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RUDIGER DORNBUSCH
Massachusetts Institute of Technology

ALEJANDRO WERNER
*Massachusetts Institute of Technology*

Mexico: Stabilization, Reform, and No Growth

IN THE SECOND HALF of the 1980s, after strenuous efforts, Mexico was coming to be viewed as a showcase of successful stabilization and economic reform, institutional stability, and financial predictability. Mexico was becoming what Chile already had become and what all of Latin America hoped to be. But the Chiapas uprising, the assassination of presidential candidate Luis Donaldo Colosio, the ensuing muddle about his succession, and the sheer fact of an election year have raised doubts about Mexico's ability to achieve lasting stability. By April 1994, the sharp upturn in interest rates, arising from speculative attacks on the peso, suggested that a far too optimistic view may have been taken of Mexico's future. The Mexican economy had come to a virtual standstill. Per capita income is now far below what it was in 1980, as shown in figure 1, and from 1992 to 1993 it fell by 1.2 percent. Moreover, any positive growth that may occur, in 1994, will have been fueled by fiscal expansion not by strength in the real economy.

This paper argues that Mexico suffers from a failure to accompany the stabilization of inflation, shown in figure 2, and the impressive array of economic reforms with not only true political reform but also true economic progress. The stabilization strategy has led to an overvaluation of the exchange rate, a precarious financial situation, and a lack of growth. Real interest rates paid by firms continue to be very high, nonperforming loans have been increasing, and the current account deficit stands at more than $20 billion.
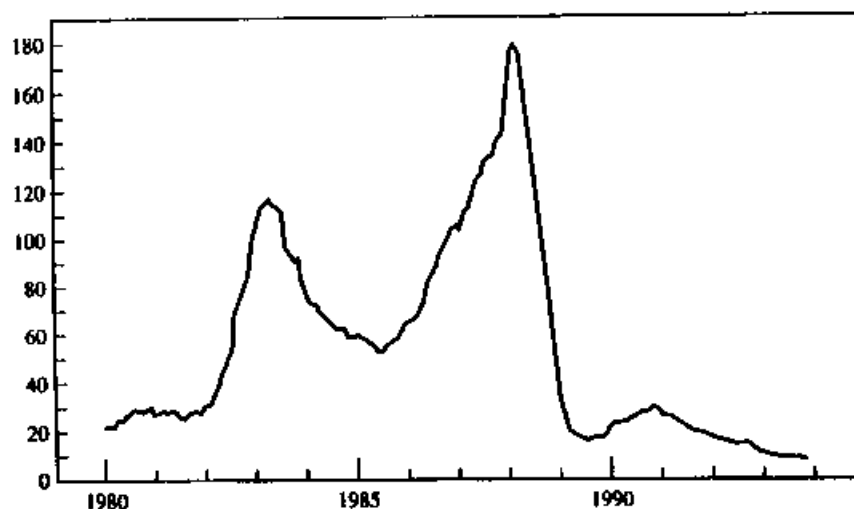
Arguably, the lack of growth may reflect the costs of transition, as the massive restructuring causes expansion in some industries and contrac-

Figure 1. Per Capita GDP in Mexico, 1970–93

Index, 1972 = 100
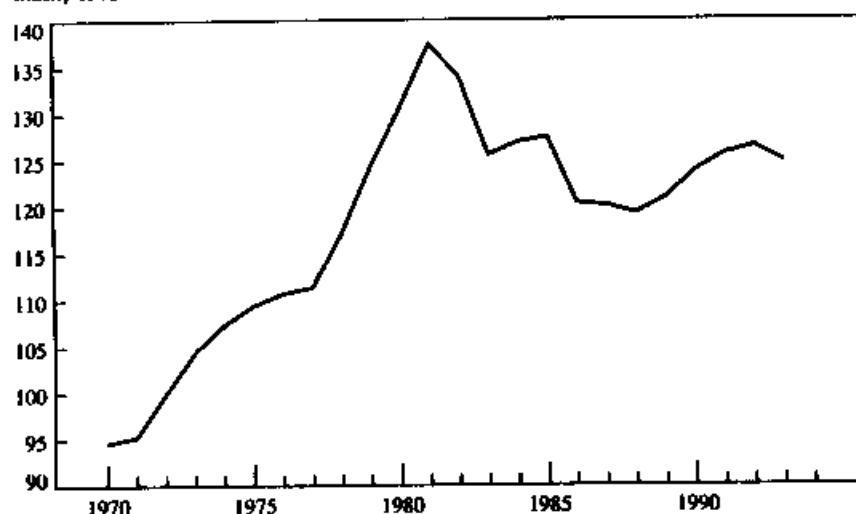
Source: Authors' calculations based on *International Financial Statistics.*

Figure 2. Mexican Consumer Price Inflation, 1980–93

Percent[a]

Source: Authors' calculations based on Banco de México. *Indicadores Económicos,* various issues.
a. Inflation rate measured as the change in the current month's consumer price level over the level 12 months earlier.

tion in others, with the balance expected to shift soon toward expansion as the rewards of reform cumulate into sustained high growth. The more pessimistic view, however, is that just as in Chile in the late 1970s positive, sustainable growth will come only after the overvaluation is corrected.

Of course, whether an overvaluation exists is controversial. Until very recently, the level of interest rates and capital inflows did not suggest a problem at all. During the past few years the country has been flooded with capital inflows, and the passage of the North American Free Trade Agreement (NAFTA) has only bolstered that trend. This avalanche of capital has strengthened the currency in real terms—which is the expected effect of an inward transfer. In other words, if a country borrows to invest, real appreciation accompanies the high level of resource absorption, more so if deep reform opens up large, lasting opportunities. The credit rating has also been improving steadily, with the cost of capital falling by 150 basis points since the passage of NAFTA (September 1993 to December 1993).

This positive take on recent developments is articulated by Mexican policymakers whenever they are challenged about the economy's direction. Guillermo Ortiz, for example, argues,

It is true that the Mexican currency has appreciated, but such a fact is far from implying a strong devaluation of the currency. That depends on the equilibrium of the real exchange rate, which is difficult to calculate, adding to the fact that the peso had undergone a strong devaluation before the current stabilization effort started, which probably made it undervalued. . . . the appreciation process is a natural, and not necessarily negative, consequence of the reform process in Mexico.[1]

Less sanguine observers argue that the financial flows may be fragile, however. The flows are financing not only investment but also a high level of consumption and intermediate goods imports, with the large external deficit dampening demand for domestic goods. For full employment to occur, then, crowding-in is required (through an increase in the demand for domestic production). According to this argument, trade liberalization, which was an important part of recent reform, should have been accompanied by real *de*preciation not *ap*preciation. To a large extent, we agree real depreciation is needed to improve the long-term economic prospects of Mexico and secure the benefits of economic reform.

1. Ortiz (1994, p. 306).

Table 1. Long-Run Economic Performance of Mexico, 1955–93

Percent per year

Period	Real per capita GDP	Consumer price inflation[a]
1955–72	3.1	3.9
1972–81	3.6	20.6
1981–88	2.0	86.2
1988–92	1.5	21.1
1993	– 1.2	9.7

Source: Authors' calculations based on *International Financial Statistics* and unpublished data from Instituto Nacional de Estadística, Geografía, e Información (INEGI).

a. Year average over previous year's average.

Historical Background

From the mid-1950s to the 1970s, Mexico was a paragon of financial stability and growth. The exchange rate against the dollar was fixed; convertibility was unrestricted; inflation was moderate; and growth of real per capita income was high. Table 1 traces the long-run growth and inflation performance of the Mexican economy.

The stability ended with the oil price increases of the 1970s because of fiscal extravagance resulting from dramatic increases in revenue from oil exports. With added room in the budget, policies became highly expansionary, the currency became overvalued, government borrowing increased, and capital flight began. A huge increase in government debt and the collapse of the financial system, as well as the exchange rate, soon followed. Mexico became insolvent in 1982—the first of the debtor countries to do so—and shifted to a regime of debt restructuring, which culminated in the 1990 Brady plan agreements brokered by then-U.S. Treasury Secretary Nicholas Brady. As a result of the Brady plan and the reforms that accompanied it, voluntary lending returned earlier than expected and in large amounts.[2] We detail the key areas of reform below.

Return to Voluntary Lending

In the period leading up to 1982, Mexico accumulated an external debt amounting to 49 percent of gross domestic product. The accumula-

2. See Aspe (1993) for a comprehensive account of the reforms.

Table 2. Mexican Debt and Transfers, 1982 and 1992

Percent of GDP, except as noted

Indicator	1982	1992
External debt	49.0	32.0
Resource transfer[a]	5.4	– 5.3
Reserves[b]	1.8	19.3

Sources: Authors' calculations based on data from Banco de México (1993); Aspe (1993); and Salinas de Gortari (1993).

a. Noninterest current account surplus as percent of GDP.

b. Billions of U.S. dollars at end of year.

tion was mostly due to large current account imbalances. But, in addition, the growing currency overvaluation and financial turmoil—including exchange control and bank nationalizations—meant that capital flight became an important additional factor in running up the external debt. The picture was completed by extremely high U.S. interest rates, which led to large debt service financed by more borrowing.

However, just like Germany during the Weimar republic, Mexico never paid much of what looked, in 1985, like a crushing debt service burden. Early involuntary bank lending and credits from multilateral institutions reduced the crisis. And since 1989, Mexico has had access to international borrowing—in fact, foreign investors have eagerly sought Mexican government debt in pesos and dollars, and Mexican firms have borrowed in the world market. Mexico's external position is described in table 2.

As mentioned above, the turning point in Mexican external financing was the Brady plan. Until that time, multilateral institutions and the U.S. Treasury held the firm view that debt forgiveness would have highly adverse consequences for debtors and creditors alike. Many felt that banks were in a poor position to recognize the capital losses and that debtors' creditworthiness would be tarnished for a long time if they did not meet their obligations. But the Brady plan was able to remove the debt issue from the agenda and shift attention to reform and modernization. This shift, in Mexico and elsewhere in Latin America, broke the ground for Mexico's return to world capital markets and for direct investment in the country.

The Brady plan improved Mexico's ability to service its external debt by reducing the interest and principal payments it had to make.[3] The

3. See Claessens, Oks, and van Wijnbergen (1994).

Table 3. Net Capital Inflows into Mexico, 1989-92

Billions of U.S. dollars

Type of investment	1989	1990	1991	1992
Portfolio	− 1.7	5.9	19.6	21.1
Direct	2.6	2.5	4.7	5.4

Source: *International Financial Statistics*.

yield spread in the international market between Mexican public debt and industrial country debt of comparable maturity fell from 820 basis points in 1989 to about 200 basis points in the first half of 1993.[4] The improvement cannot be fully attributed to the debt reduction scheme, however. Some credit also goes to the macroeconomic reforms undertaken by Mexico, as well as the large reduction in world interest rates, which alleviated the debt service burden. The trends in voluntary capital flows are shown in table 3. In 1988, capital was still flowing out of Mexico; in 1989, inflows barely reached $0.9 billion. But by 1992, two years after the Brady plan, they amounted to almost $26.5 billion; and in just the first three quarters of 1993, capital inflows totaled $22 billion.

Improving prospects in the private sector along with an increase in the worldwide flow of capital toward emerging markets were other important causes of rising capital inflows, as private borrowing and equity financing began to replace government borrowing in the capital markets.[5] The resulting boom in the stock market was both an effect *and* a cause of the inflows—the flows helped boost the market, which attracted still more capital. The stock market rose 125 percent in 1991, about 25 percent in 1992, and almost 50 percent in 1993. The capital inflows also led to an accumulation of reserves and a steady decline in interest rates.

Thus far, direct investment has been relatively small, but it is expected to increase with NAFTA's passage. One private forecast, for example, envisages a near-doubling of the rate of private direct investment in 1994.[6] There is no reason to believe that with a stable and competitive economy Mexico is not capable of attracting a very substantial inflow of

4. See IMF (1993, p. 64).
5. See Calvo, Leiderman, and Reinhart (1993a, 1993b).
6. See Centro de Análisis e Investigación Económica (1994, p. 19).

capital. By way of comparison, between 1982 and 1990, after Spain's entry into the Common Market, direct foreign investment in that country increased from 0.8 percent to 2.1 percent of GDP.[7]

Waves of excitement in supplying developing countries with capital are not unprecedented. The historical record can lend some perspective to the present upswing in capital inflows. Taussig describes the usual sequence of events,

The loans from the creditor country . . . begin with modest amounts and proceed *crescendo*. They are likely to be made in exceptionally larger amounts toward the culminating stage of a period of activity and speculative upswing, and during that stage become larger from month to month so long as the upswing continues. With the advent of crisis, they are at once cut down sharply, even cease entirely. The interest payments on the old loans thereupon are no longer offset by any new loans; they become instantly a net charge to be met by the borrowing country. A sudden reversal takes place in the debtor country's international balance sheet; it feels the consequences abruptly, in an immediate need of increased remittances to the creditor country, in a strain on its banks, high rates of discount, falling prices. And this train of events may ensue not only once. . . .[8]

Taussig's view *understates* the potential trouble in Mexico. The foreign portfolio capital invested in the Mexican money market, as well as investments in stocks, is highly liquid. Moreover, there is not only scheduled debt service but also a very large trade deficit that is financed by borrowing abroad.

Perhaps Mexico will prove Taussig wrong, however, and the usual pattern of excess lending and subsequent crisis is not relevant. But for this time to be different, there would have to be fundamental and irreversible change in the debtor country to warrant the sustained large inflows. Today, the possibility of such change is much greater than it has ever been before.

Budget Correction and Privatization

Budget consolidation was a central part of Mexican stabilization and reform. Here, Mexico pursued three objectives: a major cut in government spending; tax reform to increase the tax base, efficiency, and compliance; and privatization of state-owned enterprises. On the spending side, investment expenditures were cut by 5 percent of GDP. On the revenue

7. Calculated using the data reported in *International Financial Statistics*.
8. Taussig (1927, p. 130).

Table 4. Mexican Budget and Debt, 1982–92

Percent of GDP

Indicator	1982	1983	1992[a]
Budget surplus			
Total[b]	– 16.9	– 8.6	0.5
Operational[c]	– 5.5	0.4	3.6
Primary[d]	– 7.3	4.2	5.6
Taxes	8.7	8.4	12.2
Debt			
Domestic	15.5	16.5	10.1
Foreign	35.8	43.7	16.4

Source: Authors' calculations based on Banco de México (1993).
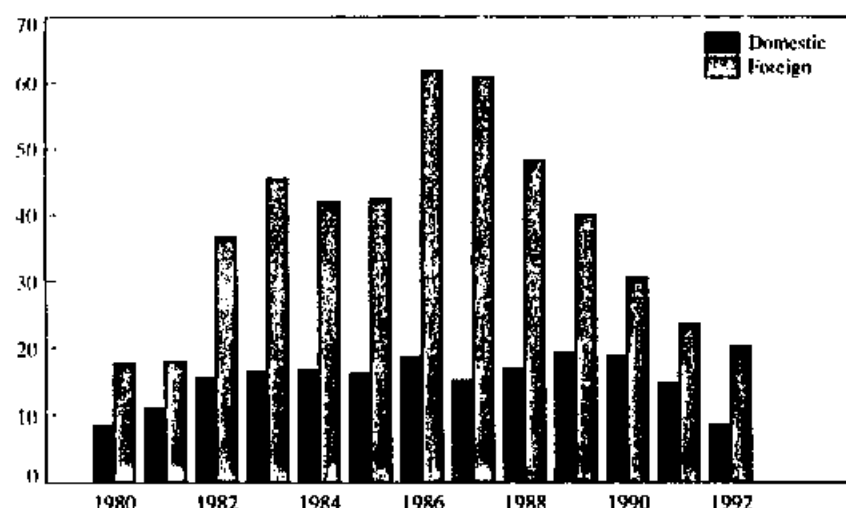
a. Numbers exclude revenues from privatization.

b. Public sector borrowing requirements.

c. Public sector borrowing requirements adjusted by the inflationary component of interest payments on domestic debt.

d. Public sector borrowing requirements plus interest payments on government debt.

Figure 3. Mexican Public Debt, 1980–92

Percent of GDP

Source: Authors' calculations based on Banco de México (1993).

enue side, during 1982–92, the tax yield was raised by 4 percent of GDP even while marginal tax rates were reduced. Table 4 reports some general trends in the budget.

This extraordinary reduction in the operational budget deficit—9 percent of GDP, or the equivalent of three Gramm-Rudman cuts, as many Mexicans put it—set the stage for Mexico's strategy of disinflation, im-

Table 5. State Enterprises in Mexico, 1982–92

Indicator	1982	1986	1992
Number of enterprises	1,155	737	217
Employment[a]	886.2	1,028.0	530.6

Sources: *Informe Hacendario*, October–December (1993, p. 27); and unpublished government data from INEGI.

a. Thousands

proved confidence in the currency, and ultimately lowered interest rates. With primary surpluses averaging 5.3 percent of GDP over the 1983–92 period, the debt-to-GDP ratio declined, as shown in figure 3, even though growth was very slow or negative.

Privatization was a key part of the public finance reforms. The large government deficits could be most effectively controlled by either selling off firms or simply closing them. If a firm were unprofitable, closing it cut the drain on government resources. If a firm were potentially profitable, revenues from its sale could help improve public finance by reducing the cost of financing the public debt. Table 5 describes the position of state enterprises in Mexico over the past decade.

Privatization also played a role in drawing foreign attention to investment opportunities in Mexico and fueling the external financing of Mexican reform. It acted as a galvanizing force at a time when low interest rates in the United States had created a willing group of investors.

Trade Reform

Among the specific macroeconomic reforms undertaken by Mexico was trade reform. Table 6 shows the trade liberalization that occurred in the 1980s. Average tariff rates declined, as did the dispersion of rates.

The tariff reductions particularly apply to consumer goods. In this

Table 6. Tariff Levels in Mexico, 1982–92

Percent

Tariff statistic	1982	1986	1992
Average tariff	27.0	22.6	13.1
Trade-weighted average	16.4	13.1	11.1
Tariff dispersion	24.8	14.1	4.5
Import quota cover rate[a]	100.0	28.0	11.0

Source: General Agreement on Tariffs and Trade (1993, vol. 1, p. 74, and vol. 2, p. 50).

a. Percentage of total value of imports subject to quantitative restrictions.

category, the average tariff declined from 60 percent in 1983–84 to less than 20 percent in 1992. For intermediate and capital goods, the initial level was about 20 percent and hence the liberalization was more moderate. Import quotas, which were pervasive in the 1980s, are now nearly gone.[9] Far bolder than these measures will be the complete liberalization of trade in goods and services to occur in North America over the next 15 years in accordance with NAFTA.

Factors behind the Real Exchange Rate Appreciation

We now turn to alternative interpretations of the real exchange rate appreciation in Mexico. One view emphasizes the prosperity and new opportunities brought about by the appreciation. The other recognizes the improvements but argues that the manner in which the stabilization was accomplished sowed the seeds of an overvaluation that is becoming a source of speculative instability. As we argue below, the interaction of two major policy steps bears much of the responsibility for the overvaluation: nominal exchange rate stabilization and incomes policy.

As mentioned earlier, Mexico has experienced a huge real appreciation in its exchange rate over the past few years. The dramatic trade opening of the 1980s has thus been accompanied by a rise in the relative price of Mexican goods, and a large external deficit has emerged. Real interest rates have declined over the past few years but remain exceptionally high. GDP growth has been negligible. The combined evidence suggests that demand has shifted to foreign goods and that the growth-reducing effect of real appreciation has been aggravated by a high real cost of credit.

Figures 4–6 show Mexico's trade balance, current account, and import penetration. They leave no doubt of a major deterioration since the mid-1980s. The current account deficit has risen to almost 7 percent of GDP, a very high number for a developing country. And the external deterioration would have been even worse without the strong export growth of recent years. In the 1985–92 period, exports increased by about 75 percent, as imports tripled.[10] As a result of this imbalance, lack of financing is becoming a real issue. The trade liberalization previously

9. See General Agreement on Tariffs and Trade (1993, vol. 1, pp. 74–75, and vol. 2, pp. 50–51).
10. More exactly, imports increased by 238 percent and total exports by 73 percent.
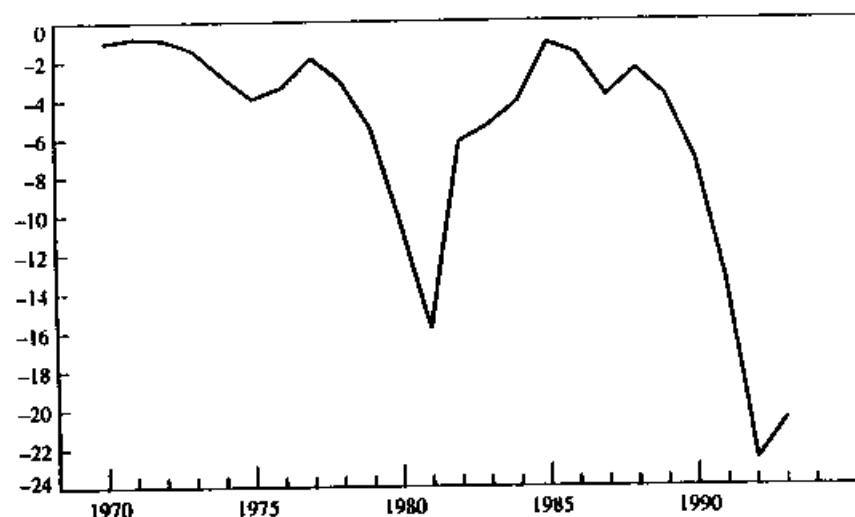
Figure 4. Mexican Trade Balance, 1975–93
Billions of U.S. dollars[a]
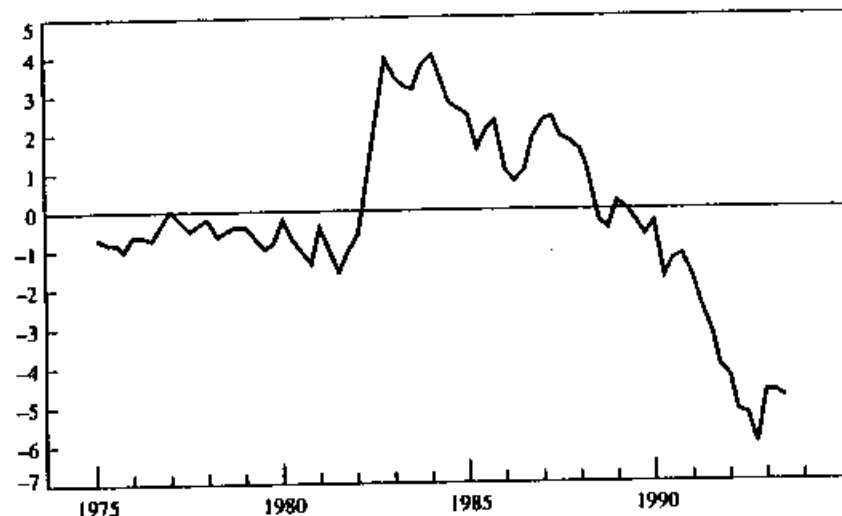
Source: Banco de México, *Indicadores Económicos*, various issues.
a. The amount plotted is the figure for each quarter.

Figure 5. Mexican Current Account, 1970–93
Billions of U.S. dollars

Source: Authors' calculations based on Banco de México, *Indicadores Económicos*, various issues.

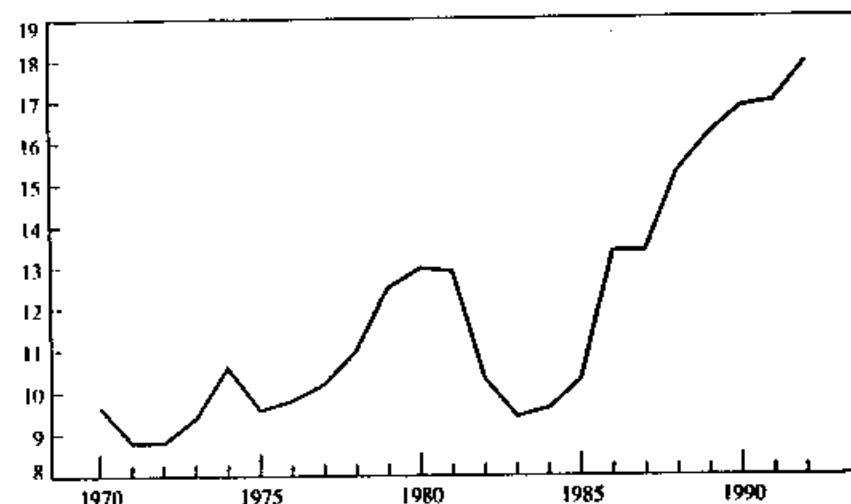**Figure 6. Imports as a Percent of Mexican GDP, 1970–92**

Percent

Source: Banco de México. *Indicadores Económicos*, various issues.

Figure 7. Mexico-U.S. Relative Price Levels, 1970–93
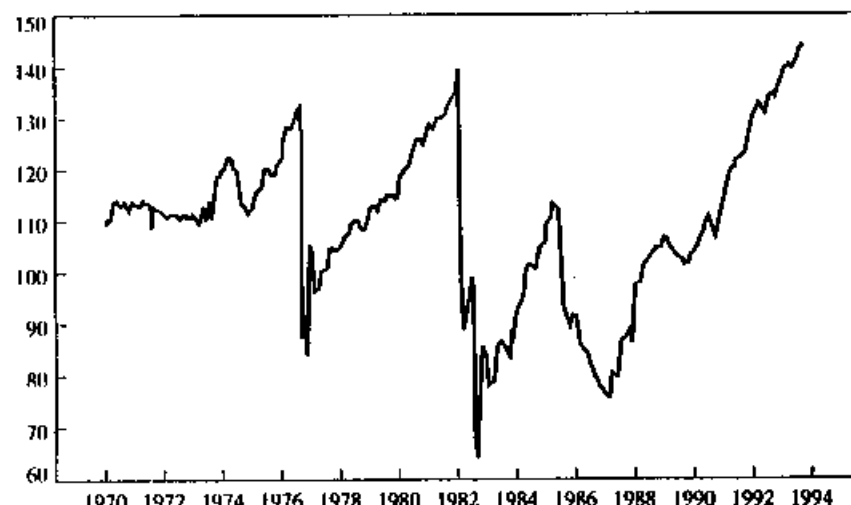
Index, 1985 = 100[a]

Source: Authors' calculations based on *International Financial Statistics*.
a. The index is constructed using wholesale price data from Mexico and the United States, denominated in dollars.

Table 7. Competitiveness Measures for Mexico, 1989–93

Units as indicated

Measure	1989	1990	1992	1993
Wages in dollars[a]	1.58	1.64	2.35	2.65
J.P. Morgan index[b]	108	100	108	117
Banco de México index[c]	88	92	109	112

Sources: Authors' calculations based on unpublished data from the U.S. Bureau of Labor Statistics; Banco de México (1993); Morgan Guaranty Trust Company (various issues).
a. Hourly compensation in manufacturing in dollars.
b. J.P. Morgan multilateral real effective exchange rate index in nonfood manufacturing. 1990 = 100.
c. Real exchange rate index based on the unit labor costs in manufacturing, 1985 = 100.

discussed is one reason for the large increase in imports and import penetration—strong growth clearly is not—but real appreciation can be held accountable for the trade deterioration, too. It has reinforced the trade pattern by making imports cheaper and restricting export expansion.

There are a number of measures of the real exchange rate. We show the least elaborate one in figure 7: producer prices in Mexico relative to those in the United States, as measured in a common currency. The figure makes it apparent that since 1987 the real exchange rate has steadily appreciated to today's historic high. The rate is even higher than at its pinnacle before the currency collapse in 1982. Of course, there is no good benchmark date against which to judge the current levels, and certainly a moment of maximum distress, such as 1982 or 1986, is not an appropriate starting point. On the other hand, a real exchange rate that is higher than ever before is suspicious, even when major reforms and access to capital justify some real appreciation.

Table 7 shows several real exchange rate measures. Even if the U.S. comparison were inconclusive, each of these numbers tells a similar story. By all measures, prices in Mexico, on a dollar basis, have risen relative to those in the rest of the world. Moreover, except for the mini-devaluation at the beginning of 1994, the process continues: the J.P. Morgan index reached 121.7 in January 1994, compared with its 1990 (base year) level of 100.

Other aspects of the domestic economy are also relevant here. Growth has been slow and came to a halt in 1993. Figure 8 shows that (formal) employment has been falling and that industrial production since 1992 is at best flat. The evidence on production confirms the evidence gleaned from prices: something is awry in the Mexican economy.

Figure 8. Industrial Production and Employment in Mexico, 1988–93

Index, 1980 = 100[a]
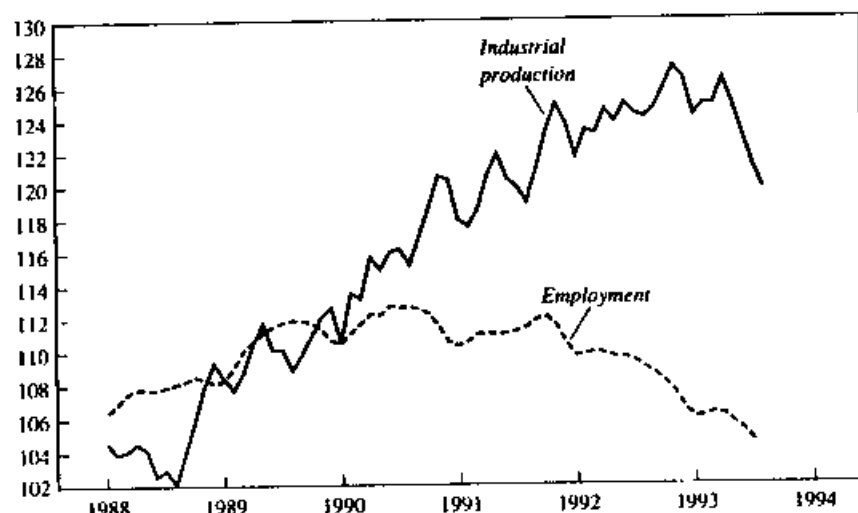
Source: Authors' calculations based on the industrial production index from *International Financial Statistics* and employment figures from Data Resources, Inc.

a. Indexes are constructed using three-month moving averages of the data.

Two explanations for this evidence are offered by the more optimistic observers. First, it is asserted that reform, modernization, and the return to world capital markets (reinforced by the institutionalization that NAFTA is bringing) have changed the equilibrium prices of labor and assets. And the fact that prices have increased so much is not surprising, since Mexico has come from the deep troughs of 1982 and 1986 to very high peaks. This view stresses that Mexican reforms have been spectacular, lasting, and the envy of any reform economy. In other words, these observers argue that real appreciation should not be confused with overvaluation.

A related but more moderate view concedes that Mexico has a growth problem but that it is only transitory. Some firms are contracting as they adjust to the new and forward-looking *equilibrium* real exchange rate, while other firms are expanding to meet new opportunities. Increasingly, in their view, the expansion will come to dominate the contraction.

Theoretical Approaches to the Exchange Rate Problem

We now examine these different assertions using two theoretical approaches to the exchange rate question. One clarifies what to expect in an equilibrium model from the various reforms, identifying in particular the effects of liberalizing trade and capital flows on the real exchange rate. The other model looks at the mechanics of an incomes policy-based stabilization to show that the overvaluation could have been predicted.

Equilibrium Hypothesis

The first model focuses on the interaction of capital, goods, and labor during the process of trade liberalization, domestic fiscal tightening, and improving the access to external capital. Specifically, we are interested in the predictions of the *equilibrium* model regarding resource allocation, asset prices, and the real exchange rate. We review the Mexican reforms, one at a time, in terms of this model.

We assume that capital is used to produce tradables. Nontradables, or home goods, by contrast, are produced with labor alone. Labor is mobile across all sectors. In the tradables market, firms produce at given world prices with capital and labor. Production functions are neoclassical. Thus, labor demand in the traded goods sector depends on the given capital stock and the wage in terms of dollars. An increase in the product wage reduces the demand for labor in the traded goods sector at a given capital stock.

Consider now the home goods market. To start, assume that all disposable income from labor is spent and all income from capital is saved and invested at home. There is also government spending in the amount G, which is initially financed by borrowing abroad. Demand for home goods is a function of the relative price of exports and imports in terms of home goods. We assume that expenditure shares are constant. We also assume a given unit labor requirement. For simplicity, it is set at unity.

The rate of investment in the economy depends on the profitability of installing capital. Installation of new capital uses imported machinery with an increasing marginal cost. The higher the price of installed capital

in dollars, the higher is the rate of gross investment. Net investment is gross investment less the given rate of depreciation:

(1) $$\dot{K} = I(q) - dK,$$

where $\dot{K}$ is the increase in the capital stock, K is the capital stock, I is gross investment, d is the rate of depreciation of the capital stock, and (Tobin's) q is the price of installed capital in dollars.

Wages in dollars, w, are determined in the labor market that is in equilibrium when sectoral labor demands equal the available labor supply. Accordingly, the labor market yields an equilibrium wage as a function of the capital stock, the level of government spending, and the income tax rate:

(2) $$w = w(\overset{+}{K}, \overset{+}{G}, \overset{-}{t}).$$

where t is the income tax rate.

Other things equal, equilibrium wages in dollars are higher, the higher is the economy's aggregate capital stock or the higher is government spending. A higher income tax rate reduces the demand for home goods and thus, other things equal, reduces wages.

The model is closed by specifying either access to the capital market or the financing of investment. We first consider the case where there is no access to the international capital market. All investment is financed at home out of income from capital. Income from capital increases with the capital stock but declines as the wage in dollars rises, because the return to a unit of capital, $R(w)$, is declining in w:

(3) $$qI(q) = KR(w).$$

The model is summarized in figure 9. Along the IS schedule, the labor market clears, and saving is equal to investment. The schedule is normally upward sloping to reflect the assumption that a rise in the capital stock raises total profits. Along the $\dot{K} = 0$ schedule, the capital stock is constant. The economy's steady state is point A, where saving is equal to investment and the capital stock is stationary.

Consider now the effect of budget consolidation through higher tax rates or lower government spending. Reduced labor demand arising in the home goods market will lower the equilibrium real wage. For a given capital stock, the fall in dollar wages raises profits. Thus, the IS curve

Figure 9. Capital Accumulation in a Financially Closed Economy

Capital stock, K
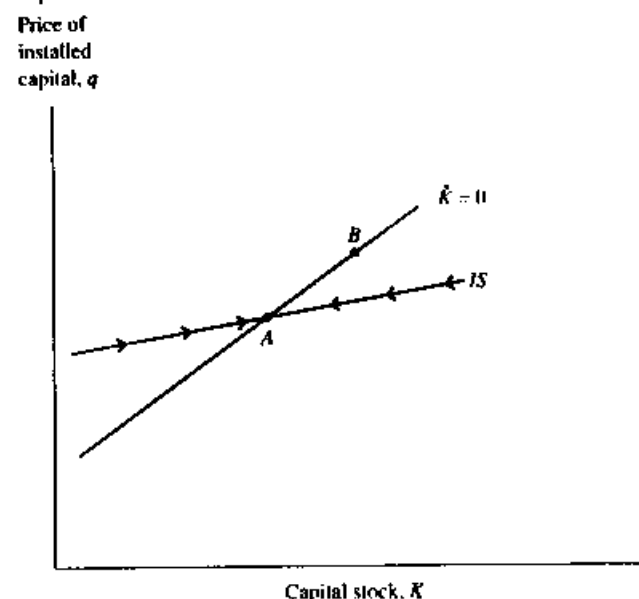
shifts upward to IS' (not shown). There are immediate increases in profits, the real price of capital, and the equilibrium rate of investment. Over time the economy moves to point B. Capital will have been accumulated and the fall in the real wage will have been offset, at least partially, by the increased capital stock. The traded goods sector expands as the shift toward a balanced budget involves a cut in demand and a reallocation of resources to the traded goods sector.

As for the real exchange rate, one must look at the wage in dollars. This model predicts that budget cuts will lead to real depreciation—a fall in the wage in dollars—in the short run. Later, as capital accumulates there is some real appreciation.

Consider next the case where the economy opens up financially. Specifically, let the country in the model have access to capital at the yield i^* in dollars, which is the New York prime rate plus a risk premium. The arbitrage equation representing the capital market equilibrium is

(4) $$\dot{q}/q = i^* - R(w)/q.$$

Figure 10 shows the initial equilibrium at point A. The immediate effect of the financial reform (assuming $i^* < d$) is a boom in asset prices, mov-

Figure 10. Capital Accumulation in a Financially Open Economy

Capital stock, K
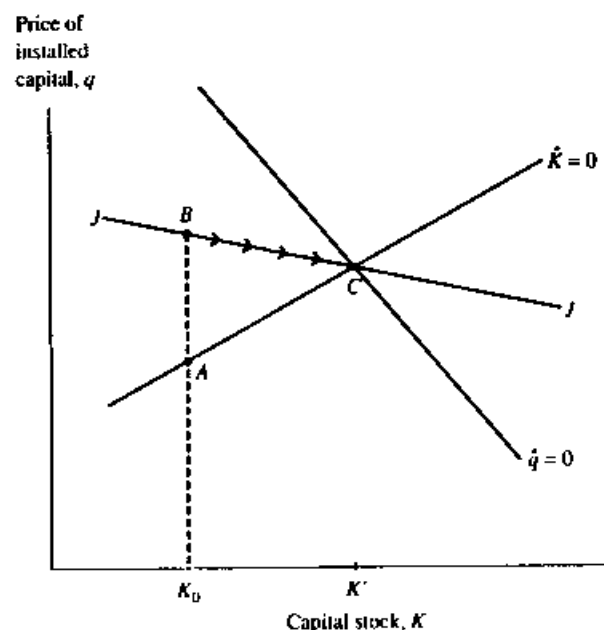
ing the economy from point A to B. Then the economy moves along the stable trajectory JJ from point B to C. The high real price of capital immediately encourages a higher rate of capital formation. Over time, as capital accumulates, real wages rise or the real exchange rate appreciates. The traded goods sector expands by becoming more capital intensive. The expansion is made possible by the high valuation of capital and the resulting capital accumulation.

The model highlights that greater access to world capital markets brings about equilibrium real appreciation. It also improves welfare for workers while rewarding owners of existing capital. Everybody wins, even the government, since the tax base and hence tax revenues expand.

The process of opening up the capital account or gaining access to world capital markets is reinforced when the political risk premium declines. This corresponds to a reduction in the cost of capital, i^*, and an upward shift in the trajectory JJ (not shown). Stock prices rise and investment booms. Finally, real wages rise and the tax base expands—resulting in prosperity for all.

Access to the capital market also affects consumer behavior. Spe-

cifically, domestic financial repression and credit rationing may decline, a process that could be fostered by an international financial opening. Availability of consumer credit then raises spending, part of which falls on home goods. Wages in dollars rise, and this effect tends to reduce asset prices (in the tradable goods sector) and reduce capital formation. Financial opening is therefore a mixed issue. Its effects on capital formation depend on whether there is significant financing for consumers as opposed to firms.[11]

Next consider the effects of trade liberalization. Suppose specifically that a group of imported consumer goods, previously prohibited, becomes available. We represent this as a fall in the share of nontraded goods in total spending. As the demand for home goods declines, the equilibrium wage in dollars falls. The increased profitability of capital in the traded goods sector boosts the stock market. Over time, capital accumulates and real wages recover. To maintain full employment, trade liberalization unambiguously requires a real depreciation or a fall in the dollar wage.

Finally, measures that increase efficiency also affect the equilibrium model. An increase in total factor productivity increases labor demand and raises the equilibrium relative wage. Even so, profitability rises and the real price of capital increases accordingly. Capital formation expands, raising real wages.

Overvaluation Hypothesis

The overvaluation hypothesis views the real appreciation of the exchange rate as the outcome of an inflation stabilization using incomes policy and exchange rate targeting. In Mexico, such policies were central to bringing down inflation from its peak of nearly 200 percent (figure 2).

Incomes policy is practiced in a formal and ceremonious agreement called the *pacto*. The parties are the government-friendly unions with their octogenarian boss Don Fidel Velasquez, representatives of the business community, and the government. Labor agrees to limit wage inflation; business agrees to limit price increases; and the government contributes with commitments on public sector prices and the exchange rate. The agreements initially ran for 2 months and have been extended

11. This point is made by Japelli and Pagano (1994).

Table 8. Inflation and Depreciation in Mexico, 1987–93

Percent per year

Year	Producer price index[a]	Consumer price index[a]	GDP deflator	Wage inflation[b]	Exchange rate[c]
1987	145.3	131.8	139.6	128.9	120.4
1988	99.3	114.2	99.4	109.7	62.9
1989	12.8	20.0	25.9	30.8	8.5
1990	22.7	26.7	29.5	30.6	14.3
1991	19.1	22.7	21.6	28.4	6.2
1992	12.0	15.5	16.2	26.6	2.6
1993	6.6	9.8	11.0	16.5[d]	0.0

Sources: Banco de México (1993); Banco de México, *Indicadores Económicos*, various issues; and unpublished data from the Mexican Finance Ministry.

a. Year average over previous year's average.

b. Nominal average earnings in manufacturing.

c. Pesos per dollar.

d. Measured from August to August.

to 6 and 12 months. They have been followed by the government and renewed regularly. In appendix A, we report the terms of the *pacto* agreements of the 1987–93 period.

At the outset, the *pacto* contained price controls for a basket of essential consumer goods. Increasingly, the use of formal controls has receded and given way to a broad understanding of the room for price increases, specific wage targets, and discussions of productivity-based wage policies. The exchange rate commitment by the government continues to be central. Mexico has taken a decidedly corporatist approach to prices and the labor market. The government because of its pervasive, unrestricted powers can make agreements stick.

Trade liberalization was another feature of the disinflation strategy. Since domestic markets in Mexico were highly oligopolistic and controls might risk shortages, liberalization was used to enforce better price discipline and alleviate potential shortages.

The process of disinflation is shown in table 8. As one can see, during 1987–93, wholesale prices fell more rapidly than consumer prices. The reason is that the budget correction meant the withdrawal of various subsidies that enter the consumer price index (CPI) but not the producer price index (PPI). The most striking point, though, is the discrepancy between PPI inflation and exchange rate depreciation brought out in figure 11. The government systematically used *under*depreciation or de-

Figure 11. Mexican Producer Prices and the Exchange Rate, 1988–94

Index, 1988:1 = 100
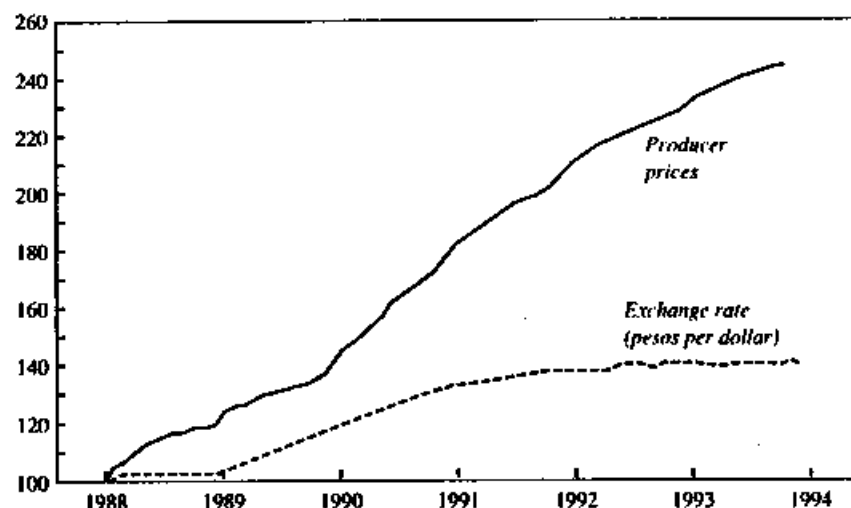
Source: Authors' calculations based on data from Banco de México, *Indicadores Económicos*, various issues.

parture from a purchasing power parity exchange rate rule to foster disinflation.

Consider what happens in an economy with considerable inflation inertia when an exchange rate–based stabilization is put in place. Starting with high inflation, assume the government reduces the rate of currency depreciation to zero. Although the new long-run equilibrium has zero inflation and the original real exchange rate, there are disruptive transitional effects.

The immediate effect of fixing the exchange rate is to cut the nominal interest rate and hence the real interest rate, so that demand increases. The inertia in prices plus the fixed nominal exchange rate generates an appreciation of the real exchange rate. As the appreciation continues, the original increase in demand erodes. In addition, the real interest rate increases, and, in the early phases of the program, the current account moves into deficit. The economy returns to full equilibrium, with reduced inflation, only after deflation has restored the initial level of competitiveness.

The model is oversimplified in a number of ways. First, there are no lags in the adjustment of demand and the current account to changes in

the real exchange rate. Second, the adjustment to the real exchange rate assumes an immediate substitution effect, contrary to the Diaz-Alejandro effect.[12] If during the first stages of the disinflation program the real appreciation is expansionary, this will further increase the overvaluation of the exchange rate, increasing the recession necessary to restore the original real exchange rate. Third, the monetary mechanism operates entirely through interest rates and there is no role for credit and confidence. Again, given the importance of the credit constraints that firms and consumers face, the remonetization of the economy that occurs when the nominal interest rate drops increases the amount of credit given by the banking sector. If liquidity constraints are important, one can observe that an increase in the supply of credit does not cause a decline in the real interest rate. Finally, wealth effects and asset processes play no role.

Even though these aspects of adjustment are absent, this highly stylized model captures the pattern of the adjustment process. It highlights, in particular, that, on the way to disinflation, high unemployment and large deficits make continuing the program increasingly difficult; if confidence breaks down, so does the financing of external balances. In this case, interest rates will soar, output will fall, and ultimately the program will be abandoned.

In Mexico, the exchange rate–based stabilization was complemented by incomes policy, and the disinflation from triple-digit levels was achieved largely through containment of wage increases. A simple model of this process follows. Price inflation comprises wage inflation and depreciation:[13]

$$(5) \qquad p = aw + (1-a)e,$$

where p equals price inflation, w equals wage inflation, e equals nominal exchange rate depreciation, and a equals the proportion of wages in the total cost of production. Wage inflation is based on past inflation and the output relative to potential output:

$$(6) \qquad w = p_{-1} + cy,$$

12. Diaz-Alejandro (1965) asserts that the income effect of a devaluation demands the substitution effect in the short run. If this is the case, an appreciation will be expansionary in the short run.

13. For a detailed exposition of the process, see Dornbusch (1993a). See Végh (1992) and Dornbusch and Fischer (1993) for references to the experience with exchange rate–based stabilization.

where y equals deviations of output from the natural level and c is a parameter that measures the sensitivity of wages to cyclical conditions. Combining equations 5 and 6 yields an inflation rate that shows full persistence, so that inflation today equals inflation yesterday, except as there is unemployment or real appreciation:

$$(7) \qquad p = p_{-1} + acy + (1-a)(e - p_{-1}).$$

In Mexico, the *pacto* contributed in two ways to the disinflation process. First, the explicit price agreements helped cope with the persistence issue: business, labor, and the government agreed to break the backward-looking indexation pattern. They agreed on limits consistent with an immediate disinflation. Second, the government helped in a major way by allowing real appreciation of the currency. Third, slow growth dampened any possibility of labor shortages.

We complete the model by looking at the determinants of real demand. Here, the level of the real exchange rate and real interest rates are the prime determinants. Combining these demand determinants with inflation in equation 7 and assuming uncovered interest rate parity yield an inflation process that emphasizes both the current difference between inflation and depreciation and the level of the real exchange rate.
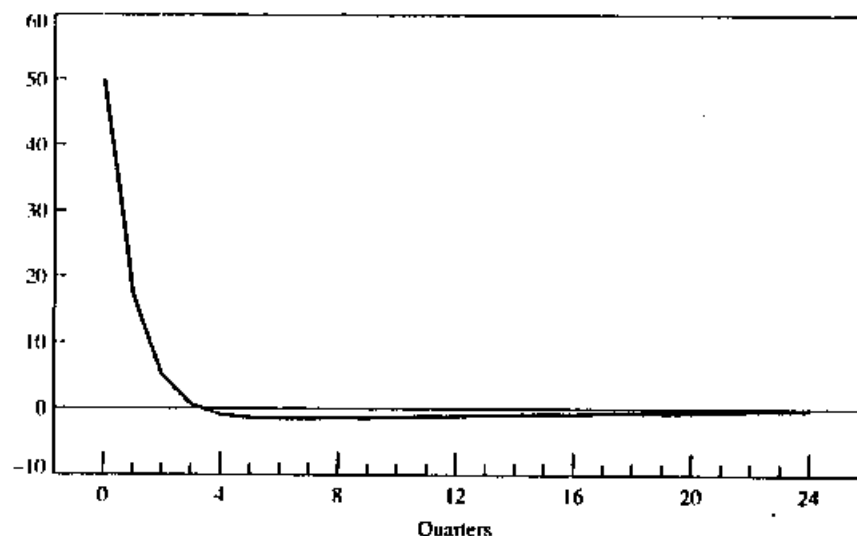
But does this explain what happened in Mexico? We investigate to what extent the hypothesis based on price and wage setting is able to explain the extent of the appreciation that has been observed during the *pacto*. For this, we estimate the following equation for the 1984:2–1993:2 period using quarterly data. The equation comes from equation 7, substituting the determinants of y for y and assuming uncovered interest rate parity:

$$(8) \qquad p - p_{-1} = c + d(e - p_{-1}) + f(e - p_{-1})D + g(E - P)_{-1}.$$

where the dummy variable D takes the value of one from 1984:2 to 1987:4, E equals the nominal exchange rate (in logs), and P equals the price level (in logs). The dummy accounts for the introduction of incomes policy, which interrupts the inertia of inflation. The estimated coefficients with their t-statistics in parentheses are c equals -0.59 (-1.56), d equals 0.66 (7.4), f equals -0.38 (-3.03), and g equals 0.00046 (1.92).[14] The estimates highlight the substantial degree of persistence that is present in the inflation process. They also capture the im-

14. The equation also controls for the impact of foreign interest rates and inflation on demand and hence inflation.

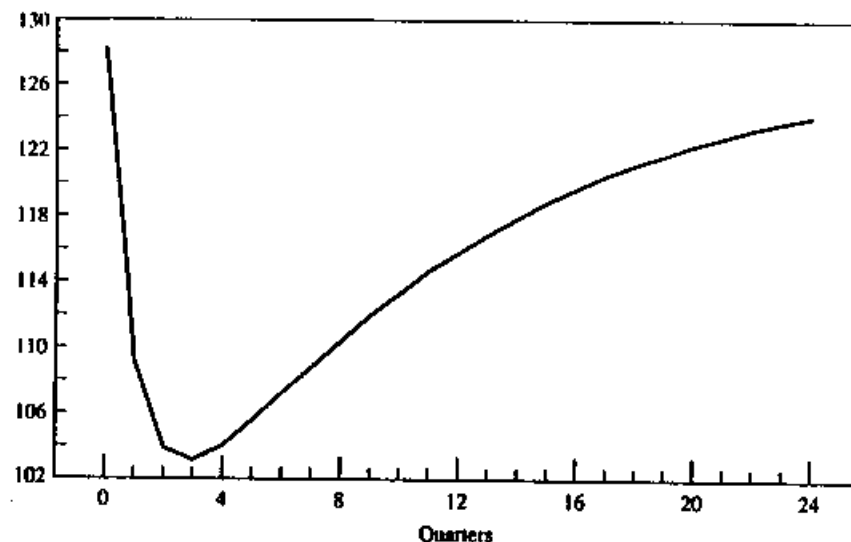**Figure 12. Time Path of the Inflation Rate**

Percent

Quarters

Figure 13. Time Path of the Real Exchange Rate

Index, December 1980 = 100

Quarters

portant reduction in inertia that was achieved during the exchange rate–based stabilization through wage and price agreements. The coefficient f is negative and significant.

Using the estimated parameters, we now simulate the effect on the inflation rate and the real exchange rate of fixing the nominal exchange rate when quarterly inflation is running at about 50 percent (which was the quarterly rate in December 1987). Figures 12 and 13 show the time path of the inflation rate and the real exchange rate. Fixing the nominal exchange rate accomplishes a very substantial, rapid disinflation. Within a year, inflation evaporates. But the implications for the real exchange rate are just as striking. The large immediate real appreciation that is the price of fixing the nominal exchange rate is undone only gradually—over years (figure 13). Both aspects of our model are clearly present in the Mexican experience.

If the overvaluation hypothesis is correct, the return to a competitive real exchange rate will be a drawn-out process, in which slow growth and high unemployment are the chief vehicles of change. The alternative to a prolonged recession is a real depreciation—an issue to which we return below.

More Arguments

As we have noted, supporters of the equilibrium hypothesis hold that the external imbalance is not a problem. (Appendix B also discusses the equilibrium model in some detail.) They believe that it simply reflects the forces of reform and restructuring under way. A large deficit means that investment is running high and that capital goods are being imported to build the export base of tomorrow.

Their argument must be viewed with a dose of skepticism. The composition of imports shows that capital goods imports are not a leading item. In 1992, capital goods accounted for only 19 percent of total imports, intermediate goods for 69 percent, and consumer goods for close to 13 percent. The fastest growth item was consumption goods, which especially benefited from the trade liberalization. Table 9 shows Mexico's structure of imports.

Also, while it is true that investment has increased substantially in the past few years, as shown in table 10, much of that investment has been in residential and business structures not in plant and equipment. The overvaluation hypothesis explains investment as the result of the sharp drop in real interest rates that accompanies an exchange rate–based

Table 9. Structure of Imports in Mexico, 1986 and 1992

Percent of total

Type of goods	1986	1992
Consumer	5.0	12.5
Intermediate	77.3	68.9
Capital	17.7	18.6

Source: Banco de México (1993, p. 310).

(temporarily credible) program. As a result of lower real interest rates and reduced inflation, credit markets reopen. The trade reform and overvaluation help reduce the cost of imported durables, and speculative elements surrounding a possible policy reversal reinforce the urge to buy.[15]

Another reason to disfavor the equilibrium model is that it has a hard time explaining the falls in output and employment that are gradually emerging. By contrast, the overvaluation model would predict that, beyond the initial expansion phase (the result of greater credit, higher real interest rates, and possibly rising real wages), overvaluation starts slowing demand and output. Carlos Diaz-Alejandro notes that real depreciation first depresses demand via income effects before stimulating demand via substitution effects, which come to dominate.[16] In the case of Mexico, the argument applies in reverse: real appreciation first creates demand; then the drag of adverse substitution effects takes over.

Another way to test the usefulness of the two theoretical approaches is to look at the nominal interest rates on securities of different denominations. Why not look at dollar and peso securities issued by the Mexican government and recover the expectations of depreciation implicit in the yield differential? If the exchange rate is overvalued, depreciation is a possibility and the yield differential will reflect the extent of the misalignment.

We therefore look at financial data for evidence of whether the financial markets perceive the real appreciation or the increasing trade deficit as an equilibrium phenomenon (in which case they would not react to changes in the trade balance or the real exchange rate because that

15. Guillermo Calvo, in particular, has emphasized the speculative element. See, too, Dornbusch (1986).

16. Diaz-Alejandro (1965).

Table 10. Growth and Investment in Mexico, 1989–93

Percent per year

Year	GDP per capita	Investment (percent of GDP)
1989	1.3	17.3
1990	2.4	18.7
1991	1.6	19.5
1992	0.7	21.7
1993	−1.2	20.7

Source: Authors' calculations based on unpublished data from INEGI and *International Financial Statistics*.

model does not predict such an adjustment). In table 11, we regress the interest rate differential (adjusted by the announced depreciation) for monthly data for the April 1988–June 1993 period on a trend (to account for improving program credibility as time passes), a dummy (to account for the announcement of the Brady plan in June 1989), the average maturity of public debt with one lag measured in days (to account for the fact that with a maturity the probability of a speculative attack diminishes)[17] and the real exchange rate or the trade balance (in billions of dollars) with one lag. We use three interest rate differentials: the difference between the one-month *cete* (denominated in pesos) and the one-month certificate of deposit (CD) in the United States; the difference between the *cete* and the *pagafe*, which is a dollar-indexed instrument issued by the Mexican government; and the difference between the *pagafe* and the U.S. CD.

The real exchange rate is consistently insignificant in the regressions (not shown), but the expected devaluation measured by the *cete*-CD differential depends positively on the trade deficit. An increase of the (monthly) trade deficit of $1 billion increases the interest rate differential by 2.5 percentage points. The reason why the *cete-pagafe* regression turns out poorly may be that, when the expected devaluation increases, the government issues more *pagafes* and, given that it faces a downward demand for *pagafes*, the price goes down so its yield goes up. This regression suggests that the government has been managing the composition of its domestic debt in order to respond to cost differentials.

17. Giavazzi and Pagano (1989).

Table 11. Explaining Interest Rate Differentials[a]

Dependent variable	Constant	Brady plan dummy	Trend[b]	Average maturity of public debt (lagged)[c]	Trade balance (lagged)	Lagged dependent variable	Twice-lagged dependent variable
Cete-U.S. CD differential	0.012 (4.4)	0.0027 (1.9)	−0.0113 (−1.9)	−0.0016 (−2.3)	−0.0021 (−1.6)	0.64 (4.6)	−0.14 (−1.8)
Cete pagafe differential	0.005 (2.8)	0.0003 (3.0)	0.0035 (0.6)	0.0006 (1.1)	0.0009 (−0.6)	0.57 (11.0)	. . .
Pagafe-U.S. CD differential	0.006 (4.8)	0.0029 (3.5)	−0.0093 (−2.7)	−0.0004 (−1.0)	−0.0009 (−1.2)	1.02 (10.0)	0.56 (6.0)

Sources: Authors' regressions based on data from Banco de México, *Indicadores Económicos*, various issues; and unpublished data from the Finance Ministry.

a. The dependent variables are the interest rate differential between the *cete* (a one-month peso-denominated government bond) and a one-month U.S. certificate of deposit (CD); a one-month *cete* and a *pagafe* (a dollar-indexed instrument issued by the Mexican government; and a *pagafe* and a one-month U.S. CD. Regressions use monthly data from April 1988 to June 1993. Numbers in parentheses are *t*-statistics

b. Coefficient multiplied by 100.

c. Measured in days; coefficient multiplied by 100.

Lessons of the Mexican Reforms

We have explored two hypotheses of the macroeconomic developments in Mexico. One asserts that equilibrium prices of assets and dollar wages have risen as a result of various reform measures. This equilibrium view acknowledges no problems in the Mexican economy and hence offers no policy remedies. According to this view, NAFTA will reinforce confidence and help fortify the resolution of lenders. The new independent central bank will institutionalize financial stability and strengthen reform with beneficial effects on access to capital markets.

The disequilibrium view, by contrast, accepts the extraordinary reform effort and the prospective benefits of liberalization and NAFTA. But it recognizes, we believe rightly, that overvaluation is one of the gravest policy errors along the way. Overvaluation stops growth and, more often than not, ends in a speculative siege on the exchange rate and ultimately currency realignment. That sequence occurred in Europe a few years ago and has been repeated numerous times in Latin America. Chile, as mentioned earlier, overused the exchange rate in the 1970s and its economic program crashed; in the 1980s, Chile gave inflation control an important but not exclusive role, and as a result of the macroeconomic strategy growth in the latter period was highly satisfactory. In-

deed, after a host of exchange rate–based stabilizations the lessons are clear."[18]

—First, a pegged exchange rate is immensely helpful at the outset of a stabilization effort. It helps rally expectations, and incomes policy can be organized around it. Moreover, a fixed rate can be counted on to immediately improve inflation performance.

—Second, almost without exception, a fixed rate will not imply *zero* inflation. Inflation will fall off, perhaps sharply, but it will not end altogether. Accordingly, there is a need to reassess very quickly when to abandon the fixed rate and settle for some inflation, though at a far more moderate rate than before the stabilization.

—Third, much of the disinflation must happen through the initial incomes policy package. Fixing *only* the exchange rate risks overvaluation.

—Fourth, a crawling peg that offsets the prevailing inflation with currency depreciation avoids an accumulation of real appreciation that would *ultimately* risk the success of stabilization. Yet, as useful as exchange rate pegging is at the outset, it is equally important to eliminate it as soon as possible.

—Fifth, incomes policy is helpful at the outset, but private sector competition must soon take over the work of keeping prices down.

How does the Mexican experience compare? Incomes policy was helpful initially but then got in the way. The *pacto* did help bring down 200 percent inflation very fast. It helped reduce indexation—explicit or implicit—and diminish inflation persistence, thus making the initial sharp disinflation possible. But the exchange rate soon became overused and the *pacto* process did not make further strides toward low inflation, except at the expense of competitiveness. In August 1991, an observer called for the *pacto* to move to a permanently fixed rate on the dollar:

Pacto-fatigue is a fact; it is hard to believe that the current policies can go on for another year or two. It is time to take the government out of wage-price setting and bring the market in. That is understood. The only issue is how to do it and

18. See Calvo and Végh (1992), Dornbusch and Simonsen (1987), Dornbusch (1986, 1993a, 1993b, and 1994), Dornbusch and Fischer (1993), Edwards (1993a, 1993b), Kiguel and Liviatan (1992), and further references cited in these publications.

when.,The answer here is one more *pacto* to safely land the economy, then declare victory and get out. When? The sooner the better.[19]

In February 1992 (before the European lessons of that fall) the story was still the same:

. . . no problem in anchoring the peso to the dollar, preferably without any margins so as to gain the maximum benefit of monetary integration and the maximum reduction in Mexican interest rates. But even as the peso is tied to the dollar, inflation should be pushed down to American levels rapidly. There is no interest in allowing a Spanish-style cumulative overvaluation which ultimately is hard to undo and which is bound to slow growth.[20]

Because of the complications caused by the persistent use of incomes policy, by early 1993 a rollback in the exchange rate was judged necessary.[21] Of the options for doing so—recession; maxidevaluation; and increasing the pace of the crawl—the last was favored. Specifically,

The strategy of a faster crawl would accept an increase of inflation to 15–18 percent as the price for gaining competitiveness and the price for avoiding a recurrence of the exchange rate and social crises of the past election years. The pace of the crawl would be stepped up immediately to 22 percent per year, declining toward 17 percent over 18 months. . . . The art of inflation fighting is to know when to stop. A wise US senator when asked for counsel on what to do about the unending Vietnam War advised: declare victory and get out. Mexico's authorities should reassess their priorities and shift to a model where growth comes first, but inflation is firmly contained below a 20 percent barrier. That is possible, as Chile's example of the past decade shows quite convincingly.[22]

To those who accepted that Mexico had a problem, waiting for the election year to end with still greater overvaluation was clearly a big mistake.

Learning from unsuccessful exchange rate–based stabilization in the 1970s, Chilean policymakers of the 1980s never made inflation the absolute and exclusive target; overvaluation never happened and growth was strong.[23] That lesson should have been understood in Mexico two or three years ago. Regrettably, however, Mexican policymakers opted to replicate the mistakes of the 1970s Chilean strategy rather than the positive lessons of the 1980s policy.

19. Dornbusch (1991, p. 6).
20. Dornbusch (1992).
21. See Dornbusch (1993a).
22. Dornbusch (1993a, p. 379).
23. See Dornbusch and Edwards (1994).

What Now for Mexico?

What are the issues and options now facing Mexico? Since the start of 1994, several speculative attacks on the peso have occurred; at least $10 billion in reserves were lost; a swap line with the United States was requested and granted; the stock market declined more than 30 percent; and short-term interest rates increased by more than 700 basis points. So, while there may not be any deep, fundamental problem, there is no arguing with the fact that the market has doubts about the economy.

How Much Action Is Needed?

At best, the current turbulence merely reflects ordinary election year uncertainties, and the basic economic fundamentals are sound. In this case, the very best strategy, for the ruling party and the country alike, is to maintain the exchange rate strategy (the band agreed in the last *pacto*), pursue high interest rates and borrow to cover the current account deficit, ride out the crisis and the elections, and prove the market wrong. Once the election is won and the continuity of policies is established (presuming the ruling party is reelected), the economic model and the strategy would be vindicated. Financial instability, devaluation, and inflation would be avoided, and credibility would increase. France in 1993–94—with its refusal to give up on the franc's fixed parity with the deutsche mark in the face of massive adverse speculation—provides an example of this sit-tight approach.

A closely related interpretation of Mexico's current position is that the current level of the exchange rate is probably wrong and that, for growth reasons, something needs to be done—but not in the midst of an election year. Politically, the loss of face inherent in a devaluation is troublesome, since so much rhetoric goes into defending the fixed rate strategy. It is simply easier to allow high interest rates to prevail (as France did in 1993) until a more convenient (postelection) time comes to devalue.

Some others agree with the need for action.[24] Observers in this camp

24. In Mexico, this view has been entertained in some form or another during the past two or three years and has all the appearances of Akerlof's (1989) theory of procrastination. As Akerlof emphasizes, procrastinement of the inevitable devaluation (neither the benefits of delay is irrational. In this instance, the accumulated costs of imbalances in the form of hysteresis effects of low growth and increased trade penetration make it more important to act early.

believe that relying on the capital market's interpretation of the exchange rate can be risky, however, since the market may suddenly lose faith, and a country that is overextended in its borrowing may face imminent financial crisis. Given this risk, they favor a cautious policy that starts with competitiveness.

How valid are these views suggesting that only minor tinkering may be needed in Mexico? Much depends on the size of the overvaluation. For example, a minor overvaluation of 5 or 10 percent would be hard to identify and may disappear in response to positive reform or a more favorable external environment. But a large overvaluation will not go away on its own accord. Indeed, its costs will rise steeply: first, growth will slow; then, interest rates will be raised to defend the currency; then the combination of low growth and high *real* interest rates will cause firms' balance sheets to deteriorate, and hence those of banks. Then active speculation starts.

This process has already begun in Mexico, suggesting an overvaluation that needs addressing. Growth is sluggish, and bad debts are accumulating. The realized real interest rates on bank loans, which are shown in figure 14, have been averaging close to 15 percent over the past five years. The growth in nonperforming assets is therefore no surprise, a trend that is reinforced by the downturn in economywide growth. In the Mexican banking system, nonperforming loans have already increased from 2.0 percent of total loans in 1989 to 7.1 percent in 1993. The election year growth in the macroeconomy may alleviate the problem for a while, but ongoing overvaluation will not go away, and 1994 is at best a reprieve.

Mexico's vulnerability to the problems inherent in an overvaluation is accentuated by the uncertainty surrounding Mexico's political future. Mexico's rapid embrace of greater political openness has shattered the ruling party's historical coherence, so that the old corporatism becomes unmanageable. Moreover, too much adjustment has been left for the postelection government. The rest of the world understands what the changes in Mexican politics mean—as the recent volatility in Mexican financial markets makes clear.

Unless the exchange rate is devalued, either recession will be needed to eliminate the external problem and reduce inflation or expansion will be needed to alleviate the lack of growth. Neither option is realistic. It is politically difficult to squeeze inflation through recession, and fiscal stimulus, although more tempting, is not a feasible long-run solution in

Figure 14. Average Real Lending Rate, 1990–93[a]
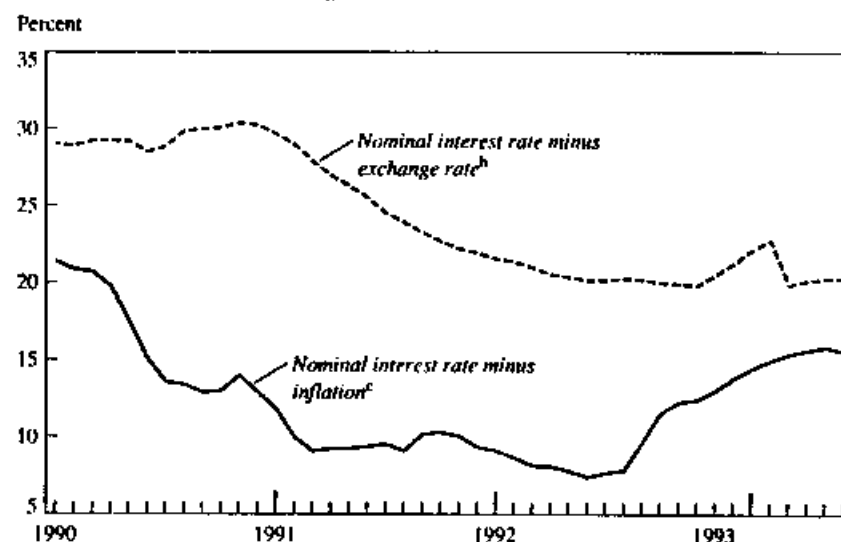
Percent

Source: Authors' calculations based on Banco de México, *Indicadores Económicos*, various issues.
a. The nominal interest rate is based on the CPP, an average interest rate in Mexico similar to the prime rate, plus 5 percent. The series are plotted as 12-month moving averages.
b. Real interest rate is calculated using the nominal rate described in note a minus the depreciation of the exchange rate (pesos per dollar).
c. Real interest rate is calculated using the nominal rate described in note a minus consumer price inflation.

Mexico. We believe instead that a significant departure from the present exchange rate is needed.

Exchange Rate Strategies

As we have argued throughout this paper, only some of the 40 percent real appreciation (measured in relative wholesale prices) since 1988 can be credited to the sharply improved economic conditions in Mexico. The rest is suspect. In fact, the recent 6 percent realignment inside the exchange rate band passed with little chaos or fear, suggesting there is room for greater devaluation, but it must occur soon. There were several days following the assassination of candidate Colosio during which the nation rallied behind the official party and that could have provided the cover for a realignment. But it is doubtful how much of this momentum remains.

What then are plausible exchange rate strategies given the present predicament? To answer that question requires asking two other supporting questions. First, is there further *pacto* support for a change in

Table 12. Policy Issues and Options

	Acute problem	No acute problem
Pacto support	Devalue	Crawl
No *pacto* support	Float	Get support

the exchange rate policy?[25] Second, how acute is the current problem? Table 12 presents a matrix of options under four different scenarios.

We first look at the two cases in which *pacto* support exists. We believe such support can be mobilized, and with it Mexico could manage "one last devaluation." If overvaluation is an acute problem and *pacto* support is possible, a 20 percent devaluation is the preferred strategy in our view. Using the trade equations shown in appendix C, a 20 percent devaluation would reduce the trade deficit to approximately zero. This would stimulate growth and reduce the precarious financial dependence.

If overvaluation is not acute but *pacto* support exists, a crawling depreciation is a good solution. This (inflationary) strategy takes time, but it does reduce some of the pressure on the exchange rate and has lower political costs. It is decidedly not an emergency procedure.

Even if we are wrong about the potential *pacto* support, however, a realignment will be essential. If the currency is not devalued, growth will not keep pace with the growth of the labor force; the divisions in Mexican society will widen; and national stability will be threatened. But what is the best exchange rate strategy if union support is lacking? In this case, a devaluation could quickly translate into political agitation for wage increases. Inflation might shoot up, and expectations of a second devaluation would rise with it. Interest rates would stay high in real terms; external capital would be reluctant to come to or stay in Mexico; and growth would suffer. It is easy to recall experiences of this kind, but that does not make such outcomes inevitable. For example, recent major devaluations in Finland, Sweden, Italy, Spain, and the United Kingdom did not lead to inflation—in fact, it has come down, as have interest rates. Devaluation was a boon to these countries. If the overvaluation is not critical, the best strategy may be to "get support" from the unions before proceeding.

25. The *pacto* negotiations normally seek exchange rate and wage targets. However, neither of these measures prevents *all* real depreciation.

Without *pacto* support and with a pressing overvaluation problem, the answer is to use the current crisis to discard the *pacto* process and move to a floating rate. The peso would be allowed (by lower nominal interest rates) to fall about 20 percent. Monetary and fiscal policies would face the hard challenge of allowing the real depreciation and preventing a resurgence of major inflation. There is no assurance that this strategy *must* work; but it is the only option if realignment is to be sought outside a *pacto* accord. Doing nothing in the face of an increasingly tenuous currency situation means that these problems will be faced at an even less convenient time, with more surprise and less control.

To conclude, President Carlos Salinas de Gortari is rightly acknowledged for the sweeping reforms in Mexico, but he left two loose ends. The first was postponing real democracy in favor of another six years of technocratic rule. The other was overvaluing the currency. For Salinas, inflation was the primary issue, just as it had been in Chile in the late 1970s. In his own words,

We must bring inflation down to a one-digit level this year. Some say, why don't you relax your inflation goals a bit so we can have better growth rates? And I respond: There is no trade-off between inflation and growth.[26]

The evidence of the past few years contradicts his statement. Disinflation with overvaluation is a temporary device that ultimately causes great damage. In Mexico, that sad ending lies ahead unless the currency is devalued.

APPENDIX A

The Pacto *Agreements, 1987–93*[27]

December 1987–February 1988

Tax measures: Elimination of subsidies, except for agriculture. Elimination of the accelerated depreciation incentive and an additional import tax. Adjustment in public sector prices. Reduction in programmable spending by 1.5 percent of gross domestic product. Exchange rate policy to support deflation without sacrificing competitiveness.

26. Geri Smith, "Salinas Faces His Toughest Year Yet," *Business Week*, February 1, 1993, p. 41.

27. Aspe (1993), updated with information from Banco de México and Presidencia de la República (1994).