currency substitution continued. For example, by abolishing the coupon system in 1987, the former Soviet Union implicitly authorized the use of hard currencies for transaction purposes for its residents even though these transactions remained formally impeded by law (Souvorov 1992).

In general, the currency substitution experience in centrally planned economies in Europe show some differences with that of Latin America. The degree of currency substitution in centrally planned economies prior to the liberalization of these economies was smaller than that observed in Latin

America. Brand refers to some studies done for European countries which estimated that black market transactions in these countries were equivalent to about 3.5percent of imports from the west. Moreover, dollarization has fallen substantially in the 1990s in the aftermath of successful stabilization plans in Estonia, Lithuania, Mongolia, and Poland.[12] Sahay and Végh have concluded that because foreign currency deposits reflect mainly a portfolio choice, the fall in dollarization can be primarily attributed to higher real returns on domestic currency assets, as a result of lower inflation and more market-determined interest rates.

IV. Advantages and Disadvantages of Currency Substitution[13]

An in-depth analysis of the macroeconomic performance of the countries which have experienced dollarization and currency substitution is beyond the scope of this paper. However, international experience shows that dollarization and currency substitution are reactions to external and price disequilibria, and that they cannot be relied upon to solve these problems. In addition, international experience shows that both, market economies and economies in transition from central planning to market economies that have succeeded in stabilizing their economies have done it through the implementation of strong fiscal adjustment programs accompanied by a monetary policy geared to protect the net international reserve position of the Central Bank and restrict price pressures. We turn now to the important question of whether a foreign currency should be permitted or not as legal tender when an economy is affected by dollarization and currency substitution.

A. Advantages of Permitting Currency Substitution and/or Allowing a Foreign Currency as Legal Tender

Under inflationary conditions economic agents certainly benefit from switching from domestic currency to a convertible currency to protect the value of their financial savings. This is true whether the agent making the switch is a sophisticated investor or a Cuban guajiro who demands to be paid for his produce in U.S. dollars and wants to hold his savings in a foreign currency. It should be kept in mind, as noted above, that a process of currency substitution under highly inflationary conditions is likely to increase income inequality with the relative income of those who do not have access to foreign currency income being negatively affected.

From a macroeconomic perspective, it can be argued that allowing a foreign currency as legal tender enforces a stronger fiscal discipline by limiting the extent that a public sector deficit can be financed by the Central Bank, particularly if the dollarization is total like in the case of Panama. In fact, Moreno (1992) has advocated the dollarization of the Cuban economy as the most adequate system for a small and destined to be open economy. Sanguinetty and Moreno (1994) also have advocated permitting the circulation of the U.S. dollar in Cuba and creating a dual monetary system during the transition from a centrally planned economy to a market economy because it would limit the power of the Government to mismanage the economy.

Another argument that has been used in favor of adopting a foreign currency as legal tender is that allowing the circulation of a foreign currency provides the economy with an attractive means of payment and helps maintain the level of output because the distortion of the information carried by prices is mitigated (Rotowski 1992). Rotowski argued that, under high inflation, authorities may loose little when they give up the attempt to obtain inflation tax revenue because the potential for this kind of revenue might be small due to the decline that already has taken place in the demand for money. Rotowski noted that in the limit, an economy that is unable to use a "secondary" currency will end up with a low output-barter equilibrium. To back up his thesis Rotowski referred to the experience in Russia with the use of a second, stablecurrency (the chevonets) in the 1920s, 15months before full stabilization was carried out. Industrial production increased by 30percent in the last year of hyperinflation in the Soviet Union, an experience that was very different from the cases of Germany and Poland during their periods of hyperinflation in the early 1920s.

Finally, an argument that sometimes is made in favor of permitting currency substitution in the case of high inflation countries is that the Government, in order to avoid a drastic decline in liquidity in the absence of currency substitution, must provide an alternative form of a stablenear-money whose consequences might be less attractive than those of currency substitution. Liviatan (1992) points that this was, in fact, the route taken by Brazil which has developed a complex market of indexed financial instruments and a system of daily repurchase agreements which enable an effective hedge against inflation. While it is true that the indexed (Brazilian type) system does not involve loss of seigniorage to foreign governments, as is in the case of currency substitution, it involves other costs which may result in a less efficient outcome. Liviatan points out that, specifically, the indexed regime requires a technology for very frequent conversions of near-monies into means of payment (and vice versa) which require a costly financial infrastructure and specialized manpower. It also requires thorough involvement of the Government in financial markets. Of course, this argument in favor of currency substitution is based on the existence of high inflation conditions and it could be argued that this situation should be avoided at the onset.

B. Disadvantages of Permitting Currency Substitution and/or of Allowing a Foreign Currency as Legal Tender

Countries experiencing currency substitution are likely to be more vulnerable to macroeconomic imbalances and economic shocks than those not affected by this phenomenon. Currency substitution leads to a downward shift in the demand for domestic money, transferring seigniorage abroad and narrowing the base of the inflation tax.[14] As a result, in the event of exogenous shocks or policy slippages these economies are more likely to experience higher and more volatile inflation. In effect, what it is argued by those making this point (and in contrast to Rotowski's thesis) is that the inflation rate has not reached such a level that the basis for the inflation tax has been greatly diminished. As noted by Figuerola (1994), these effects are intensified if there is financial disintermediation and capital flight which are the likely results if restrictions on foreign currency holdings are imposed in an attempt to repress the process of dollarization. The effectiveness of fiscal policy is impaired if dollarization of an economy is associated with an increase of informal activities (e.g., through smuggling of goods or private remittances through nonbank channels) because the base for levying international trade, domestic sales, and income taxes diminishes with increasing dollarization.

The effectiveness of monetary policy also is reduced with currency substitution (or the existence of a foreign currency as legal tender), even with the adoption of a flexible exchange rate regime, thus increasing the vulnerability of these economies to external shocks and policy slippages. If money supply (expressed in domestic currency) includes to a considerable extent foreign currency balances, movements in the exchange rate--which affect the currency composition of the money stock--will make monetary aggregates more difficult to control. In the absence of a legal authorization to hold foreign currency deposits, foreign exchange circulating within the economy is outside the direct control of the authorities. These difficulties in operating monetary policy are increased by the fact that currency substitution makes the demand for money more unstableand more difficult to predict. Finally, the possible use of monetary policy to reactivate the economy under conditions of price and wage stickiness is limited, too.

Under conditions of currency substitution, the absence of a lender of last resort for foreign currency operations also may have adverse effects on economic stability. Banks will have limited recourse to the Central Bank to solve liquidity problems associated with a withdrawal of foreign currency deposits. However, if the authorities are willing to accept a devaluation of the currency, the Central Bank can act as a lender of last resort by buying the foreign currency needed to support the banking system in the exchange market.

Economies with currency substitution may be more vulnerable to external shocks because of the effect of dollarization on the stability of the exchange market. Figuerola points out that if economic agents are more willing to shift currencies in the event of shocks, the exchange rate is bound to be more volatile (assuming that the Central Bank is not able to accommodate these shifts through exchange market intervention). Currency substitution also reduces the effectiveness of exchange rate policy actions by impairing the functioning of the expenditure-reducing and expenditure-switching effects of an exchange rate depreciation. If part of the wealth of residents of a country is held in foreign currency, the contractionary wealth effect (in domestic currency terms) of a depreciation cannot be fully effective. The ultimate effect will depend on the extent to which foreign currency holdings are used for purchases in domestic currency; the effectiveness of an exchange rate depreciation will be reduced if most residents maintain foreign currency balances essentially to finance transactions denominated in foreign currency. The larger the share of foreign currency assets in the total financial wealth of a country, the lower the expenditure switching effect of a devaluation will be.

V. The Implications for Cuba of the Dollarization and Currency Substitution Experience in Other Countries

It is difficult to assess the extent and the experience of Cuba with currency substitution after the issuance of the August 1993 decree-law because of lack of information. One would need to obtain monetary data regarding the value of foreign currency deposits in the banking system and also estimates of U.S. currency in circulation in Cuba to assess the degree of dollarization that has taken place in the country. These are probably the only two forms that dollarization has taken place because it is unlikely that many Cuban residents hold foreign currency deposits abroad.

Anecdotical information suggests that U.S. dollars are not only being used as store of value and unit of account in Cuba, but also as a medium of exchange for some transactions. However, regardless of the extent that dollarization and currency substitution that have taken place in Cuba, it is unlikely that the Government was successful in bringing the U.S. dollars circulating in the country into the formal economy because of the unattractive terms that it offered (i.e., the exchange rate and the prices at state stores). Moreover, the apparent policy reversal that was announced in May 1994 by the Castro Government confirmed the fears of holders of U.S. dollars that were apprehensive of a possible confiscation by the Government.

It will probably be difficult for the Government to eradicate the circulation of U.S. dollars in the economy given the shortages and the large monetary overhang that Cuba reportedly is experiencing. As a result, there is likely to be a certain amount of dollarization in the foreseeable future in Cuba. However, if a strong fiscal adjustment program is implemented, and is supported by appropriate monetary and exchange rate policies and accompanied by structural reforms to facilitate the transition from a centrally planned economy to a market economy, it is possible that the dollarization and currency substitution process will be reversed to some extent as the experience of some formerly centrally planned economies that have had successful stabilization programs show.

If fundamental macroeconomic policies are adequate, the question of whether or not to promote dollarization and currency substitution in Cuba becomes a secondary one. In general, a stronger argument can probably be made for maintaining a domestic currency in Cuba than for promoting a deepening of dollarization and currency substitution in the Cuban economy. With a time horizon in mind beyond the transition period from a centrally planned economy to a market economy, the disadvantages of a weakening in the effectiveness of monetary and exchange rate policies would seem to outweigh the potential advantages provided by currency substitution of imposing a stronger fiscal discipline and the provision of additional liquidity. If a high degree of currency substitution were to occur in Cuba, fiscal policy would become the only instrument of demand management. However, under this type of economic arrangement there is no guarantee that a government might not mismanage the economy. Pérez (1992) pointed out that Panama with a completely dollarized economy implemented an excessively expansionary fiscal policy during the 1970s and the early 1980s. The Government financed its operations to a larger extent by borrowing from foreign commercial creditors that in retrospect were too eager to lend to the country. This situation eventually led to the accumulation of payment arrears, to a drastic reduction in the financing available to Panama, and to a large economic contraction.

Finally, under conditions of currency substitution a country would need to accumulate a larger level of net international reserves than it would need to do otherwise to enable the Central Bank to face better external shocks or crisis of confidence in the banking system. This is particularly true if an exchange rate-based stabilization program is being implemented.

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Footnotes for:
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[2] Calvo and Végh (June 1992). Back to Text

[3] This section draws upon Carmelo Mesa-Lago (January 1994), José Alonso (May 1994), as well as on materials provided by José Alonso and Jorge Pérez-López. Back to Text

[4] Resolution No.153/93 of the Banco Nacional de Cuba of June1, 1993. Back to Text

[5] C. Mesa-Lago, *op. cit*., Table2. Back to Text

[6] See José Alonso, *op. cit*. Back to Text

[7] This section draws on Calvo and Végh (June 1992) and in the other papers published in the June 1992 issue of the *Revista de Análisis Económico*, as well as on Brand (1993). Back to Text

[8] See Ramírez-Rojas (1985), El-Erian (1988), Rojas-Suárez (1992), and Clements and Schwartz (1993). Back to Text

[9] See Savastano (1992) pp. 31-39 for a comparative discussion of the currency substitution experience of these four countries. Back to Text

[10] As acknowledged by Savastano, this is not a comprehensive measure of currency substitution because it does not take into account foreign bills in circulation in the country or foreign exchange deposits of residents held abroad. Back to Text

[11] See Brand (1993), Chapter VI. Back to Text

[12] Sahay and Végh (1994). Back to Text

[13] This section draws on Calvo and Végh (1992), Brand (1994), and notes of Marcelo Figuerola from an in-house seminar at the Western Hemisphere Department of the IMF. Back to Text

[14] See Savastano (1992) for an analysis of how dollarization affects the governments' proceeds from the inflation tax