

Attachment 1

Should Mexico Adopt the US Dollar as Legal Tender?

Volume I: The Issues Determining the Desirability of Dollar Adoption

The Source of Shocks to Real Activity under Alternative Exchange Rate Regimes

This chapter will present an empirical analysis of the type and source of real shocks to the Mexican economy. In particular, it will evaluate the following questions.

- How important are shocks that originate as exchange rate changes due to swings in market sentiment independent of the economic fundamentals? That is, how important is “excess volatility”?
- How important are shocks that originate as movements in “real” exogenous variables (terms of trade shocks, world interest rate shocks) or domestic policy shocks?
- What is the magnitude of intra-country shocks as opposed to inter-country shocks?

Costs and Benefits of Losing Monetary Policy Independence

This chapter would weigh the costs and benefits of losing monetary policy independence.

- *Increased exposure to asymmetric shocks.* According to the theory of optimal currency areas, Mexico might lose an important tool of economic policy by choosing to adopt the US Dollar. Indeed, Mexico would increase its exposure to shocks that are *asymmetric*, that is, shocks affecting the Mexican and the US economies in different ways. Of course, to the extent that exchange rate fluctuations have been an important source of shocks to output and employment in Mexico, the adoption of the Dollar may actually *reduce* the asymmetries between the United States and Mexico.
- *Time consistency of monetary policy.* On the other hand, it is highly questionable that monetary and exchange rate policy have been used effectively in Mexico in the past. Indeed, one can argue

that some major real shocks to the economy originated as, or were amplified by domestic policy decisions.

- *Potential for inheriting monetary policy shocks from the United States.* If Mexico were to adopt the US Dollar, it would be affected by US monetary policy shocks perhaps to a greater extent than it is already. Given the lower degree of sophistication of the Mexican financial system in comparison to the US financial system, US monetary policy shocks may have a different impact in Mexico than in the United States, and may potentially be disruptive for the Mexican economy. For this reason, the study should analyze whether asymmetries in the degree of financial sophistication affect the propagation of monetary policy shocks.

Dollar Adoption and Deficit Finance

Dollar adoption will have several important implications for deficit finance and thus for fiscal policy in Mexico, which should be taken into account, and for which the European and US experience may be relevant:

- *Reduced cost of borrowing for the government.* The reduced variability in inflation may imply that the real interest rate, especially on long term government debt, will decrease along with the component of the risk premium associated with the unpredictability of inflation.
- *Increased default risk.* On the other hand, in the face of a bad shock the government will no longer be able to inflate away part of the outstanding debt. Hence the possibility of default becomes more real, and may translate into a premium on real interest rates. Mexico's history also suggests that default could be a very costly option. Default risk may even prevent the government from placing any debt at all, as the experience of Panama, and of the state of Nuevo Leon in Mexico, seem to indicate. The evidence from municipalities in the United States also suggests that the inability of creating surprise inflation poses an upper bound on the amount of debt that can be placed. Even for the Mexican government political constraints may effectively limit the amount of debt that can be backed by future taxes. In view of this, the government may want to consider issuing debt backed by real commodities such as oil. This, in turn, would have consequences for the prospects of privatizing certain sectors of the economy.
- *Loss of seignorage revenue.* Depending on what arrangement would be negotiated with the US, Mexico might lose all seignorage income. Hence an assessment needs to be made of the importance of seignorage income in deficit finance.

During the transition phase it may be problematic for the government to roll over its debt because of the issue of increased default risk discussed above. Hence it would be necessary to take the required fiscal steps to avoid this scenario. In this sense, the convergence criteria adopted in Europe may be an interesting benchmark for comparison.

Credit Markets, Capital Flows, and the Cost of Borrowing

This chapter would analyze why currently the cost of capital is prohibitively high in Mexico. Based on this analysis, it would assess the potential effects of dollarization on the cost of capital and on the level and variability of international capital flows. It would also analyze how these factors may contribute to decrease inequality in the distribution of income.

- *The current structure of the cost of capital.* An analysis would be made of the factors contributing to the current high costs of capital in Mexico. These include high and variable inflation, exchange rate risk, information problems, as well as ill-defined and poorly implemented property rights for lenders and shareholders.
- *The effect of dollarization on the cost of capital.* Currently, long term capital markets are highly underdeveloped in Mexico. This has a serious impact on the level of both business and residential investment, and hence on economic activity. Following dollar adoption, the cost of capital in real terms may decrease and converge to US levels. Markets for domestically issued securities may become more liquid and more complete. The level of capital inflows may increase and its variability decrease. Two factors would contribute to this:
 - *A reduction in the level and the variability of inflation.* Mexico would inherit US inflation and avoid the costs of high and uncertain levels of inflation. The adoption of the US Dollar may therefore lead to a reduction of real interest rates, especially on long term loans.
 - *The elimination of exchange rate risk.* Currently secondary markets for both sovereign and private debt are very illiquid in Mexico, especially in comparison with the US. Following dollarization, the exchange rate risk would be eliminated, and securities issued domestically would become closer substitutes of securities issued in the United States.

The experience of Panama, where lending rates have been at most 4 % higher than the United States prime rate, suggests that this benefit could be quantitatively very important. The experience of the European Monetary Union suggests that for former high and variable inflation countries, like Italy, the reduction in the cost of borrowing has been substantial.

- *Dollar adoption and capital flows.* Because of the underdevelopment of capital markets, especially after the 1995 crises and the following disruption in the banking system, a large fraction of investment in Mexico is already financed by foreign capital. However, the volatility of capital inflows represents an additional source of shocks for the economy. The study should thus investigate the effect of Dollar adoption on both the *levels* and the *volatility* of capital flows, and the impact on credit markets.
- *Inflation, credit markets, and the distribution of income.* Dollarization may have a substantial effect on the distribution of income due to improved access to credit markets and a reduction of the inflation tax.
 - *Improve access to financial markets for low-income households.* Evidence suggests that access to financial markets for households, and especially for low-income ones, is very limited in Mexico. This is due to, among other things, i) high transaction costs in the banking system, ii) prohibitive cost of credit, or outright absence thereof, especially for mortgages. This implies that: i) per capita housing is extremely low for international standards, ii) low-income people have scant access to formal savings and credit instruments. The adoption of

the Dollar, by promoting long term capital markets, and by improving efficiency in the banking system, might improve access to financial markets for low-income households.

- *Reduce the inflation tax.* To the extent that inflation is a regressive tax, reducing inflation would have a beneficial effect on income distribution.

The Impact on Trade Flows between Mexico and the United States

The adoption of the US Dollar may significantly affect trade flows between Mexico and the US, as well as between Mexico and the rest of the world. Conventional wisdom and empirical evidence (see the evidence on regions within countries) would suggest that eliminating exchange rate uncertainty, as well as transaction costs, has a positive effect on the levels of trade flows. However, recent economic models imply that this conclusion should not be taken as granted, and that the effect of the exchange rate regime on trade flows depends on the degree of price rigidity and on the market structure in Mexico and the US. An assessment of this point should therefore be based on empirical studies of:

- the current pattern of trade flows;
- the gains from the elimination of transaction costs;
- the impact of eliminating exchange rate uncertainty;
- the degree of price rigidity and the market structure in Mexico.

Labor and Markets: Before and After

This chapter would include an analysis of the degree of flexibility of labor markets in Mexico, as well as an assessment of the impact of Dollar adoption on labor markets.

- *The capacity of labor markets to absorb asymmetric shocks.* The degree of flexibility of labor markets in Mexico is likely to be a crucial factor in determining the dynamics of unemployment under Dollar adoption. In the aftermath of the 1995 devaluation and crisis, inflation in commodity prices combined with nominal wage rigidity played an important role in inducing the adjustment in real wages necessary to restore full employment. In a dollarized economy this adjustment mechanism will no longer be there. Depending on the degree of rigidities in the labor market, shocks to economic activity may then induce pronounced effects on unemployment. Furthermore, casual evidence suggests that illegal migration to the US is another important adjustment mechanism for labor markets in the face of asymmetric shocks. Hence it is important to analyze the degree of flexibility of labor markets in Mexico, both in terms of wage flexibility, and in terms of geographical flexibility (domestic and international migration). In establishing empirical evidence on migration, it is necessary to distinguish between the “cyclical” and the “structural” component of migration.
- *The impact of Dollar adoption on the labor market.* Here two factors are important:
 - The adoption of the US Dollar may actually eliminate a source of instability for the Mexican economy. If this is the case, it could also help to reduce the component of illegal migration to the United States that is due to downturns in the Mexican economy. If the “cyclical” component of migration were large, and if it could be reduced following the adoption of the Dollar, the United States may derive substantial political benefits from Mexico adopting the Dollar. Consequently, Mexican authorities could use this fact as a bargaining tool to obtain a more favorable financial arrangement with the United States.

- Furthermore, Dollar adoption may help to stabilize wage differentials between the US and Mexico, which have severely widened since 1995 due to the continuous depreciation of the peso. Given that stabilization of the wage differential could strengthen US political support for NAFTA, it could also improve Mexico's bargaining position in negotiations with the US.

Real Exchange Rate Dynamics Under Dollar Adoption

Mexico's experience under various fixed exchange rate episodes as well as current developments in Argentina, indicate that a fixed exchange rate regime may induce an appreciation of the RER. On the other hand, in Panama the RER has consistently depreciated since the 1960s. This chapter would analyze the dynamics of the RER under dollar adoption. Dolarization may induce RER movements through various channels. First, there may be wealth effects intimately connected with the credibility of the fixed exchange regime itself. Such wealth effects may for example be induced by an expectation of fiscal restraint in connection with the credible implementation of the peg. Second, increased capital inflows, if complementary to non-tradables spending, may have an effect on the RER as well. Finally, labor market rigidities may prevent adjustment in the nominal wage and hence induce changes in real wages. RER appreciation can be accompanied by Current Account deficits, which empirically appear to be one of the sources of financial crises.

Implementing the Adoption of the Dollar: Theoretical Considerations

Various theoretical issues need to be explored in connection with the adoption of the dollar. These are the following.

- *The scope for "excess volatility" under alternative exchange rate regimes.* A common feature of the recent currency crises in Mexico and Asia is that large movements in exchange rates were followed by sharp downturns in real activity. To the extent that such swings in the exchange rate are not fully justified by changes in fundamentals, retaining the national currency exposes a country to a source of instability. Therefore, adopting the US Dollar could prevent changes in market sentiment toward the Peso from affecting the Mexican economy.
- *Lender of last resort function.* By adopting the US Dollar, the Central Bank of Mexico would no longer have the option of providing credit to the banking system by printing money. Hence an evaluation is desirable of how to provide the lender of last resort function – if at all.
 - *No lender of last resort.* One option to be studied would be to abolish the lender of last resort function. This might be feasible under three alternative arrangements, which are not necessarily exclusive and may be complementary.
 - ✓ The first would be for national banking to effectively disappear as well, with foreign banks being allowed to enter the domestic market. Of course from this point of view it would make a difference whether international banks would enter by branching (as in Panama), or by creating subsidiaries, as it is the case now.
 - ✓ The second option would be to maintain domestic banking, with 100% reserve requirement on deposits ("narrow banking"), possibly with interests paid on reserves. A

less penalizing option for the banking system would be to impose very high liquidity requirements like the ones introduced in Argentina's banking system. Either way this would require financial institutions other than banks to be fully responsible for maturity transformation and lending. However, in an economy like Mexico's where the informational frictions that presumably motivate bank lending are particularly severe, eliminating deposit banks' role in investment finance may have severe consequences for investment and real economic activity. That would be the case if deposit-taking banks have an edge in reducing informational frictions on the lending side due to their handling of lenders' deposits and transactions. From this perspective, it would be desirable to make a thorough evaluation of investment finance in Mexico.

- ✓ Finally, a third alternative would be for domestic banks to elaborate private insurance schemes (see the experience of Argentina).
- *Alternative lenders of last resort.* It would also be useful to analyze the alternatives for maintaining a lender of last resort. Indeed, the lender of last resort function could continue to be carried out by a national central bank. In that case it would have to be decided what level of reserves would have to be held by the central bank, and how these would be accumulated. Alternatively, the fiscal authority could take up the lender of last resort function. On the other hand, the lender of last resort function could be accomplished by a multilateral or bilateral credit line. Existing multilateral credit facilities appear to be too slow to provide a lender of last resort function, hence appealing to this alternative would require a change in the IMF's modus operandi. Bilateral credit lines have effectively been used before, and may be a viable alternative. Any involvement of foreign institutions in providing lender of last resort functions would probably be impossible without such institutions' involvement in supervision and prudential regulation of the domestic banking system.
- *Financial markets.* Many questions arise as to the structure, supervision and regulation of the domestic banking sector under a dollarized economy. The study would have to analyze these issues in close relation to the discussion on the lender of last resort.
 - *Feasibility of a domestic banking system.* In the absence of a lender of last resort, the banking system has to be sufficiently diversified to wither asymmetric shocks. Possibly, sufficient diversification on both the liability and the asset side cannot be attained by domestic banks, and can only be achieved by letting foreign banks enter the domestic market. Hence maintaining a domestic banking system may not be feasible in the absence of a domestic lender of last resort. Alternatively, a "narrow" banking system may be considered.
 - *Regulation of the domestic banking system.* If a domestic banking system continues to exist, its prudential regulation and supervision will have to be reviewed in tune with the adopted lender of last resort arrangements. Reserve requirements and capital-adequacy ratios may need to be redefined in this context.
 - *Other financial markets.* Regulation of financial markets other than banks may have to be adjusted as well. That would be the case especially if deposit banking would be subject to a 100% reserve requirement, and financial institutions other than banks would become fully responsible for lending and maturity transformation.
 - *Property rights.* Ill-defined and poorly implemented property rights for creditors and shareholders are currently a serious impediment to bank lending, to the emergence of

secondary markets in private debt, and to investment in general. They are also an important factor contributing to the current high cost of capital in Mexico.

- *Taking into account differences in sophistication of financial sectors in the US and Mexico.* Regulation of both the banking system and other financial markets will need to take into account the potentially perverse effects of inheriting monetary policy which is geared to a financial sector that is vastly more sophisticated.

A reform of the financial sector and lender of last resort arrangement as described above may be warranted even if Mexico would maintain a flexible exchange rate. Indeed, authors like Kareken and Wallace and Ortiz have suggested that a flexible exchange rate, combined with unrestricted international capital flows, is prone to volatility created by changes in market sentiment. Recent experience suggests that the Mexican financial system is vulnerable to such volatility.

- *Rate and announcement of convertibility.* A number of issues arise with regard to the rate of convertibility and its announcement. A first issue is the timing of the convertibility announcement. One possibility is to pre-announce the convertibility rate and effectively having a fixed exchange rate regime in the transitory phase. Alternatively only the date of conversion may be announced, while leaving the rate of exchange between the two currencies to be determined by the market. A concern for evaluating these alternative transition schemes would be their potential for generating equilibria presenting bank-runs. In addition it would have to be decided whether there would be a period in which both currencies would be accepted as legal tender. Closely linked to the decision of the conversion rate, is the determination of the level of required reserves and the process for acquiring them. What part of the monetary base should be covered by reserves: reserve currency, M1, all peso-denominated liabilities?
- *Strategic Issues with the US.* If other countries in Latin America decide to adopt the dollar, the overall assessment of costs and benefits may be affected. Moreover, the decision would have a non-negligible impact on the US (seignorage revenue and exchange rate effects) and this may put Latin American countries in a position to exert strategic power over the US. That is, depending on how many countries would adopt the dollar, the probability of moving to a true monetary union with the US, as opposed to simply adopting the dollar as legal tender, might increase. This would imply, among other things, that all countries would share seignorage revenue with the US.

The Historical Perspective

A number of historical episodes may shed some light on the question posed in this project.

- *Bretton Woods.* Countries that were part of the Bretton Woods system operated under a Dollar Standard, like Mexico would if it decided to adopt the Dollar. However, in the case of Bretton Woods exchange rate realignments were possible. One of the issues that should be addressed is whether irrevocably fixing its exchange rate with the Dollar is a viable option for Mexico. This assessment should take into account recent changes in the international economy, particularly with respect to capital mobility
- *The European Experience.* The experience of EMU also bears many similarities with the project of Dollar adoption. In particular: i) in both cases the 'optimal currency area' issue is raised; ii) the

potential advantages for Mexico of adopting the Dollar are in many ways similar to the gains for an inflation prone country in Europe of entering the monetary union; iii) both for countries adopting the Euro, and for Mexico, the decision to fix exchange rates irrevocably requires adjustments in fiscal policy (see the section on Deficit Finance). On the other hand, there are several differences between the European experience and the case of Mexico. Perhaps the most important one is that Mexico would have no impact at all in the conduct of monetary policy, while all EMU countries are represented in the board of the European Central Bank and can try to influence its decisions.

- *Panama and Argentina.* The experiences of Panama and Argentina are also relevant. Indeed Panama, were not for the differences in size, would be a perfect laboratory to study the consequences of Dollar adoption. As noticed above, the Panamanian experience carries several lessons for Mexico in terms of the possible response of the Real Exchange Rate, of developments in financial markets, and of the role of international banks in a Dollar-based economy. The currency board experience in Argentina, albeit different from Dollar adoption, should also be studied, as it may shed light on a number of issues, such as banking regulation, the lender of last resort function with fixed exchange rates, and the response of labor markets to macroeconomic shocks.

Volume II: Implementing Dollar Adoption

Convergence of Macroeconomic Aggregates

The adoption of the US Dollar would require profound changes for fiscal policy. The chapter would study:

- changes in the Budget of the Federal Government needed to comply with the loss of seignorage as an actual and/or potential source of revenues
- changes in fiscal policy needed to reduce the amount of government liabilities (including debt and social security) to a level consistent with dollar adoption, and in particular to resolve the transitional effects of the liabilities related to Fobaproa.

Reforming Financial Markets

The chapter would address the issue of reforming financial markets in Mexico, putting a particular emphasis on:

- changes in the regulation of the financial system in tune with adjustments in lender of last resort arrangement. These changes would be particularly necessary to ensure consistency with the fiscal discipline required by dollar adoption.

Legal Issues

The chapter should study a number of legal issues that would arise following the adoption of the US Dollar as legal tender. In particular:

- *Legal issues arising from the change in denomination of existing contracts.* The adoption of the dollar will imply a change in denomination of contracts among private agents and between private parties and the government. In the transitional phase this may induce sizable deadweight costs due to numerous legal disputes. The study should consider alternatives for avoiding this deadweight loss.

The chapter should also address issues regarding the implementation of changes in the law that would be needed to improve the viability of Dollar adoption. In particular:

- *Property rights.* It would be useful to assess what changes are necessary in property rights legislation in view of creating a favorable investment framework. Perhaps, bankruptcy legislation should be made more similar to US legislation. In any case, to encourage international investors'

participation in Mexican financial markets, foreigners should not be subject to differential treatment under Mexican property right laws.

- *Labor and goods markets reform.* The study should evaluate different alternatives for introducing changes in labor laws that would increase the degree of flexibility in the labor market, such as allowing downward nominal adjustment in wages, which are currently banned by law. One possibility would be to introduce labor law changes gradually, by initially making them applicable only to contracts written in dollars, while peso-contracts would continue to be subject to the current labor legislation.