Privatizations and Monetary Policy in Mexico During 1991 and 1992

Prepared by Jorge Baldrich

Ministerio de Economía y Obras y Servicios Públicos

Abstract

The 1991 - 1992 privatizations determined government proceeds equivalent to 6 percent of Mexico's GDP. The privatizations were carried out at a time the country had significantly improved its public finances, curbed high inflationary expectations and, also, turned its current account from a surplus of US$3,144 million in 1987 to a deficit of US$7,800 million in 1990. This paper argues that, under a current account deficit, a privatization policy tends to increase the supply of domestic assets the private sector is seeking. However, the model presented shows that two cases must be distinguished, if the privatization proceeds are received in tradable assets (money or foreing bonds) the Government absorbs the assets that the private sector want to dispose of; if, to the contrary, the proceeds are received in domestics assets (i.e., domestics bonds) what the Government absorbs is the assets that the private sector seeks and, in this case, the convergence to external equilibrium could be postponed. In particular, the paper argues that the 1992 policy of using the proceeds from privatizations to redeem domestic public debt held by the commercial banks prompted an additional disequilibrium force on the Mexican balance of payments.

1/ The author was at the International Monetary Fund when this paper was prepared.

2/ I have received helpfull comments of Miguel Sabastano, Alfredo Leone, Jhon Thornton and Federico Rubli-Kaiser.

I. Introduction

The Mexican privatization program, which started in 1982, gathered momentum in 1990. Although the number of public enterprises declined from 1,155 in 1982 to 280 in 1990, the privatizations of the telephone company Telmex in 1990-1991 1/ and the commercial banks in 1991-1992 were so important that they resulted in government receipts for about 6 percent of Mexico's GDP. The effects of these privatizations at the macro level are interesting on several grounds.

First, because Mexico, contrary to what happened in the eastern european countries, has well developed capital and stock markets and both the increase in equities associated with the transfer of ownership and the decline in the asset used by the private sector as payment for the equities are likely to affect the structure of interest rates and to trigger substitution effects among assets.

Second, because the 1991-1992 privatizations were carried out at the time the current account had switched over from a surplus of US$3,144 million in 1987 to a deficit of US$7,800 million in 1990 (Table 1). Under these circumstances, the way in which the privatization proceeds are collected could help the economy to reach a new external equilibrium. In this regard, the model presented in Section IV shows that, under a current account deficit, a privatization policy tends to increase the supply of

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1/ Although the privatization of Telmex was decided in 1990, the proceeds were received by the Mexican Government during 1991.

domestic assets the private sector is seeking. However, the model argues that it is important to distinguish between two cases: if the privatization proceeds are received in tradable assets (foreign assets or money) the Government absorbs the assets that the private sector wants to dispose of; if, to the contrary, the proceeds are received in domestic assets (i.e., domestic bonds) what the Government absorbs is the kind of assets the private sector does want and, in this case, the convergence to an external equilibrium position could be postponed. In particular, the paper argues that the 1992 policy of using the privatization proceeds to redeem a substantial part of the domestic debt prompted an additional disequilibrium force over the Mexican balance of payments.

Third, the privatizations were carried out in the context of a monetary policy geared toward partially sterilizing the capital inflows Mexico was receiving. In this regard, a privatization policy could be a better alternative than the issue of bonds if the policy wants to minimize the perils of sterilization (see Calvo, 1991).

The structure of the paper is as follows: Section II summarizes the main features of the December 1987 stabilization program that paved the way to the 1991-1992 privatizations. Section III analyzes the monetary policy and the consequences of privatizations during 1991 and 1992. Section IV presents a portfolio model to ascertain the effects of privatizations in a simple open economy model with four assets. Section V presents the main conclusions of the paper.

II. The December 1987 Economic Program

The 1987 economic program was not a sudden stabilization attempt but the result of a persistent process of adjustment undertaken by Mexican authorities in the aftermath of the debt crisis. 1/ The progress already made during 1983-1987 and the renewed expectations brought about by the administration that took over in 1988 allowed Mexico to launch a more comprehensive economic program. The program included specific policy measures in public finances, the financial system, the exchange rate, and structural and incomes policies.

The public finances were strengthened in several ways. The tax system was overhauled and the tax administration was improved. Voluntary retirement plans were adopted and most of the Government's subsidies were reduced. In addition, prices of public sector goods and services were substantially increased in December 1987 and, for one year, they remained fixed.

During 1988 and 1989 a financial reform was launched. The reform included the elimination of government control over interest rates and maturities of banks instruments, the enacting of a new legal framework determining a universal banking system, the developing of criteria for rating banks' credit portfolios, and the removal of restrictions on banks

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1/ See C. Loser and E. Kalter, ed. (1992) and "The Mexican Ecomony" (1991 and 1992).

lending to private sector enterprises. 1/ The privatization of commercial banks was announced in 1990 and completed in mid-1992.

After a 30 percent devaluation in the period November 1987-March 1988, the controlled exchange rate was frozen in what has been defined as a successful exchange rate-based stabilization program (see Calvo and Vegh (1992), page 6). The exchange rate's role of nominal anchor was strengthened by the reduction in tariffs and the elimination of most of the nontariff barriers. The fixing of the exchange rate lasted until the end of 1988; after January 1989 the exchange rate had a daily depreciation equivalent to Mex$1 determining a nominal depreciation of 16 percent during that year. The daily depreciation was reduced to Mex$0.8 in May 1990 and to Mex$0.4 in November of the same year. In November 1991 Mexican authorities unified the exchange rate system and determined an exchange rate band. The lower limit of the band was fixed at Mex$3,052 per U.S. dollar whereas the upper limit was subject to a daily depreciation of Mex$0.2. In October 1992 the daily depreciation of the upper limit was

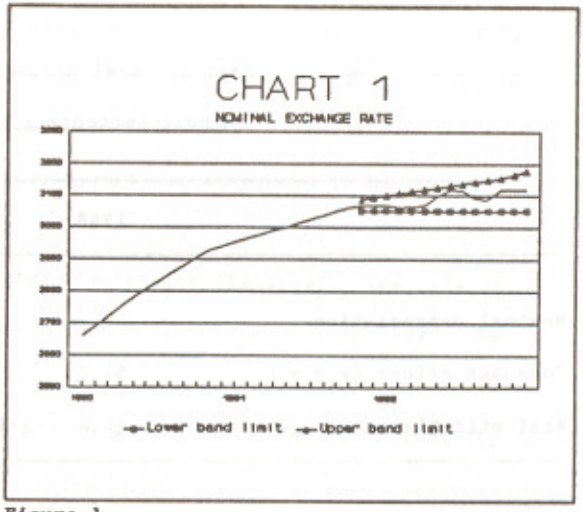


Figure 1

1/ For a description of the financial system reforms see Coorey (1992).

increased to Mex$0.4 (Chart 1). Table 2 shows the nominal depreciation of the exchange rate during 1988-1992, the evolution of consumer prices, and the evolution of the Mexican real effective exchange rate.

Table 2. Mexico: Real Effective Exchange Rate

(Annual percentage change)

	1988	1989	1990	1991	1992
Nominal depreciation	3.2	15.8	11.5	4.3	1.5
Consumer prices (e.o.y.)	51.7	19.7	26.9	18.8	11.9
Real effective exchange rate	24.4	0.7	3.5	12.3	8.3

Fiscal and financial policies were complemented with structural reforms aimed at increasing the influence of market forces in the economy. In this regard, the privatization of public enterprises, the partial deregulation of foreign investment, the measures increasing the openness of the economy, and the modification in the land tenure system consolidated the strategy of letting the price system command the resource allocation process.

The program included a pact (Pact for Economic Solidarity) as an heterodox element. The main innovative element of the pact was the unified agreement on the measures to address Mexico's economic problems made by the Government, the business and union leaders. The pact included a commitment to strengthen the public finances, an agreement on exchange rate policy, and

the fixing of the main prices after the initial increase in the relative prices of the public sector. A renewal of the pact was announced in December 1988 at the same time that wages and public sector prices were adjusted and the peso began its daily depreciation against the U.S. dollar. A new pact (Pact for the Stability and Economic Growth) was announced in January 1989 and received five subsequent renewals. Finally, a Pact for Stability, Competitiveness, and Employment was announced in October 1992.

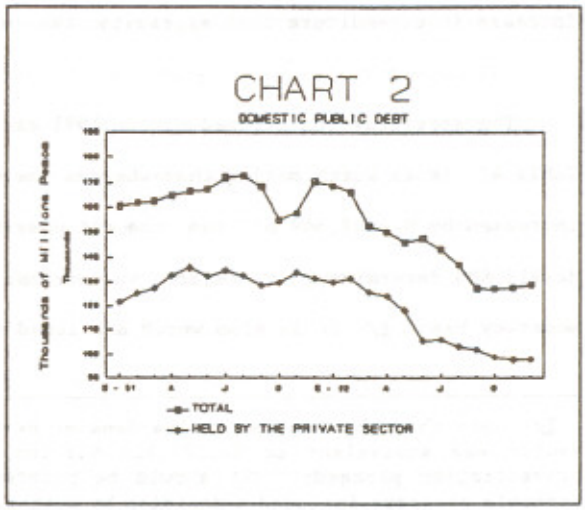
The results of the program were impressive (Table 3). The rate of inflation declined from 159 percent in 1987 to 12 percent in 1992. The overall balance of the public sector excluding prizatizations turned from a deficit of 16 percent of GDP in 1987 to a surplus of 0.6 percent of GDP in 1992. The deregulation of the financial system prompted an increase in the banks liabilities of 68 percent in real terms between 1987 and 1992. During the same period, the financial system credit to the private sector increased by 294 percent in real terms. The rate of growth of real GDP increased from -0.5 percent in 1982-1986 to 2.8 percent in 1987-1992. Against this success, the program also prompted a significant decline in private savings that, since it was not compensated by a corresponding increase in public savings, determined a deterioration of the current account of the balance of payments reaching a deficit equivalent to 7.1 percent of GDP in 1992.

III. Monetary Policy and Privatizations in 1991 and 1992

The 1991-1992 privatizations were carried out at the time Mexico had significantly improved the public finances, boosted economic growth, and curbed high inflationary expectations. During 1990 several factors combined to increase the attractiveness of Mexican assets reducing, at the same time, their perceived risk. These events helped to trigger significant inflows of capital. First, the external debt arrangement was announced in February. This agreement paved the way to upgrading Mexico's foreign currency debt rating at the end of 1990. Second, the daily depreciation of the peso against the U.S. dollar was reduced from Mex$1 to Mex$0.8 in May 28 and was further reduced to Mex$0.4 on November 11. The difference between the CETES interest rate and the announced depreciation of the peso was 22 percent in annual terms in June. Third, authorities announced the privatizations of Telmex and commercial banks in July. This announcement, and its subsequent approval by the Mexican Congress, helped to consolidate the already strong expectations on fiscal performance and increased the expected return on Mexican real assets. Fourth, the substantial increase in oil prices during the third quarter of 1990--some 23 percent higher in real terms than in the third quarter of 1989--and in value-added tax receipts--some 18 percent higher in 1990 than in the previous year--also strengthened investors' willingness to accept Mexican assets. Finally, during the third quarter of 1990 and after the inflows of capital had gained momentum, it became clear to the private sector that the Bank of Mexico's policy of partial sterilization was at the core of the stabilization strategy providing, therefore, additional incentives to the capital inflows.

The evolution experienced by the balance of payments was remarkable (see Table 1). The current account deficit increased from US$6 billion in 1989 to US$7.8 billion in 1990. At the same time the capital account surplus increased from some US$5 billion to US$11 billion. Particularly important was the renewed access to external financing--the net external financing shifted from an outflow of US$0.2 billion in 1989 to a net inflow of US$5.4 billion. The current account deficit in 1991 and 1992 reached US$13.4 and US$22.8 billion, respectively. The main driving force underpinning the increasing deficit was the demand of imports. As the capital account surplus reached US$20.8 billion in 1991 and US$24.7 billion in 1992, the private capital component nearly doubled from 1990 to 1991; both direct investment and portfolio investment more than doubled in the same period.

The Bank of Mexico's reaction to the increasing inflows of capital was the partial sterilization of them. However, the patterns of the sterilization process significantly differed between 1991 and 1992. As Chart 2 shows, the domestic public debt held by the



private sector remained relatively constant in 1991 and it was not until 1992 that it experienced a significant decline. These developments should be contrasted with the evolution of the Bank of Mexico's net credit to the public sector. As shown in Chart 3 the Bank of Mexico's net credit to the public sector exhibited a significant decline during 1991 and remained relatively constant in 1992. This paper argues that the 1991 privatization proceeds were mainly used to reduce the nonfinancial public sector indebtedness with the Bank of Mexico; in other words, taking the overall public sector as a whole, the privatization proceeds were saved and used to build up international reserves. This "sterilization" policy prevented the privatization proceeds from being split over the aggregate demand and, therefore, absorption. Similarly, this paper also argues that the 1992 privatization proceeds were mainly used to redeem public debt in hands of the private sector (especially the financial system) and prompted an increase in expenditure that aggravated the current account deterioration.

The sterilization carried out in 1991 can be analyzed with the help of Table 4. It is worth noting that whereas the net international reserves increased by Mex$22,549 billion, the net domestic assets declined by Mex$13,603 determining, therefore, an increase of Mex$8,943 billion in the monetary base. 1/ It is also worth mentioned that although the correlation

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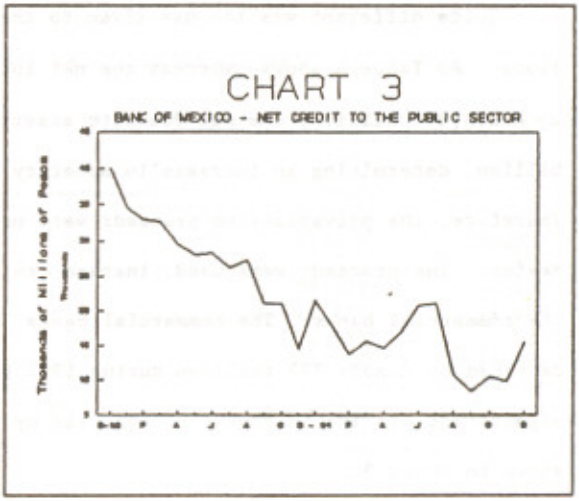
1/ Note that the decline in the Bank of Mexico's net credit to the public sector was equivalent to Mex$21,128 billion, some 86 percent of the 1992 privatization proceeds. It should be pointed out that the 1991 and 1992 economic programs included a decision by authorities determining that at least 85 percent of the proceeds from privatization were going to be either saved or used to redeem public debt.

between the increase in reserves and the decline in net domestic credit has rightly been presented as an evidence of a "great sterilization effort," 1/ only a small part of the additional liquidity stemming from the building of reserves was sterilized through open market operations. This is the reason the outstanding debt held by the private sector only exhibited a small increase. But the fact is that the bulk of the privatization proceeds were transferred from the Treasury to the Bank of Mexico and the counterpart of this increase in reserves was a decline in the Central Bank's net credit to the public sector. However, the crucial implication of this policy is that the additional supply of equities stemming from the privatizations was not matched by a simultaneous decline in the supply of government bonds outside the public sector. In other words, the privatizations implied an exchange of equities for money in an economy in which the private sector could easily provide money for itself by selling foreign exchange to the Bank of Mexico. 2/



1/ See "The Mexican Economy, 1992," Bank of Mexico, page 63.
2/ The differential between the controlled and free exchange rate was less than 2 percent since end-1987 except for a brief period in early 1990.

Quite different was the use given to the 1992 proceeds from privatizations. As Table 4 shows, whereas the net international reserves increased by Mex$5,843 billion, the net domestic assets declined by only Mex.$111 billion, determining an increase in monetary base of Mex.$5,732. 1/ Therefore, the privatization proceeds were not deposited in the Bank of Mexico. The proceeds were used, instead, to redeem public debt in hands of the commercial banks. The commercial banks' holdings of domestic debt declined by Mex$34,277 trillion during 1992 (some US$11 billion). 2/ The significant decline in domestic debt held by the private sector in 1992 is shown in Chart 2.

The 1991-1992 privatization proccess and its relation with public finances can be further analyzed in Table 5. The table presents the overall economic balance including the proceeds from privatization and highlights the aspects already mentioned.

1/ The decline in net credit to the public sector, however, includes Mex$7,400 of FICORCA dividends transferred to the Bank of Mexico. FICORCA was a public agency that provided exchange rate hedging to private sector external debt service; created in the aftermath of the debt crisis, the agency was liquidated in August 1992.

2/ The decline in commercial banks holdings of government debt, however, was some Mex$9,000 billion higher than the 1992 privatization proceeds.

Table 5. Mexico: Public Sector Borrowing Requirements

(In billions of Mexican pesos)

	1991	1992
Public sector economic deficit	-29,330	-41,807
External financing	1,055	3,443
Domestic Financing	-28,538	-44,172
Bank of Mexico	-21,128	-6,203
Commercial banks	12,968	-37,525
Development banks	-7,858	-4,683
Government debt held by households	-12,520	4,239
Others	-1,847	-1,078

Sources: Bank of Mexico; and Secretariat of Finance.

1. The effects of 1992 privatizations on the financial system

One of the main effects of the 1992 privatizations can be seen with the help of Table 6. The table shows the impressive growth in the credit to the private sector which was nearly 50 percent greater than the total sources of funds. In other words, the redemption of debt from the commercial banks' portfolios made room for a considerable flow of credit to the private sector. 1/

Additional information about the allocation of the credit to the private sector is presented in Table 7. The table shows that 81 percent of the 1992 flow of credit to the private sector was allocated to the Commerce,

1/ The fact that the proceeds from privatizations could finance domestic spending has been emphasized by Rodriguez (1992).

Services, and Construction sectors. The table is an indication about how concentrated in financing consumption the 1992 credit expansion was.

Table 7. Mexico: Annual Changes in Credit by Economic Sector

(In billions of December 1992 Mexican pesos)

	1990	1991	1992
Total	39,936	58,170	95,544
Primary production	-551	100	4,557
Energy production	-5,204	-1,445	121
Industril production	3,897	6,508	7,850
Construction 1/	7,711	9,510	17,024
Transportation and communication	279	3,015	3,133
Commerce and services	31,998	38,431	60,409
State and local governments	1,806	2,051	2,449

1/ Includes low-income housing.

IV. The Model

The model presented in this section aims at providing an analytical framework for the stylized facts of the Mexican privatizations. The analysis of the monetary consequences of privatizations is by no means a new attempt of economic theory. In a model very similar to the one presented here, Branson (1974a) analyzed the effects of open market operations in equities. The present model is based on the portfolio models for an open economy developed by Branson (1974a, 1974b, and 1977) and includes a current account specification similar to the one developed, among others, by Kouri (1976) and Frenkel and Mussa (199-).

The model includes four imperfectly substitutable assets: money (M), domestic bonds (B), foreign bonds (F), and equities (K). All assets are gross substitutes. It is assumed that the demand for assets depends on their rates of return r_B, r_K, r_F, and income Y.

$$M = F^M (r_B, r_K, r_F, Y) W \quad (1)$$

$$B = F^B (r_B, r_K, r_F, Y) W \quad (2)$$

$$F = F^F (r_B, r_K, r_F, Y) W \quad (3)$$

$$(K-K^g) = F^K (r_B, r_K, r_F, Y) W \quad (4)$$

where F^i is the proportion of private wealth allocated in asset i, W is private wealth, and K^g are the equities held by the public sector. It is assumed that the price level and the exchange rate are constant and equal to 1. Equation 5 defines the private sector wealth:

$$W = M + B + F + (K-K^g) \quad (5)$$

Following Branson (1974b), it assumed that domestic bonds and capital are nontraded assets in the sense that domestic residents have to hold the existing supplies of them; in addition, people can freely exchange the two tradable assets: money and foreign bonds. It is also assumed that residents face an elastic supply of foreign bonds at the given interest rate r_F. These assumptions allow us to aggregate the money and foreign bond holdings in a single aggregate H:

$$H = M + F \qquad (6)$$

The 6 equations (5 of them independent) determine r_B, r_K, F, W and H given the exogenous variables $(K-K^g)$, r_F, H and B. The system can be simplified as follows:

$$B = F^B (r_B, r_K, r_F, Y) [H+B+(K-K^g)] \qquad (7)$$

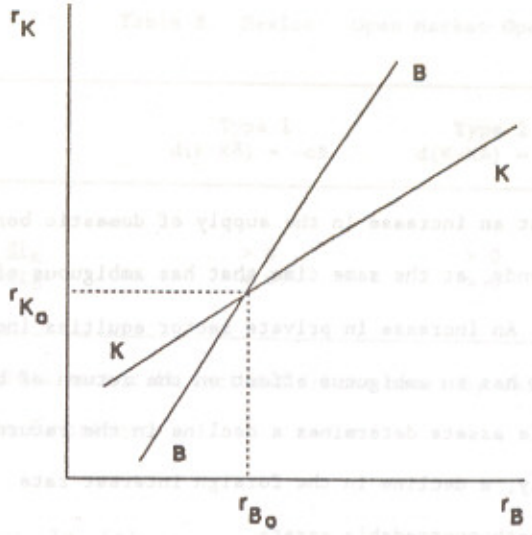
$$(K-K^g) = F^K (r_B, r_K, r_F, Y) [H+B+(K-K^g)] \qquad (8)$$

$$H = [F^M (r_B, r_K, r_F, Y) + F^F (r_B, r_K, r_F, Y)] [H+B+(K-K^g)] \qquad (9)$$

Only two of the equations 7-9 are independent. Therefore, we can concentrate on equations 7 and 8 that determine r_B and r_K given B, $(K-K^g)$, H and R_F. Equations 7 and 8 correspond to the nontradable assets equilibrium conditions. These conditions could be analyzed with the help of Chart 4. The BB locus gives the combinations of r_K and r_B that clears the domestic bond market. BB has a positive slope because, whereas an increase in the return of capital decreases the demand for bonds, an increase in the return of bonds increases the demand for bonds. The BB curve will shift to the right when r_F or B increases or when H or $(K-K^g)$ decreases. Any point located at the right and above the BB locus represents a situation in which there is excess demand for bonds and, as a result, bond prices will increase and return on bonds will decline. Conversely, any point located at the left and above the BB locus corresponds to an excess supply of bonds leading to a decline in bond prices or, what is the same, an increase in the rate of return of bonds. The locus KK represents the combinations of r_K and r_B that

clears the equities market. The slope of KK is positive because whereas an increase in the return of capital increases the demand for equities, an increase in the return of bonds decreases the demand for equities. The KK curve will shift to the right when r_F or $(K-K_g)$ declines and when H or B increases. The points located at the left and above the KK locus corresponds to excess demand for equities whereas the points located to the right and below KK corresponds to excess supply of equities. Equities prices will increase in the former and will decrease in the latter case. The wealth constraint and the asset demand specifications assures that BB is steeper than KK and, therefore, the system is stable.

Chart 4



The reduced equation of the model is the following: 1/

$$\begin{bmatrix} d\,r_K \\ d\,r_B \end{bmatrix} = \begin{bmatrix} a^{KB} \\ a^{BB} \end{bmatrix} dB + \begin{bmatrix} a^{KK} \\ a^{BK} \end{bmatrix} d(K-K\bar{s}) + \begin{bmatrix} a^{KH} \\ a^{BH} \end{bmatrix} dH + \begin{bmatrix} a^{KF} \\ a^{BF} \end{bmatrix} d\,f_F \qquad (10)$$

where:

a^{KB} ?

$a^{KK} > 0$

$a^{KH} < 0$

$a^{KF} > 0$

$a^{BB} > 0$

a^{BK} ?

$a^{BH} < 0$

$a^{BF} > 0$

Equation 10 shows that an increase in the supply of domestic bonds increases the return on bonds, at the same time that has ambiguous effects on the return of capital. An increase in private sector equities increases the return on equities but has an ambiguous effect on the return of bonds. An increase in the tradable assets determines a decline in the returns of capital and bonds. Finally, a decline in the foreign interest rate decreases the returns of both nontradable assets.

1/ See the Appendix for a detailed presentation of equation 10.

The effects of three types of open market operations are presented in Table 8. The first type involves an increase in equities to the private sector matched by a decline of domestic bonds. This first type policy determines an increase in the return of capital and a decline in the return of bonds. The second type of open market operation involves an increase in private sector equities matched by a decrease in the supply of the tradable assets aggregate. In this case, both the return on capital and the return of bonds increase. Finally, the third type of open market operation involves an increase in bonds matched by a decrease in the tradable assets aggregate. This policy determines an increase in both the return of capital and the return of bonds.

Table 8. Mexico: Open Market Operations

	Type 1 $d(K-K\delta) = -dB$	Type 2 $d(K-K\delta) = -dH$	Type 3 $dB = -dH$
$\frac{dr_K}{dr_B}$	> 0 < 0	> 0 > 0	> 0 > 0

The real sector is included in the model by defining the saving and investment functions:

$$S = S(W, r_B, r_K, r_F) \qquad (11)$$

where $S_W < 0$, and $S_{ri} > 0$ for i-B,K,F.

$$I = I(r_K) \qquad (12)$$

where $I_{RK} < 0$

It is assumed that the government sector has a balanced budget. Therefore, Equation 13 determines the current account of the balance of payments.

$$CA = S - I \qquad (13)$$

The accumulation of international reserves is defined in Equation 14.

$$CA + KA = \dot{R}E \qquad (14)$$

where KA is the capital account of the balance of payments and $\dot{R}E$ is the rate of change in reserves per unit of time. Given the fixed exchange rate regime:

$$CA + KA = \dot{M} \qquad (15)$$

where $\dot{M}$ is the time rate of change in the supply of money. However, from Equation 6:

$$\dot{H} = \dot{M} + \dot{F} \qquad (16)$$

where $\dot{H}$ and $\dot{F}$ are the time rate of change of the tradable assets aggregate and the foreign bonds. Substituting 15 into 16 and remembering that, in this model, the capital account equals the time rate of change in foreign bonds holdings:

$$\dot{H} = CA \qquad (17)$$

Equation 27 implies that the holdings of tradable assets can only increase (decrease) if the country runs a current account surplus (deficit). This is an important result in our analysis of the current account dynamics and highlights one relevant aspect of the asset markets' substitution effects.

Substituting 13 into 17, and taking into account 11 and 12:

$$\dot{H} = S(W, r_B, r_K, r_F) - I(r_K) \qquad (18)$$

Taking differentials we get 1/:

$$d\dot{H} = h_1\, dH + h_2\, dB + h_3\, d(K-K^{\delta}) + h_4\, dr_F \qquad (19)$$

where:

$h_1 < 0$

h_2 ?

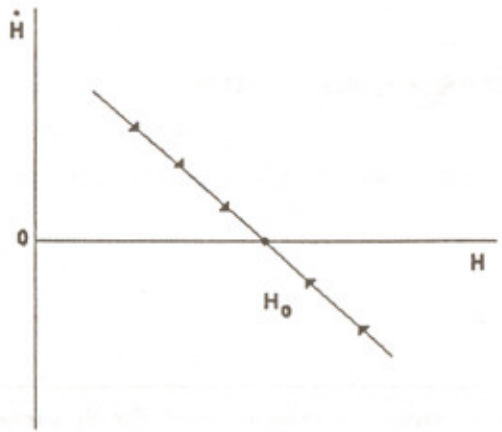
h_3 ?

1/ See the Appendix for a complete presentation of the h_i parameters.

$h_4 > 0$

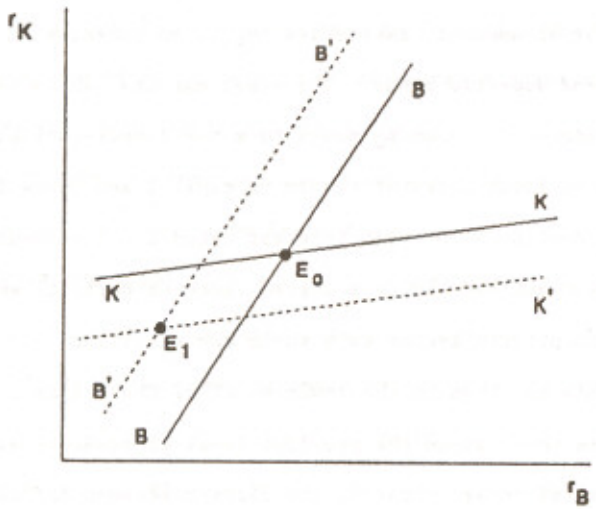
The dynamic path of H can be seen in Chart 5. The FF curve gives the dynamic response of H for each level of tradable asset holdings. It has a negative slope that reveals the stability of the system. The FF curve will shift to the right if the exogenous interest rate on foreign bonds (r_F) increases. In addition, from Table 8 and Equation 18, it is clear that FF will shift to the right with a Type 2 open market operation (increase in capital and decrease in tradable assets) and with a Type 3 open market operation (increase in domestic bonds and decrease in tradable assets). The Type 1 open market policy (increase in capital and decrease in domestic bonds) has ambiguous effects on FF. The reason for that is because it decreases investment by increasing the return on equities but its effect on savings could either be positive or negative.

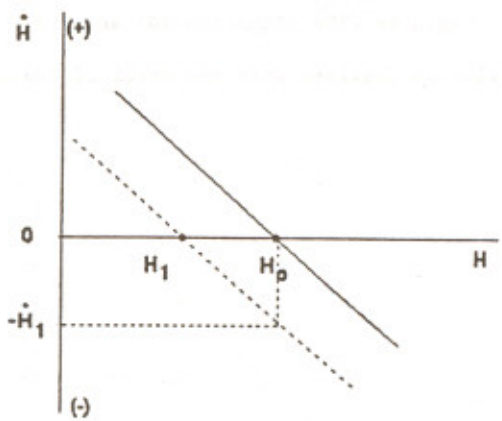
Chart 5



Lets analyze now the effects of a decline in the rate of return of foreign bonds r_F. Chart 6 shows that the decline in r_F prompts a substitution in favor of domestic assets leading to an increase in the prices of equities and domestic bonds. The asset markets, which was previously at equilibrium at point E_0 moves to a new (short-run) equilibrium at E_1 characterized by lower rates of return on capital and domestic bonds. Simultaneously, the decline in foreign interest rates and the ensuing substitution already described led to a current account deficit, which is the only way that the private sector as a whole can dispose of its tradable assets holdings. This is shown in the lower panel of Chart 6 as a shift of FF to the left. Note that, given the previous level of tradable assets H_0 and the new structure of interest rates, the current account deficit equals $\hat{H}_1$. Note that the current account deficit is a transitory phenomenon since as the economy reduces its holdings of tradable assets through it, the rates of return of domestic assets begin to rise (Equation 10) and the current account achieves a new equilibrium position when the stock of tradable assets reaches H1.

Chart 6





It is important to note that, as the economy is experiencing a current account deficit of the nature already described, the movement to a new equilibrium can be strengthened by a Type 2 privatization policy. As was shown above, the effects of this policy will be to shift the FF curve to the right by increasing the rate of return of nontradable assets. The reason for that is because this policy offers to the private sector the kind of assets it is seeking (nontradable ones) and absorbs from the private sector the kind of assets it wants to get rid of (tradable ones). It is in this sense that the policy accommodates the needs of the private sector and, in doing that, releases some of the pressure that the adjustment process places over the balance of payments. In other words, as a result of the exchange of assets implicit in this Type 2 privatization policy, an external imbalance for absorbing the whole decline in the demand for tradable assets it is no longer needed, the open market operation does part of this task. At the same time, the increased supply of capital to the private sector mitigates the decline in the return of capital associated with the additional demand prompted by the decline in r_F.

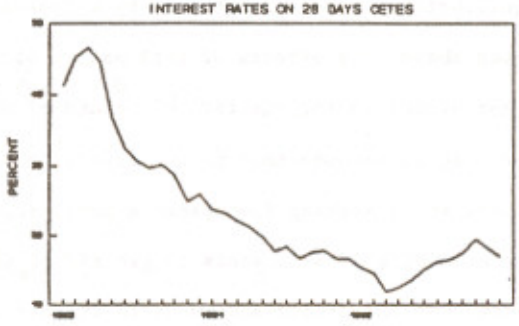
V. Conclusions

Section 3 argued that the Mexican economy faced, in 1990, a variety of factors that determined an increase in the relative attractiveness of Mexican assets in relation to foreign ones. During 1991 the renewed access to international voluntary financing was simultaneous to a significant deterioration of the current account. In terms of the model developed in

the previous section, the 1990 events that trigger the inflows of capital and the ensuing deterioration of the current account could be assimilated to a decline in r_F. Investors reacted rapidly to the changing economic perspectives of 1990. An economy characterized by a high degree of currency substitution faced a significant inflow of funds (see Table 1). Interest rates on Treasury Notes began a declining path in early 1990 that lasted until early 1992 (Chart 7). Stock market prices increased by -- percent in real terms during 1990 and 1991 (Chart 8). In brief, the economy faced a substitution in investor's portfolios favoring domestic assets and against tradable ones.

CHART 7

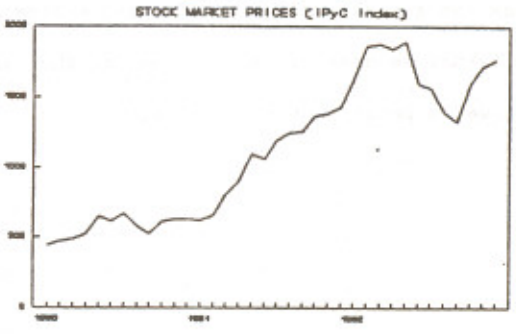
INTEREST RATES ON 28 DAYS CETES



It was with these renewed expectations as a background that the 1991-1992 privatizations took place. The decision to privatize the public enterprises was a crucial step toward strengthening the economic program and the structural change Mexico undertook after the external debt crisis. One of the main consequences of the privatization program was the significant decline in the Government's interest payments that took place after a

relevant part of the domestic debt was exchanged by the privatization proceeds. 1/ However, as the model of Section IV shows and the evidence presented in Section III suggest, the way in which the 1992 proceeds were used was not the most efficient one to fight back the current account deterioration. More than that, although the use of the proceeds to redeem domestic debt (Type 1 open market operation) has ambiguous effects on the current account for the reasons already mentioned, the empirical observation shows that a further deterioration in private savings was indeed observed during 1992 (see Table 1). This observation would imply that the adverse effect of the declining interest rates of domestic bonds was particularly important to discourage private savings.

CHART 8



Therefore, the main point of this paper is that contrary to what happened in 1991, the 1992 privatizations proceeds were mainly used to redeem public debt held by the private sector. This policy, aimed at improving the fiscal situation even further, had a cost in terms of the external equilibrium: it put undue pressure over the balance of payments to

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1/ As can be seen in Table 9, the domestic interest payments of the public sector declined from 4.1 percent of GDP in 1991 to 2 percent of GDP in 1992.

get rid of the private sector's tradable assets. The paper, finally, by no means aims at demoting the remarkable courage and determination of the Mexican government's privatization policy. It argues that there were alternative uses of the proceeds at the time when the external situation showed a persistent deterioration.

APPENDIX

1) Coefficients of equation 10:

$$a^{KB} = [(1-F^B)WF^K{}_B + F^K WF^B{}_B] / \Delta$$

$$a^{KK} = -[WF^B F^K{}_B + (1-F^K)WF^B{}_B] / \Delta$$

$$a^{KH} = [WF^K F^B{}_B - WF^B F^K{}_B] / \Delta$$

$$a^{KF} = [W^2 F^K{}_F F^B{}_B - W^2 F^B{}_F F^K{}_B] / \Delta$$

$$a^{BB} = -[WF^B{}_K F^K + WF^K{}_K(1-F^B)] / \Delta$$

$$a^{BK} = [WF^B{}_K(1-F^K) + WF^K{}_K F^B] / \Delta$$

$$a^{BH} = [WF^K{}_K F^B - WF^{BK} F^K] / \Delta$$

$$a^{BF} = [W^2 F^B{}_F F^K{}_K - W^2 F^B{}_K F^K{}_F] / \Delta$$

where $\Delta = W^2(F^B{}_K - F^K{}_K F^B{}_B)$

2) Coefficients of equation 28:

$$h_1 = [S_W + S_B a^B{}_H + (S_K - I_K)a^K{}_H]$$

$$h_2 = [S_W + S_B a^B{}_B + (S_K - I_K)a^{KB}]$$

$$h_3 = [S_W + S_B a^B{}_K + (S_K - I_K)a^{KK}]$$

$$h_4 = [S_F + S_B a^B{}_F + (S_K - I_K)a^K{}_F]$$

Table 1. Mexico: Summary Balance of Payments

	1989	1990	1991	Prel. 1992
	(In billions of U.S. dollars)			
Current account	-6.0	-7.8	-13.4	-22.8
Merchandise trade, f.o.b.	0.4	-0.9	-7.0	-15.9
Exports	25.8	30.4	31.2	32.3
Petroleum and derivatives	7.9	10.1	8.2	8.3
Other 1/	18.0	20.3	23.0	24.0
Imports	-25.4	-31.3	-38.2	-48.1
Services and transfers (net)	-6.4	-6.9	-6.4	-6.9
Factor income	-7.8	-7.6	-6.9	-6.9
Interest on public debt	-7.5	-7.5	-6.5	-5.7
Other interest payments	-1.8	-1.5	-1.9	-2.1
Other	1.5	1.4	1.5	0.9
Other services and transfers	1.4	0.7	0.5	0.2
Travel	1.4	1.5	1.9	1.9
Border transactions	-0.9	-1.5	-1.7	-1.8
Other	0.9	0.7	0.3	0.1
Capital account	4.9	11.0	20.8	24.7
Official capital	0.2	-0.9	-1.5	-0.6
Commercial banks	-0.3	1.9	-1.9	-1.2
Multilaterals	0.5	2.7	0.7	0.5
Bilaterals and suppliers	1.1	2.1	0.9	0.7
Other (including short term)	-1.2	-7.6	-1.2	-0.6
Private capital	4.7	11.9	22.3	25.3
Reinvestment of interest earnings abroad	-1.9	-1.6	-1.3	-0.9
Direct investment 2/	3.0	2.6	6.5	6.3
Direct investment	2.6	2.5	4.8	6.0
Debt-equity conversions	0.4	0.1	1.7	0.3
Net external credits	-0.2	5.4	7.8	6.7
Portfolio investment	0.5	2.0	7.5	10.7
Others, including errors and omissions	3.2	3.5	1.7	2.5
Net international reserves (increase -)	1.1	-3.2	-7.6	-1.9
	(As percent of GDP)			
Memorandum items				
Trade balance	0.2	-0.4	-2.5	-4.9
Current account balance	-3.0	-3.2	-4.7	-7.1
Gross international reserves	6.5	10.8	18.6	19.9
In months of: merchandise imports	3.1	4.1	5.9	5.0
Crude oil export volume (mns bbl/day)	1.3	1.3	1.4	1.4
Average crude oil price (US$/bbl)	15.62	19.22	14.48	14.84

1/ Includes net proceeds from in-bond industries.
2/ Including proceeds from debt-equity conversions.

Table 3. Mexico: Selected Economic Indicators

	1987	1988	1989	1990	1991	Prel. 1992	Proj. 1993
	(Annual percentage change)						
Real GDP	1.7	1.2	3.3	4.4	3.6	2.6	2.5
Consumer prices (average)	131.8	114.2	20.0	26.7	22.7	15.5	9.9
Consumer prices (end-of-year)	159.2	51.7	19.7	29.9	18.8	11.9	8.0
	(In billions of U.S. dollars)						
External sector							
Current account balance	3.1	-3.8	-6.0	-7.8	-13.4	-22.8	-22.3
Of which: exports (f.o.b.)	22.3	22.9	25.8	30.4	31.2	32.3	33.6
imports (f.o.b.)	-13.3	-20.3	-25.4	-31.3	-38.2	-48.1	-49.1
interest payments	-7.8	-8.6	-9.3	-9.0	-8.4	-7.7	-7.6
Official capital (net)	3.6	0.4	0.2	-0.9	-0.3	-0.6	0.4
Private capital (net)	-0.2	-3.4	4.7	11.9	21.2	25.3	23.5
Net reserve movement (increase -)	-6.6	6.8	1.1	-3.2	-7.6	-1.9	-1.7
	(In percent of GDP)						
Nonfinancial public sector							
Primary balance	5.0	6.0	8.1	7.8	5.5	5.6	4.8
Operational balance	2.0	-4.5	-1.7	2.6	2.3	3.3	2.1
Overall balance	-15.9	-13.2	-5.7	-3.4	-0.2	0.6	0.7
Total public debt 1/	89.6	73.1	63.7	54.9	44.3	35.9	30.8
Domestic	27.8	23.3	24.3	22.9	17.9	12.9	9.7
External	61.8	49.8	39.4	32.0	26.4	23.0	21.1
Savings and investment							
Gross domestic investment	19.3	20.5	21.6	21.8	21.3	22.0	22.4
Public sector	5.2	5.1	4.9	4.9	4.5	4.1	3.6
Private sector	14.1	15.4	16.7	16.9	16.8	17.9	18.8
Gross national savings	21.6	18.2	18.6	18.6	16.6	15.0	16.1
Public sector	7.3	0.4	3.2	7.4	6.6	7.3	5.6
Private sector	14.3	17.8	15.5	11.2	10.0	7.7	10.5
External savings (current account balance)	-2.2	2.2	3.0	3.2	4.7	7.1	6.3
Memorandum items							
Nominal GDP (billions of MexN$)	192.8	389.3	503.7	678.9	852.8	1,001.3	1,119.0
Nominal GDP (billions of US$)	139.9	171.2	204.6	241.4	282.5	323.6	350.7

Source: Mexican authorities; and Fund staff estimates.

1/ End-of-year stocks, including IMF.

Table 4. Mexico: Bank of Mexico Net Domestic Assets

(In billions of pesos)

	1991				1992			
	Mar.	Jun.	Sept.	Dec.	Mar.	Jun.	Sept.	Dec.
Stocks								
Net International reserves	21,802	34,446	34,354	35,989	40,381	40,532	41,323	42,455
Net domestic assets	2,538	-9,618	-9,786	-1,115	-11,434	-9,464	-11,756	-1,848
Net credits to public sector	32,741	28,244	21,129	21,413	15,576	20,851	8,397	15,451
Net claims to Ficorca	-292	-50	-303	-120	-271	-189	--	--
Nonfinancial public sector accrued and unpaid interest	255	185	41	13	22	24	39	16
Other	-30,165	-37,997	-30,653	-22,421	-26,760	-30,149	-20,193	-17,315
Note issue	24,340	24,828	24,568	34,874	28,946	31,068	29,567	30,606
Cumulative flows								
Net international reserves	9,322	21,613	21,090	22,549	4,219	3,840	4,700	5,843
Net domestic assets	-10,909	-22,713	-22,449	-13,603	-10,146	-7,645	-10,007	-111
Net credit to public sector 1/	-11,124	-21,789	-22,300	-21,128	-6,281	-644	-11,447	-6,203
Net claims on Ficorca	140	383	130	313	-151	-69	120	120
Nonfinancial public sector accrued and unpaid interest	99	30	-115	-143	8	11	26	3
Other (residual)	-25	-1,336	-164	7,356	-3,723	-6,943	1,293	5,969
Note issue	-1,587	-1,100	-1,359	8,946	-5,928	-3,806	-5,307	5,732

1/ Adjusted for provision of credit for guarantees, foreign currency proceeds from privatization, SAR deposits, and transfers of profits to the federal Government.

Table 6. Mexico: Financial Flows

(In millions of Mexican new pesos, unless otherwise indicated)

	1989	1990	1991	1992 1/
Total sources of funds	69,660	78,511	84,471	84,001
Cumulative flow of M-2	35,219	55,414	80,547	62,338
(Percentage real annual growth)	21	14	24	12
Net government securities held by the nonfinancial private sector	21,384	19,992	-12,520	4,239
Commercial banks foreign borrowing	15,269	-1,275	15,389	13,981
(In billions of U.S. dollars)	6	--	5	5
Nonfinancial public sector foreign borrowing (net)	-2,212	4,380	1,055	3,443
(In billions of U.S. dollars)	-1	2	--	1
Total uses of funds	69,660	78,511	84,471	84,001
Net international reserves				
(Increase +)	-2,697	9,002	22,936	5,879
(In billions of U.S. dollars)	-1	3	8	2
Economic balance of the public sector	26,731	24,278	-29,330	-44,556
Of which: external financing	-2,212	4,380	1,055	3,443
domestic financing	28,943	19,898	-30,385	-41,113
Credit to private sector	42,558	61,400	92,260	121,791
(Percentage real annual growth)	49	26	33	33
Net unclassified 2/	3,068	-16,169	-1,395	887
Memorandum item				
Nominal GDP	503,668	678,923	852,783	1,001,911

Sources: Bank of Mexico; and Fund staff estimates.

1/ Preliminary.

2/ Includes capital and surplus, net claims on trust funds, net foreign assets of commercial banks, SDRs holdings, valuation adjustments, and net interbank float.

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