7
What Happened to Mexico in 1994–95?

Timothy J. Kehoe

On December 20, 1994 the Mexican government announced that it had widened the band in which it allowed the Mexican peso to trade against the U.S. dollar. The value of the peso quickly fell to the floor of this band, devaluing by 15 percent. It remained there for two days, until December 22, when the government announced that it would let the value of the peso float freely. The peso then devalued even further (see Figure 7-2), touching off a financial crisis not only in Mexico but throughout the world.

This chapter identifies the causes of the 1994–95 financial crisis in Mexico and speculates about Mexico’s economic prospects for the near future. The conclusion is that the financial crisis was not the fault of the apertura policy (see the Introduction). Rather, it was the result of a combination of an unprecedented sequence of shocks to the Mexican political and economic system together with a sequence of risky financial policies followed by the government in 1994. Although 1995 is going to be a harsh year for Mexico and its people, long-term prospects remain bright.

As Chapter 1 stresses, the predictions made by an applied general equilibrium (AGE) model are conditional predictions, and the 1994–95 financial crisis is a significant exogenous shock. That is, it is an event that the static AGE models that we have discussed are incapable of predicting, yet an event whose effects we need to take into account when evaluating the results of the models. One approach to taking the financial crisis into account would be to exogenously impose the sharp change in
the terms of trade between Mexico and its trading partners that occurred as a result of the crisis and to work out the resulting changes in relative prices, production levels, and trade patterns. Even the results of the models without this exogenous shock are still relevant, however. They identify the position that Mexico will return to as it recovers from the financial crisis. The faster the Mexican economy recovers, the more relevant these results are.

THE MAGNITUDE OF CAPITAL FLOWS

A major impact of economic integration in North America will be on capital flows from relatively capital-rich Canada and the United States to relatively capital-poor Mexico. As we have seen, it is by exogenously imposing substantial capital flows of this sort that static models such as the Brown-Beardorff-Stern model and the Sobarzo model are able to predict large welfare gains for Mexico.

In this section I make a crude estimate of the magnitude of potential capital flows in North America. Before starting, however, it is worth stressing three points about capital flows. First, differences in capital-labor ratios between Mexico and its northern neighbors cannot be the sole explanation for the large differences in output per worker between these countries. (See Lucas 1990 for a discussion and calculations similar to those presented here.) Consequently, simply equalizing capital-labor ratios cannot be the way to eliminate income differences. Second, when modeling the savings and investment decisions that determine capital flows, we need to take into account the significant differences in the age profiles of population between Mexico and its neighbors. Third, the rate at which a country like Mexico can absorb foreign capital flows is a crucial determinant of its macroeconomic stability.

To illustrate the point that differences in capital-labor ratios cannot explain the differences in output per worker observed in Mexico and in Canada and the United States, some simple calculations using aggregate production functions follow. Suppose that each economy has the same production function

\[ Y_t = N_t^a K_t^\alpha \]

where \( Y_t \) is gross domestic product, and \( K_t \) is capital per worker \( K_t/N_t \), this becomes \( y_t \),

where \( \delta \) is the depreciation rate.

In 1990 real GDP per capita in Mexico was \$20,140, which is roughly 0.3 times that in the United States. Then the

\[ \frac{k_{na}}{k_{mex}} = 13.7 \]

Suppose that \( \delta = 0.01 \) and capital per worker is 14.6 times that in Canada.

\[ r_{mex} = (r_{na} + \delta) \left( \frac{k}{k_n} \right) \]

From 1988 through 1992, the Fund's International Financial Statistics shows that the United States had a 9.2 percent average inflation rate, while the United States inflation rate was 0 percent. Summers et al. (1995)
where \( Y_j \) is gross domestic product (GDP), \( N_j \) is the size of the workforce, and \( K_j \) is capital. In per capita terms, where \( y_j = Y_j/N_j \) and \( k_j = K_j/N_j \), this becomes \( y_j = \gamma k_j^\alpha \). The net return of capital is

\[
r_j = \alpha \gamma k_j^{\alpha - 1} - \delta
\]

where \( \delta \) is the depreciation rate. In what follows \( j \) takes on two values: \( m \) for Mexico and \( a \) for an aggregate Canada-United States.

In 1990 real GDP per worker in Mexico, according to Summers et al. (1995), was \$20,140, while it averaged \$44,129 in Canada and the United States. The Mexican number has been converted to dollars using a purchasing power parity comparison, rather than the current exchange rate, as explained by Summers and Heston (1991). Suppose that \( \alpha = 0.3 \), which is roughly the capital share of income in Canada and the United States. Then to explain this difference in output per worker, we need capital per worker to be larger than that in Mexico by a factor of 13.7:

\[
\frac{k_{na}}{k_{mex}} = \left( \frac{y_{na}}{y_{mex}} \right)^{1/\alpha} = \left( \frac{44,129}{20,140} \right)^{1/0.3} = 13.7.
\]

Suppose that \( \delta = 0.08 \) and \( r_{na} = 0.05 \), which are roughly the numbers obtained from calibration. Then the net interest rate in Mexico should be 14.6 times that in Canada and the United States,

\[
r_{mex} = (r_{na} + \delta) \left( \frac{k_{na}}{k_{mex}} \right)^{1-\alpha} - \delta = 0.13(13.7)^{0.7} - 0.08 = 0.73
\]

From 1988 through 1993, according to the International Monetary Fund’s International Financial Statistics, the real cost of funds in Mexico averaged 9.2 percent per year, while the prime rate discounted for inflation in the United States was 4.8 percent per year. Furthermore, what information we have on capital per worker in Mexico and in Canada and the United States indicates that it does not differ by a factor of 13.7: Summers et al. (1995) report the nonresidential capital stock per worker
in Mexico in 1990 was $15,272, while it averaged $47,858 in Canada and the United States.

There are at least two objections that can be raised to the above calculations. First, a comparison based on per capita GDP in U.S. dollars using the exchange rate to convert pesos into dollars would suggest that \( y_{max} \) is larger than what we calculated in Chapter 3. Second, using Mexican GDP data would yield a larger value for \( \alpha \) of about 0.7. (See the discussion on page 39.) These two objections work in opposite directions, however, and our calculations can be defended as a sensible middle ground: Income comparisons based on exchange rate conversions neglect purchasing power parity differentials; per capita comparisons rather than per worker comparisons neglect demographic differences; much of what is classified as net business income in Mexico is actually returns to labor; and so on.

Moreover, that differences in capital per worker cannot be the sole explanation of differences in output per worker across countries is a more general point. It is supported both by historical evidence, such as that of Clark (1987), and by even more extreme examples of differences in output per worker. According to Summers et al. (1995), real GDP per worker in Haiti in 1989, for example, was 5.4 percent of that in the United States. The same sort of calculations as those above would suggest that interest rates in Haiti should be over 11,700 percent per year if differences in the capital-labor ratio were the sole explanation of the differences in output per worker. Furthermore, historical evidence does not indicate that Mexico has always been starved for funds for investment. The problem has often been that investments abroad, particularly in the United States, have been more attractive. Between 1977 and 1982, for example, $17.8 billion of private investment flowed into Mexico, while $18.7 billion flowed out (Garcia Alba and Serra-Puche 1985, p. 45).

Let us accept the above argument that the production functions in Mexico and Canada/United States are not the same and use the observations on output per worker and on real interest rates in the two countries to calibrate different values of the constant term \( y_j \) that is, different levels of total factor productivity in the two regions:

\[
y_j = y_j^{0.3}
\]

Plugging in \( y_{max} \), capital per worker 871.7. Plugging in \( y_{max} \), obtain \( k_{max} = 103, \) obtain for capital Canada/United States. This is only to be narrower measure that includes land, roads, schools, an estimate of the rate in Mexico, 2.94, Aten-Nuxoll data.

Our rough estimate of how much of the total factor productivity in Mexico is due to capital per worker is due to capital per worker. We could lower the relative productivity in Mexico would increase.

This would increase the total factor productivity. The remaining total factor productivity.

To estimate the total factor productivity, we use the extreme assumption that Canada and the United States have the same marginal products of capital in total factor produc
\( r_j = 0.3\gamma_j^{-0.7} - 0.08 \).

Plugging in \( y_{mex} = 20,140 \) and \( r_{mex} = 0.092 \), we obtain a value for capital per worker in Mexico of \( k_{mex} = 35.128 \) and a value of \( \gamma_{mex} = 871.7 \). Plugging in \( y_{na} = 44,129 \) and \( r_{na} = 0.048 \), on the other hand, we obtain \( k_{na} = 103,427 \) and \( \gamma_{na} = 1,381.4 \). Notice that the figures that we obtain for capital stock per worker are higher, for both Mexico and Canada/United States, than the Summers-Heston-Aten-Nuxoll figures. This is only to be expected, however, since they are dealing with a far narrower measure of the capital stock than we are. Our measure implicitly includes land, natural resources, housing, and public capital such as roads, schools, and the postal system. What is encouraging is that our estimate of the ratio of capital per worker in Canada/United States to that in Mexico, 2.94, is not very different from that in the Summers-Heston-Aten-Nuxoll data, 2.81.

Our rough estimates of \( k_j \) and \( \gamma_j \) allow us to estimate, in a crude way, how much of the gap in output per worker between the United States and Mexico is due to differences in levels of capital per worker and how much is due to differences in total factor productivity. If capital flows could lower the real interest rate in Mexico from 9.2 percent per year to 4.8 percent per year, we would estimate that the capital labor ratio in Mexico would increase by a factor of 1.5:

\[
\frac{k'_{mex}}{k_{mex}} = \left[ \frac{0.092 + \delta}{0.048 + \delta} \right]^{1/(1-\alpha)} = 1.5.
\]

This would increase Mexican output per worker to $22,859, which would close the gap with the Canada/United States level by about 11 percent. The remaining 89 percent of the difference is due to differences in total factor productivity.

To estimate the magnitude of capital flows that would occur following complete economic integration in North America, let us make some extreme assumptions. Suppose that all capital flows into Mexico come from Canada and the United States. Suppose too that capital flows equalize the marginal products of capital between the two regions. We also implicitly assume that capital flows are rapid enough that we can ignore changes in total factor productivity and the size of the labor force. Even more
importantly, we implicitly assume that the sectoral composition of production does not change so much as to invalidate the use of an aggregate production function.

The requirement that the total capital stock after capital flows be equal to its original value is

\[ N_{\text{mex}}' k'_{\text{mex}} + N_{\text{na}}' k'_{\text{na}} = N_{\text{mex}} k_{\text{mex}} + N_{\text{na}} k_{\text{na}}. \]

Here \( N_{\text{mex}} \) is the size of the Mexican work force in 1990, 27.98 million workers, and \( N_{\text{na}} \) is the size of the Canada/United States work force, 136.31 million workers. The requirement that the rates of return on capital be equalized between the two countries is

\[ r = \alpha_{\text{mex}} (k'_{\text{mex}})^{-\alpha} = \alpha_{\text{na}} (k'_{\text{na}})^{-\alpha}. \]

Solving these two equations for \( k'_{\text{mex}} \) and \( k'_{\text{na}} \), we obtain

\[ k'_{\text{mex}} = 51,641 \]

\[ k'_{\text{na}} = 100,328. \]

The interest rate falls from 9.2 percent per year in Mexico to 5.1 percent. The increase in the Mexican capital-labor ratio from $35,128 to $51,805 leads to an increase in average wages of 12 percent, from $14,098 to $15,840. Output per worker rises from $20,140 to $22,629.

Income per worker rises less, to $20,444, however, since the returns to imported capital are repatriated to the United States.

The impact of these capital flows on Canada and the United States is far smaller than it is in Mexico, as the relative sizes of the two regions would suggest. The decline in the Canada/United States capital-labor ratio from $103,427 to $100,004 leads to a decrease in average wages of 1 percent, from $30,890 to $30,580. Output per worker decreases from $44,129 to $43,686, although income per worker rises to $44,134 because of capital earnings from Mexico.

The implicit capital flows involved in these calculations are large: The capital stock in Mexico increases from $983 billion to $1,450 billion, an increase of $467 billion. Even using the more restrictive definition of capital stock employed here, we have calculated an increase.

A dynamic AG flows that would (NAFTA). With lower wages and labor costs in Mexico, capital will flow into Mexican sectors in lower relative wages and capital-labor ratios. The economies of the integrated production model would expand, and the capital stock would increase.

This analysis is based on an analysis of $200 to $500 billion. An estimated increase in income per worker for the United States.

Once again we see the growing attention in Mexico.

**THE 1994–95**

Over 1987-93 the U.S. dollar. To calculate the rise in the peso rose by 22 percent over the rate of inflation, lowering inflation to the value of the peso down.

Unfortunately...
capital stock employed by Summer et al. (1995), we would obtain a large capital movement. The same 47.5 percent increase in the capital stock as we have calculated above would result in a total movement of $203 billion, an increase from $427 billion to $630 billion.

A dynamic AGE model would be an ideal tool for analyzing the capital flows that would result from the North American Free Trade Agreement (NAFTA). With some sectoral disaggregation, such a model could account for differences in total factor productivity in Mexico and its neighbors that differ widely across sectors. Total factor productivity in some sectors in Mexico is similar to that in the United States; in others it is much lower (see, for example, Blomstrom and Wolff 1989). The calculations of the impact of capital flows reported above are based on aggregate production functions and ignore these differences. A disaggregated model would enable us to capture the various impacts that capital flows would have on different sectors, including changes in sectoral composition.

This analysis suggests that a relatively large movement of capital, say of $200 to $500 billion, could be expected to result from economic integration. An essential question is how rapidly the capital would flow. Once again we need a dynamic model to analyze this issue, one that pays careful attention to the impact of large capital flows on economic stability in Mexico.

THE 1994–95 CRISIS

Over 1987–93, the Mexican peso appreciated substantially against the U.S. dollar. Using consumer price indices from the two countries to calculate the real exchange rate as in Table 7-1, we see that the value of the peso rose by 46 percent compared to the dollar. The Mexican government over this period was letting the peso’s value decline at a slower rate than the different inflation rates as part of its commitment to lowering inflation. Yet the Banco de México had no trouble maintaining the value of the peso; in fact, it had to intervene to keep the value of the peso down. The Banco de México accumulated reserves every year from 1988 to 1993, with reserves increasing by $8.0 billion in 1993.

Unfortunately, the situation changed in 1994. Faced with political in-
Table 7-1. Real Appreciation of the Peso. 1987–94

<table>
<thead>
<tr>
<th></th>
<th>Peso/Dollar Exchange Rate&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Mexican CPI&lt;sup&gt;2&lt;/sup&gt;</th>
<th>U.S. CPI&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Peso/Dollar Real Exchange Rate&lt;sup&gt;4&lt;/sup&gt;</th>
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<tbody>
<tr>
<td>1987</td>
<td>2.210</td>
<td>100</td>
<td>100</td>
<td>100</td>
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<tr>
<td>1988</td>
<td>2.281</td>
<td>149</td>
<td>104</td>
<td>72</td>
</tr>
<tr>
<td>1989</td>
<td>2.641</td>
<td>180</td>
<td>109</td>
<td>73</td>
</tr>
<tr>
<td>1990</td>
<td>2.945</td>
<td>243</td>
<td>116</td>
<td>64</td>
</tr>
<tr>
<td>1991</td>
<td>3.071</td>
<td>273</td>
<td>119</td>
<td>51</td>
</tr>
<tr>
<td>1992</td>
<td>3.115</td>
<td>304</td>
<td>122</td>
<td>57</td>
</tr>
<tr>
<td>1993</td>
<td>3.106</td>
<td>329</td>
<td>126</td>
<td>54</td>
</tr>
<tr>
<td>1994&lt;sup&gt;5&lt;/sup&gt;</td>
<td>3.446</td>
<td>351</td>
<td>129</td>
<td>57</td>
</tr>
</tbody>
</table>

<sup>1</sup>End of year; (new) pesos per dollar.
<sup>2</sup>End of year; 1987 = 100; CPI = consumer price index.
<sup>3</sup>End of year; 1987 = 100; CPI = consumer price index.
<sup>4</sup>Real exchange rate = Exchange rate × U.S. CPI/Mexican CPI; 1987 = 100.
<sup>5</sup>December 19, 1994.


Stability, rising U.S. interest rates, upcoming elections, and falling foreign investment, the administration of President Carlos Salinas de Gortari made three decisions that later proved to be unwise. First, over the course of the year it allowed the Mexican peso only a small devaluation (a nominal 12 percent) against the U.S. dollar; and in maintaining the value of the peso, it lost most of Mexico's foreign reserves. Second, at the same time that Mexicans and foreigners were selling pesos for dollars, the Banco de México sterilized this outflow by reissuing the pesos that it received (see Figure 7-1). Third, as the Salinas administration refinanced Mexico's government debt during 1994, it allowed the debt to become mostly short-term and dollar-indexed.

On December 20, the Mexican government announced that it would widen the band in which it let the peso move against the dollar. On currency markets the peso immediately fell to the floor of this band, 3.97 pesos/dollar as opposed to 4.90 pesos/dollar. At this level, the government no longer supported the peso.

Figure 7-1. International Financial Statistics.

Figure 7-2.

The simple explanation was that the peso was overvalued during the period of 1987–1993; when it ran out of reserves, there was some validity to the idea that the peso was overvalued in 1994, but not by 20.4 percent in 1994.
peso/dollar as opposed to the level of 3.45 pesos/dollar. After two days at this level, the government announced that the Banco de México would no longer support the peso, and it fell even further, as illustrated in Figure 7-2.

The simple explanation of this collapse was that the peso had become overvalued during the period 1987-94, as shown in Table 7-1; the Banco de México spent most of its dollar reserves supporting the peso, and when it ran out of reserves the value of the peso plummeted. Although there is some validity to this story, it neglects two important facts. First, over the period 1987-93, the Banco de México was accumulating reserves. Second, the peso depreciated in real terms against the dollar by 6 percent from the end of 1993 until the onset of the crisis. If the peso was overvalued in 1994, it was even more overvalued in 1993; yet there was no crisis in 1993. Furthermore, Mexican non-oil exports increased by 20.4 percent in 1994.

What precipitated the crisis of December 1994 February 1995 was a
combination of three factors. First, foreign portfolio investment fell sharply, as pictured on page xxix, because of increased political uncertainty in Mexico and rising interest rates in the United States. Second, Mexican authorities did not react soon enough, either by letting the value of the peso fall or by contracting the money supply in reaction to declining foreign investment, which led to a fall in reserves. Third, in an effort to keep down the costs of debt service, Mexican authorities converted much of Mexico's public debt to short-term, dollar-indexed tesobonos from peso-denominated cetes.

With hindsight it is all too easy to identify these policies as mistakes. At the time they were made, however, they seemed to be rational responses to shocks that the Salinas administration perceived to be transitory. The desire of the government to maintain the value of the peso is particularly understandable. Starting in 1987, during the final year of the de la Madrid administration, representatives of government, business, and labor had met irregularly referred to as the Pacto. markups; labor represented Government representative policies, but the most important to use the exchange rate to combat inflation. Maintaining a steady rate over a period during which its Pacto partners had shown increasing real wages by raising the minimum wage, Mexican authorities even and/or institute a dual exchange rate, an unfavorable rate. It did, of course, government had imposed a dual exchange rate.

The distinction between is important for two reasons. First, the real value of peso-denominated debt. Second, the possibility of dollar-indexed exchange rates was seriously depending on the possible responses to a crisis and printing more money.

Some important dates have been added to the chart, including the beginning of February 1994, when investors were not willing to pay off the reclassification of peso-denominated debt. Specifically, investors felt that the Mexican government would unilaterally change the exchange rate and/or institute a dual exchange rate, which was an unfavorable rate. It did, of course, exacerbate the financial crisis.

The combination of these factors, first, foreign portfolio investment fell sharply, as pictured on page xxix, because of increased political uncertainty in Mexico and rising interest rates in the United States. Second, Mexican authorities did not react soon enough, either by letting the value of the peso fall or by contracting the money supply in reaction to declining foreign investment, which led to a fall in reserves. Third, in an effort to keep down the costs of debt service, Mexican authorities converted much of Mexico's public debt to short-term, dollar-indexed tesobonos from peso-denominated cetes.

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and labor had met irregularly to form a series of social pacts, generally referred to as the *Pacto*. Business representatives made concessions on markups; labor representatives made concessions on wage increases. Government representatives offered tax decreases and a number of other policies, but the most important government concession was a commitment to use the exchange rate as a nominal anchor in its program to stop inflation. Maintaining a series of policies that fixed the maximum devaluation over a period during 1987-93, the government gained credibility with its *Pacto* partners, with the Mexican people, and with foreign investors. Furthermore, the *Pacto* was successful in reducing inflation from 159.2 percent per year in 1987 to 1.1 percent per year in 1994 and increasing real wages by more than 20 percent over the same period.

When investors realized that the *Banco de México* did not have enough reserves to pay off the *tesobonos* becoming due at the end of January and beginning of February 1995, a bank run occurred in the sense that investors were not willing to purchase new *tesobonos*. (*Tesobonos* were dollar-indexed rather than dollar-denominated because they paid a quantity of pesos determined by the current exchange rate rather than dollars.) Specifically, investors feared a convertibility crisis where the Mexican government would unilaterally lengthen the maturity of the *tesobonos* and/or institute a dual exchange rate, converting *tesobonos* into pesos at an unfavorable rate. It did not take too long to recall that the Mexican government had imposed measures of this sort following the 1982 financial crisis.

The distinction between dollar-indexed debt and peso-denominated debt is important for two related reasons. First, a devaluation would reduce the real value of peso-denominated debt, but not that of dollar-indexed debt. Second, the possible responses of the Mexican government to a crisis involving dollar-indexed debt—suspension of payment and/or imposition of dual exchange rates—would affect different creditors discontinuously depending on the order in which their bonds became due, while the possible responses to a crisis involving peso-denominated debt—devaluation and printing more pesos—would affect different creditors continuously.

Some important dates during this period were: December 29, when Secretary of Finance Jaime Serra-Puche resigned; January 3, when President Ernesto Zedillo Ponce de León announced a new economic plan
after having been unable to reach consensus with business and labor leaders in time to do it the day before; January 11, when U.S. President Bill Clinton proposed a $40 billion loan guarantee program to the U.S. Congress; and January 31, when Clinton announced, after it had become clear that his early proposal was running into political problems in Congress, a package of loans and loan guarantees totaling close to $50 billion, put together with funds from the U.S. Exchange Stabilization Fund, the International Monetary Fund, the Bank for International Settlements, and some Latin American central banks. Finally, on March 9, 1995, after weeks of fruitless negotiations with business and labor, Zedillo announced an economic plan that did not have their official backing, bringing to an end the Pacto system begun in 1987.

The year 1994 was difficult for Mexico politically. There was an uprising in Chiapas in January; the presidential candidate of the ruling Institutional Revolutionary Party (Partido Revolucionario Institucional or PRI), Luis Donaldo Colosio, was assassinated in March; the Secretary of the Interior, Inge Carbajo, who had been responsible for conducting fair elections, announced his resignation in July, a month before the elections; the Secretary General of the PRI, Jose Francisco Ruiz Massieu, was assassinated in September; and there were threats of a new uprising in Chiapas in November.

Perhaps even more significantly, a presidential election was held in August, with the new President, Zedillo, who had replaced Colosio as the PRI candidate, taking office in December. This election was widely regarded as the most honest in Mexican history, and the victory by the PRI was considered as a mandate for the economic policies of the previous 10 years. Indeed, the party that finished second in the voting, the National Action Party (Partido Acción Nacional or PAN), explicitly endorsed these policies, and the party that did not, the populist Cardenista Party (Partido Revolucionario Demócrata or PRD), seemed to fade from sight as a serious political force.

Nevertheless, the change of government was, as it has been every six years in Mexico since 1928, a time of great uncertainty. At the end of each of the previous three administrations, there had been large devaluations. (The one at the end of the de la Madrid administration actually occurred in 1987 rather than 1988.) Mexicans and foreign investors feared another one.

The political uncertainty was achieved by allowing it to trade against the dollar, around that level until it reached $10.5 billion as an investment, so did the investment in Mexico alike. While the sale of devaluations and Reserve were at a rate that would have led to a transitory and that presidential election situation became an

Carrying out a devaluation November would have had been obtained, reserves in late December 20-21, the supporting the peso.

During 1994 the exchange rate was 2.8 pesos to the dollar, had allowed the peso to become very stable (Figure 7-3). Figure 7-4 shows the difference between the
The political uncertainty led to falling foreign investment. Following the Colosio assassination, there had been an 8 percent devaluation, achieved by allowing the peso to move to the limit of the band in which it could trade against the dollar. Together with the 4 percent slide previously planned, this resulted in a 12 percent devaluation through December 19. Nonetheless, the Banco de México’s foreign reserves fell from $29.2 billion in February to $17.3 billion in April. They stayed around that level until the Ruiz Massieh assassination and its aftermath when Mario Ruiz Massieh, brother of the murdered politician and the assistant attorney general assigned to investigate the assassination, resigned charging that a cover-up was taking place. Reserves fell further, reaching $10.5 billion on December 19.

While political uncertainty in Mexico contributed to falling foreign investment, so did rising interest rates in the United States, which made investment in Mexico more attractive for foreign investors and Mexicans alike. While the Salinas administration might have considered further devaluations during the summer of 1994, it is clear why it did not do so: Reserves were at a high level by historical standards, a devaluation would have led to a loss of credibility for the government within Mexico and with foreign investors, it was hoped that the political shocks were transitory and that foreign investment would return, and there was a presidential election coming up. During the fall of 1994, however, the situation became unsustainable.

Carrying out a devaluation with $16.3 billion in reserves in mid-November would have been easier, especially if promises of U.S. support had been obtained, than carrying one out with only $10.5 billion in reserves in late December. A major problem with the December 20 devaluation was that the Zedillo administration gave in to the demands of its Pacto partners that the devaluation be small, only 15 percent. On December 20–21, the Banco de México spent $4.6 billion of its reserves supporting the peso at its new level, leaving it with only $5.9 billion.

During 1994 the Salinas administration, in an effort to keep debt service low, had allowed most of Mexico’s $40 billion short-term public debt to become very short-term (91 days rather than 182 days or 364 days) and dollar-indexed rather than peso-denominated (see Figure 7-3). Figure 7-4 shows the relevant interest rate differentials. The difference between the 91-day tesobono rate and the 90-day U.S. T-bill rate
Figure 7.3. International Reserves vs. Government Bonds (1994)

is a pure country risk premium. Starting in April 1995, after the March devaluation, since there was a 3 percent slide still planned for the peso/dollar exchange rate, any difference between the cetes rate and that for tesobonos that exceeds 3 percent is a pure currency risk premium. Mexican financial authorities seem to have thought that the currency risk premium of 3–8 percent being demanded by foreign investors, made wary by the March devaluation, was too high for Mexico to pay.

In any case, the $5.9 billion left in reserves on December 22 was too little to meet the Mexican government's upcoming obligations. Data on Mexico's foreign reserves and tesobono obligations were shrouded in secrecy in 1994. Rumors abounded both in Mexico and abroad. When investors came to understand the situation Mexico was in during early January, Mexican interest rates shot up, and Mexican stock prices fell in peso terms and plummeted in dollar terms. On January 30 the Banco de México had $3.5 billion in reserves, more tesobonos were reaching maturity, and Mexico was on the brink of default.

PROSPECTS FOR THE FUTURE

As its part of the national Monetary Mexico from $7.8 of credit, IMF March move as a concrete precedent adjustr February 6, 1995). prospects for its long-term. Unfortunately, 1 current economic growth rate of 10 percent t expenditures, and a
PROSPECTS FOR THE FUTURE

As its part of Clinton's January 31 package for Mexico, the International Monetary Fund (IMF) expanded its earlier line of credit for Mexico from $7.8 billion to $17.8 billion. In announcing this expansion of credit, IMF Managing Director Michael Camdessus explained the move as a concrete illustration of the IMF's support for Mexico's unprecedented adjustment program, the *apertura* of 1985–94. *IMF Survey*, February 6, 1995). Mexico has indeed come a long way since 1985, and prospects for its long-term recovery appear good.

Unfortunately, 1995 is going to be a difficult year for Mexico. The current economic program includes an increase in the value-added tax rate of 10 percent to its 1983–91 rate of 15 percent, a cut in government expenditures, and an increase in the minimum wage of 20 percent, which
will fall far short of the increase in prices. There are some good signs, however. The government remains committed to the policies of apertura. Zedillo himself enjoys a surprising amount of popularity, given the economic situation, for having appointed a member of the PAN, Antonio Lozano Gracia, as attorney general; reopening the investigations into the Colosio and Ruiz Massieu assassinations; ensuring that the PRI gracefully acknowledged the victory of the PAN in gubernatorial and mayoral elections in Jaltisco, home of Guadalajara, Mexico’s second largest city; and showing his commitment to make Mexico a country where the law applies to everyone and where the political party in power receives no special treatment by the government. It is possible that the changes in Mexico’s political system that will occur during the Zedillo sexenio (six-year term in office) will be as significant as the changes in the economic system that occurred during the de la Madrid and Salinas sexenios.

For the Zedillo administration to carry out political reforms, it needs to survive 1995 with a minimum of damage to the economy. The biggest problem Mexico currently faces is in the banking sector. Many banks indexed deposits to dollars before the crisis and now have far higher liabilities than expected. At the same time, rising interest rates make it more difficult for loan-holders to make repayments. To make matters worse, foreign banks cut Mexican banks’ lines of credit during the crisis, making it more difficult for them to do business. In an effort to reduce pressures in the banking sector, the March 1995 program includes a scheme for allowing debtors to repay banks at a constant real interest rate while guaranteeing banks the nominal interest payments due to them.

A related problem is that of loans made by the National Development Bank (Nacional Financiera or NAFINSA) during 1993 and 1994. These loans, which were financed by NAFINSA loans from the Banco de México, were made to credit unions throughout the country. During 1994, these loans were expanded as the government sought to instill a sense of economic prosperity before the elections. Having to write off a significant fraction of these loans would cause problems both for NAFINSA and for the government budget.

The events of 1994 certainly provided painful lessons for the Mexican government. First, a more flexible policy instrument than the nominal exchange rate anchor is needed to combat inflation; ideally, such an instrument would still provide the credibility of the exchange rate anchor.
Second, simultaneously letting reserves fall and borrowing in dollars raises the possibility of a bank run. Third, and possibly most importantly, political reform is necessary for economic stability.

The situation in Mexico has cleared up considerably in the first half of 1995. The Zedillo administration has reestablished fiscal discipline, which had begun to slip during the final year of the Salinas administration. It has continued the economic reforms of the de la Madrid and Salinas administrations with further privatization, deregulation, and liberalization. It has also established policies of greater transparency and timeliness in reporting data on its foreign reserves and government finances. Along with the massive political reforms being enacted by the Zedillo administration and the earlier economic reforms of the de la Madrid and Salinas administrations, these policies lay the groundwork for a rapid recovery. Already there are favorable signs; the Mexican peso and stock market have stabilized, and Mexican exports have risen by 36 percent between January and March 1995. The sure sign of recovery will be when foreign portfolio investment returns.