Chapter 14

Currency Crises and Institutional Changes in Latin America: Lessons from Mexico

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Introduction

In 1982, 1985, 1987 and 1994 Mexico registered major exchange rate devaluations; in the first and in the last of these episodes it was the epicenter of an emerging markets' financial crisis that required international intervention. Our point of departure for an understanding of the determinants of Mexico's abrupt exchange rate movements is that the models to analyze them can be classified into three generations of models. This understanding is required to assess if the institutional reforms they instigated are effective to avoid their recurrence, to reduce vulnerability of the economy to external shocks and to induce market participants to internalize cost implied by exchange and interest rates uncertainty.

In first generation models a collapse of a fixed exchange rate is the foreseen result of unsustainable fiscal and monetary policies. In second generation models, exchange rate devaluations can occur as self-fulfilling events in which financial market participants, in an attempt to protect themselves, precipitate the very devaluation they fear. This occurs even though economic fundamentals are consistent with a no-crisis outcome. That is, as opposed to what happens with previous models, more than one equilibrium exchange rate is embedded for a same set of fundamentals. The multiple equilibrium possibility solution is shared by third generation models which, in turn, incorporate as key ingredients government bailout guarantees, moral hazard, contract enforceability problems and the effect of exchange rate movements on banks' balance sheets.[1] The depreciation of the French franc in 1993 is generally regarded as the event that forced economists to recognize the limits of the first generation currency crisis models, whose predictive power was most clearly shown in the now paradigmatic case of the 1982 Mexican peso devaluation. In turn, the 1998 Asian crisis made abundantly clear the need for a third generation of models. In this paper we show that relevant features for

1 A representative model of the first can be found in Flood and Garber (1984), of the second in Obstfeld (April 1998) and of the third in Schneider and Tornell (December 2000).

the development of second and third generation models were already provided by currency collapses that had previously occurred in Mexico.

We show that the collapse of the Mexican peso in 1987 was a self-fulfilling event that occurred in spite of a compatibility of fiscal fundamentals with the prevailing exchange rate regime. We consider the ingredients required to understand the 1994 crisis and argue that these are the core of third generation currency models, especially the government bailout guarantees offered by Mexican authorities before 1994 and the uncovered positions of banks' balance sheets. We add that another important ingredient to understanding this crisis was the prevailing lack of transparency of key indicators in the conduction of monetary policy and banking supervision – among them those related to commercial banks' solvency and to the extent that the Central Bank could back-up with international reserves domestic public debt that was denominated in US dollars (so-called *Tesobonos*). This lack of transparency misled private agents in their decisions concerning exchange rate and interest rate uncertainty.

We stress and discuss how the crises of 1985, 1987 and 1994 were powerful instigators of major institutional changes on the macroeconomic and financial regulatory fronts. After the 1985 exchange rate crisis, the economic administration introduced far-reaching fiscal reform, reduced government subsidies, privatized the majority of state owned enterprises and successfully renegotiated its foreign debt. The Central Bank's autonomous status resulted from a need to avoid the repetition of the circumstances that led to the 1987 exchange rate depreciation. In turn, after the 1994 crisis, measures were taken for the elimination of the blanket coverage on bank deposits and its replacement by a limited deposit guarantee scheme, for an adequate bank deposit insurance mechanism and for more transparency in indicators used by monetary authorities for the supervision of banks.

In addition to this introduction, the paper is structured into three sections. The first section presents an overview of the evolution of the Mexican economy. The following section examines three major exchange rate crises that occurred in Mexico in a period of only ten years. We posit that while first generation models adequately explain the 1985 crisis, the 1987 crisis belongs to the second generation and that the 1994–1995 episode provides the first case in the world that inspired the development of third generation crisis models. The section ends with a discussion of the 1998 episode – which could have resulted in another exchange rate depreciation, but did not – and asks what was different. The concluding remarks are left for the final section.

Background of the Mexican Economy

The so-called "populist" economic policy conducted in Mexico before 1982 led to an incontrovertible textbook case of "first-generation" exchange rate crisis (Bazdresch and Levy 1991). Although this episode was followed by a three-year lapse of temporary macroeconomic discipline, no effective fiscal reform was taken then. As a result, an abrupt 20 per cent loss in the value of the peso in 1985 made evident the need for measures that effectively address the incompatibility of fiscal

fundamentals and the exchange rate regime. In spite of the fact that these were taken and solid macroeconomic fundamentals were achieved by 1987, another major currency crisis was registered at the end of that year. Since this occurred in an inflationary environment, the movement of the exchange rate made the indexation of the economy more likely. As a response to this situation, measures were taken to restore and maintain the credibility of monetary authorities – a process that culminated with the granting of autonomy to the Central Bank. With strict adherence, an announced management of the nominal exchange rate was implemented from 1988 onwards. This was the result of a monetary program, with continuing commitment to credit expansion taking place only as expectations and growth reactivation consolidated (Aspe 1993).

Privatization of publicly owned enterprises and banks,[2] financial de-regulation, sustained reductions in public debt, large surplus in the capital account of the balance of payments and the signing of a Free Trade Agreement with United States and Canada characterized the last two years of the 1980s and the first three of the 1990s. The funds obtained from the privatization of publicly owned enterprises were used to re-purchase government debt, which was also reduced with the sustained fiscal surplus of these years. As the share of public debt declined in banks' portfolios, the private one augmented.

During this period, Mexican firms had access to international capital markets on unprecedented favorable terms. This implied that, for the most dynamic and solvent of them, acquiring domestic loans was no longer an attractive option[3] and that Mexican banks had to turn to riskier clients as their lending capacity grew. Bankers making loans before the crisis erupted, as well as their custumers, were expecting higher real estate prices, lower interest rates and faster economic growth in subsequent years.

According to Krugman (1995: 30), "excessive market optimism on how the reforms adopted in Mexico after 1988 would generate a growth takeoff led to a temporarily self-fulfilling prophecy along with a more subtle political process through which the common beliefs of policy makers and investors proved mutually reinforcing".

The flip side of an apparently solid macroeconomic picture was a sustained private sector spending spree fueled by the increased lending capacity of banks. The five-year boom in household spending had an aggregate counterpart in terms of their holding of financial assets relative to their debts. By the first half of 1992 they were no longer net creditors with the banking sector, as their loans, taken as an aggregate, surpassed their deposits. Their holdings of public debt also declined as a counterpart of the wealth reduction implied by having expenditure flows above their earnings for a sustained number of periods. Due to this reduction in financial wealth and because foreigners increased their holding

2 The privatization of the commercial banks in 1991 took place following nine years under state ownership.

3 With the nominal exchange rate policy between 1991 and 1994 *ex-ante* cost of financing in dollars was very low vis-à-vis financing in pesos.

of peso-dominated Mexican debt, domestic residents ended up holding in 1994 a very low share of Mexican financial assets.[4]

Compared with previous crises, in 1994 the exchange rate regime was relatively more vulnerable. As the exchange rate crisis erupted in December 1994, the consequences of an inadequate supervision and regulation of domestic commercial banks became evident: This time a banking crisis and the fears of the cost it could imply for the government aggravated the collapse of the Mexican peso.

A sudden reversal of expectations concerning an optimistic growth scenario and the feasibility of avoiding an exchange-rate collapse was accentuated by three factors: the lack of transparency of indicators used by the monetary authorities in their decision making, the high exposure of banks to macroeconomic shocks and an associated government contingent liability in bailing out those who were distressed.

First, Second and Third Generation Currency Crisis Models in Mexico

We analyze next the determinants of the 1985, 1987 and 1994 currency crisis and stress that each of them illustrates a case study of first, second and third generation currency crisis models.

Unsustainable Macroeconomic Policies and the 1985 Peso Depreciation

A limited amount of international reserves and the perception that the authorities would not or could not change their expenditure and income patterns, prompted, as it had happened in 1982, major capital outflows that caused the collapse of the Mexican currency in 1985. As in the preceding depreciation of 1982, first generation models adequately explain the 1985 depreciation as the result of forward-looking agents reacting to the perception that fiscal imbalances were no longer sustainable.

Market participants' expectations concerning the incompatibility of economic fundamentals and the ability of the Mexican government to sustain its exchange-rate regime were reinforced by four major factors:

1 Before 1985, the authorities reduced public expenditures across the board to reduce fiscal deficits, instead of eliminating or consolidating state functions. This led many observers to believe that – as happened to be the case – the 1982–1984 reduction in public expenditures was transitory in nature, and that the omnipresent role of the state in the economy had not really changed.

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4 *Cfr.* Calderón-Madrid (1999). Since foreigners have, relative to domestic residents, more investment opportunities in other countries to which they can quickly move into this might have been an additional source of vulnerability of the exchange rate regime.

2 The uncertainty prevailing in oil markets made oil export revenues an unstable source of revenue, a problem aggravated by the fact that it represented 26 per cent of public sector income in 1985.
3 The semester prior to the exchange rate depreciation was characterized by a relaxation of fiscal spending.
4 It was not clear yet that ongoing negotiations with international bankers to reduce Mexico's debt overhang – initiated in the wake of the 1982 debt crisis – would come to a favorable conclusion; discussions concerning reductions in interest payment on foreign debt and changes in its amortization dates were still taking place.

Changes in the composition of fiscal accounts and a debt renegotiation program that altered perceptions of fiscal solvency and thus of the feasibility of announced exchange rate programs occurred only after the crisis episode. Although these changes were sustainable, the exchange rate regime would collapse two years later.

Self-Fulfilling Confidence Crisis and the Collapse of the Peso in 1987

In spite of solid macroeconomic fundamentals in 1987, a major currency crisis was registered at the end of that year. During 1987 the balance of payments was quite strong and the possibility of multiple equilibria in second-generation models is consistent with puzzles such as the one expressed in relation to that episode:

> It is paradoxical that financial crisis should have occurred when international reserves were at a historical peak [at the end of 1987] and the balance of payments was recording a substantial surplus. But there is also little doubt that the inflationary environment amplified the nervousness of financial markets. Once more it became apparent that, in times of high inflation, expectations are extremely volatile and can easily destabilize what appeared to be an otherwise sound financial situation. (Ortiz 1991: 289)

In early 1987 inflation rates increased to unprecedented levels and were already exhibiting an upward trend. The government reacted by allowing the nominal exchange rate to depreciate at a controlled rate, and by varying the rhythm of this daily crawling-peg in an attempt to balance two conflicting aims: to reduce domestic inflation and to counteract the effect of cumulative domestic inflation on export competitiveness. From July to October, the daily rate of depreciation was reduced relative to the previous six months. Then, in a clear change of policy, during the six weeks before the devaluation took place, the monetary authorities reacted by accelerating the rate of nominal exchange rate depreciation. It was increased from a monthly rate of 6.6 per cent in the third week of October to over 10 per cent in less than forty days, thereby partly compensating lost export competitiveness, but signaling that the exchange rate would no longer be used as nominal anchor to achieve disinflation.

In theory, as in a model developed by Obstfeld (1988), monetary authorities can provoke a speculative attack on the balance of payments if they lead agents

to believe that they are prepared to use the exchange rate as an instrument to make up for reductions in export competitiveness. He showed that the following is possible: When forward-looking speculators think that the monetary authorities are prepared to use the exchange rate if inflation hits a certain threshold, the result can be a forced devaluation followed by inflation whereby this threshold or an even higher rate is registered. Thus, instead of inflation reaching the threshold and causing the bank to act, a speculative attack of agents anticipating the behavior of the bank forces an abrupt depreciation before inflation actually approaches the limit, leading to further inflation.

The monthly rate of inflation increased to almost 15 per cent in December – almost twice as high as the average monthly rate of inflation of the previous eleven months, as a result of a speculative attack that caused a 21 per cent devaluation of the peso. It is our contention that an inflation threshold that would have led monetary authorities to adjust the nominal exchange rate was largely superseded in December 1987 in Mexico, not because of the actions of the authorities, but as a result of a forced devaluation precipitated by the actions of forward-looking financial market participants. To explain this abrupt exchange-rate depreciation, the insight of the Obstfeld model referred to above is useful; hence we consider next the relationship between changes in domestic interest rates and in the exchange rate to show how the monetary authorities were the ones that provoked the speculative attack that forced the collapse of the exchange rate.

Consider the monthly nominal interest rates on short-term (twenty-eight day) peso-denominated government bonds – the so-called *Cetes* – that are shown in Table 14.1. These rates increased steadily from October 21 onwards. This upward trend is consistent with the hypothesis that an upward revision of expectations about the monthly rate of exchange rate depreciation had taken place. It is also compatible with effects associated with a reduction in the credibility of the announcements of monetary authorities (an extra return was demanded to compensate for the risk that rates of return would again become lower than expected in terms of an alternative asset denominated in US dollars).

During the period in which exchange rate depreciation was not accelerated by the Central Bank (July, August, September and the first half of October) the annualized *ex-post* rate of return was twenty-four points above returns to comparable bonds in international markets.[5] In contrast, the return on bonds issued on October 21, which matured four weeks later (November 18) was only one-fourth the average rate obtained for bonds maturing during the four previous weeks (second column in Table 14.1).[6]

A return to US dollars, lower than what market participants were expecting, was the result of a rate of exchange-rate depreciation that was – at least 1.83 points – faster than what they thought would be the case, when they bought the

5 *Viz.*, subtracting the twenty-eight days' observed nominal exchange-rate depreciation from the nominal interest rate on *Cetes*. Not shown in Table 14.1, corresponding returns for July and August were on average 2.46 per cent and 2.20 per cent.

6 We concentrated on the dates of primary offers, which took place once a week.

Table 14.1 Rates of Return of *Cetes* During September–December 1987

Auction date	Nominal rate of return in pesos at the day of the auction	*Ex-post* rate a month later, when converted to return in US$	Auction date	Nominal rate of return in pesos at the day of the auction	*Ex-post* rate a month later, when converted to return in US$
September 2	6.98	2.06	October 28	7.26	0.87
September 9	6.95	2.18	November 4	7.37	0.51
September 16	7.00	2.36	November 11	7.76	0.61
September 23	7.05	2.57	November 18	8.31	–15.5
September 30	6.97	2.61	November 25	8.89	–14.19
October 7	6.9	2.26	December 2	8.88	–12.68
October 14	6.9	1.79	December 9	9.36	–10.72
October 21	7.00	0.57			

Source: Bank of Mexico.

bond (no factors determining the risk of holding pesos changed). This story was repeated during the following three weekly auctions.[7]

Due to the fact that the Central Bank depreciated the exchange rate at a faster rate than that expected by financial market participants holding Mexican government debt, during these weeks *Cetes* returns ended up below expectations.

That is, as a result of successive surprises of this kind, and given expectations that a further acceleration of exchange rate depreciation could be on its way, a major speculative attack on the peso gained momentum and the abrupt exchange rate adjustment ensued. This caused capital losses and currency depreciation well above what financial market participants had feared.

Uncovered Banks' Balance-Sheet Risk-Exposure and the 1994 Crisis

In December 1994 an exchange rate crisis erupted after a seven-year period in which a commitment to keep inflation low using the exchange rate as a nominal anchor was observed.[8] There was an initial attempt to have a 10 per cent fall of the peso within the limits of an exchange rate band controlled by the Central Bank. Over the next two days, following this initial realignment, no major increase in interest rate occurred and more reserves were lost than in the previous month.[9]

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7 International interest rates did not fall in these weeks and factors determining country risk in Mexico – such as presidential elections in 1988 – contributed, if at all, towards an upward revision of the *ex ante* dollar return.

8 For a discussion of "reputation building" process that characterized the 1998–1993 exchange and interest rate management, *cfr.* Calderón-Madrid (1997): 138–140.

9 At the time of the crisis, the Central Bank did not use to disclose information on the level of international reserves.

This speculative attack forced the Central Bank to withdraw from the foreign exchange-rate market, allowing the currency to float freely.

According to information that is now publicly available, the previous large decline in international reserves occurred a month before the exchange rate collapse, as a result of a relatively minor political scandal (the resignation of the attorney general in mid-November).[10] This was the first time that the authorities of the Central Bank opted to loosen international reserves, rather than tighten interest rates as a policy to stop capital outflows. During the two days that the authorities attempted to keep the exchange rate within a larger band, they also opted to loosen international reserves, rather than letting interest rates skyrocket as an attempt to stop the speculative attack.

Market participants might have perceived this policy stance to signal the authorities' fears in avoiding potential costs implied to them by raising interest rates and deteriorating the solvency of banks. If this were the case, the capital outflows and the exchange rate depreciation could be seen partly as a result of a self-fulfilling currency crisis of the type suggested by Bensaid and Jeanne (1997). In these crises, raising the nominal interest rate helps maintain the parity, but is costly for the government. The speculators are aware that this cost gives incentives for the government to stop defending the parity, which in turn reinforces the speculation against the currency.

A two-month downward trend of the exchange rate, accompanied by increasing domestic interest rates followed the exhaustion of international reserves.[11] This time, a climate of uncertainty due to the overexposure of banks and potential bailing-out of those in distress created conditions for further exchange-rate movements to be determined less by market fundamentals than by the expectations of financial market participants.[12]

A major component aggravating the crisis was the prevailing government guarantee that bank depositors and other senior bank creditors would be protected in full in the event of bank insolvency. This created incentives to undertake risky lending practices, with high profits in the event of an optimistic scenario and limited losses otherwise.

As a result, banks had an uncovered position of their balance sheets in 1994 against macroeconomic risk – a risky position aptly described as being "in effect long [in] real wages, short [in] nominal interest rates and long [in] real property".[13]

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10 This behavior contrasts with the one adopted by the Central Bank in April of that year; their reaction then to an attack on the peso was to raise interest rates significantly.

11 This result contrasts with previous episodes, for example, 1985 and 1987, in which the nominal exchange rate initially "overshot" its level and no further real exchange rate depreciation occurred.

12 A stabilization package put together by the US Treasury and the IMF in 1995 helped to stabilize expectations.

13 Lacoursiere (1999). Domestic banks had a "potential" currency mismatch that did not occur. This was because their dollar liabilities were "backed" with Tesobonos and there were doubts as to the government fully honoring their value in dollars. A point raised by Garber (1988) is that domestic banking sector's off–balance sheet operations played an important role in increasing the vulnerability of the economy to an exchange rate attack.

The developments on the exchange rate front exposed and intensified the potential insolvency of most banks, which in turn aggravated fiscal and balance of payments problems. Financial market participants' *perceptions* about the fragility of the banks' balances and of the lack of an adequate institutional mechanism to reduce the potential fiscal cost of a major banking crisis further precipitated the loss in value of the Mexican peso.[14] Moreover, by acting initially on the exchange-rate front, the authorities led market participants to fear that, since the monetary program had been discredited, domestic interest rates would have to increase and that economic slowdown would follow.

Once the crisis began in December of that year, it became apparent that banks had portfolios with badly assessed or non-existing credit collateral and with very inefficient administrative records. This situation – attributable to a great extent to lax banking supervision and lack of transparency – was severely aggravated by the prevailing system of imperfect enforceability of contracts which encouraged a culture of non-payment of debts.

This relatively lax regulatory and supervisory context implied that, with the prevailing institutional framework, neither bank owners nor their managers had incentives to improve risk-assessment strategies and accounting practices. It also meant that incentives for the circumvention of regulations for related lending were implicitly offered.

According to calculations by Guerra (1997), in 1994 a non-negligible share of the mortgage loan portfolio either had, or was close to having, a negative capital value (because of interest-rate increases and a decrease in real estate prices during the two preceding years). Thus, the ratio of the amount of the loan relative to the house value was close to one for many borrowers.

These figures led Guerra to suggest that "[t]he mortgage loan problem is frequently pointed out as caused by the crisis, [n]evertheless … the problem of non-performing mortgage portfolio had already been generated [by 1994], it was the crisis which created the conditions under which it will be developed" (Guerra 1997: 44).

Since most mortgage loans had interest payments of 5 or 6 percentage points above the equilibrium inter-bank interest rate, debtors saw their debt increase sharply when this rate increased to values above 50 per cent in 1995, as a result of the exchange rate collapse in December 1994. This increase in the real value of mortgages, together with a fall in housing values and the highly leveraged position of debtors (in view of their small initial down payments), caused the ratio of the

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He argued that commercial banks "inflated" capital inflows before the crisis by means of derivatives and other off–balance sheets instruments and automatically reversed them after the crisis, thereby accentuating the sharp turnaround in foreign currency flows that was to occur, as soon as perceptions changed.

14 In third generation crisis models it is possible to explain a situation in which an attack can provoke a crisis that would not have occurred with such strength otherwise. For example, in the model deployed by Burnside, Eichenbaum and Rebelo (2000), self-fulfilling devaluations are possible because devaluations transform the government's contingent liabilities into actual liabilities and deplete government reserves.

value of the credit relative to the value of the property to approach or pass one. Between 1995 and 1999, these ratios continued to worsen. The extent to which the evolution of the non-performing mortgage portfolio was linked to the lack of recovery of property prices in Mexico is reflected in Table 14.2: Contrary to expectations when mortgages were granted, the real value of houses did not increase more quickly than consumer prices. In addition, homeowners could not service their debt any longer, since their income was stagnant or declining as a result of the economic recession that followed the 1994 crisis.

Table 14.2 Variations in the Prices of Houses Relative to the Consumer Price Index (Relative to the So-Called *Udis*)

Type of house	1995	1996	1997	1998	1999
Social	1.03	0.98	1.00	0.93	0.85
Economic	1.06	0.87	0.89	0.79	0.77
Average	0.97	0.87	0.92	0.89	0.8
Residential	0.92	0.87	0.95	0.85	0.76
Residential plus	0.99	0.94	0.95	0.89	1.21

Source: FOVI, Bank of Mexico.

Some authors, most notably Sachs *et al.* (1996), have suggested that the financially vulnerable position of the government was a major detonator of the exchange rate depreciation. According to them, "[i]liquidity exposed Mexico to a self-fulfilling panic. Investors realized that if other investors stopped lending money to the Mexican Government, the Government would be unable to repay its debt – particularly the dollar-denominated Tesobonos – as they fell due. Therefore, each individual investor could do no better than to withdraw its funds when other investors started to withdraw their funds".

Together with the government's un-hedged position we argue next that private firms with debt in foreign currency as well as domestic banks with liabilities in dollars were also major contributors to the severity of the crisis. Mexico's minister of finance five years later recalled the situation he had to face as follows:

> We started doing some rough back-of-the-envelope calculations of what was the amount of amortizations due in '95 and it came out to pretty much staggering amounts. We were running a current account deficit of about 7 per cent of GDP – that was about 40 billion dollars. Plus we had another 35 billion worth of Tesobonos, and about 7–8 billion of sovereign debt due. *And amortizations of private debt for another 40–45 billion dollars.* So, the number was pretty big, as we sat there. (Ortiz 2002, italics added)

This reveals the relevance of private market participants. Moreover, as a result of a market optimism that resulted without basis, private firms and banks participating in international financial markets were unwilling to issue long-term debt or hedge their positions, even days before the crisis erupted. This reluctance was due to

prevailing expectations that Mexican liabilities were about to receive a lower-risk qualification by international grading companies – hence for funding costs to fall down. Due to these expectations, not only were most of them very liquid in their exposure, but they were also un-hedged against macroeconomic crisis.

On the one hand, as they attempted to move against an unfavorable scenario and pay debts in foreign currency, they increased the pressure on the Mexican peso. On the other hand, due to the liquid positions of the holders of these assets, once the crisis started, it was difficult to renew them, even at much higher rates; they were either rationed or offered unacceptable terms.

As a result of 1994 crisis, the regulatory and supervision frameworks for commercial banks were substantially reformed: The elimination of the blanket coverage on bank deposits and its replacement by a limited deposit guarantee scheme; the implementation of an efficient bank deposit insurance mechanism embedded with early warning and prompter intervention mechanisms[15] and easing remaining barriers to foreign ownership in the financial sector, to the effect that foreign investors gained the right to acquire equity holdings in the three largest commercial banks.

These features and the institutional changes that have occurred as a result of the other two crises discussed in this paper have helped to avoid an exchange rate collapse in the last decade. (Since 1985 fiscal sustainability has been part of the macroeconomic agenda and – with the exception of the bailing-out of banks in the 1995–1998 period – has no longer been a source of incompatibility with exchange rate stability. In light of the 1987 exchange rate crisis experience, the Central Bank has been concerned with keeping domestic inflation within a targeted figure – becoming an autonomous institution has enhanced its credibility in achieving them).

This appears to have been shown in 1998 and 1999, when seven of Mexico's important competitors in the US market – Indonesia, Thailand, Malaysia, Philippines, Korea, Taiwan and Singapore – had major exchange rate depreciations.[16] In clear contrast to what happened in 1987, there was no doubt that the Central Bank's position was that the expansion and sheltering of export markets should not be achieved at the expense of monetary policy credibility, but by means of sustained productivity gains in the production of goods and services. The monetary program for inflation control and financial stability was not modified and after relatively minor exchange and interest rates movements, they recovered their 1997 levels.[17]

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15 *Cfr*. Calomiris (1999).

16 During the first months of the Asian crisis (Jun 1997–January 1998), their currencies had depreciated by 198 per cent, 104 per cent, 77 per cent, 67 per cent, 85 per cent, 20 per cent and 23 per cent respectively. In the same period, the Mexican peso depreciated 1.4 per cent.

17 As a result, in spite of their more favorable exchange rates, Southeastern Asian countries could not increase their exports to the United States at the expense of Mexican products by more than the amount in which Mexican products displaced products from these countries during the same period.

Conclusion

A working hypothesis in this chapter is that the Mexican economy has become less prone to exchange rate crisis as a result of institutional changes on the macroeconomic and financial regulatory fronts, instigated by previous collapses of the peso. We suggested and have demonstrated that this was the case. Moreover, a floating exchange rate regime has been followed in Mexico since 1995 – unlike what happened with a regulated exchange rate regime that subsidized one-sided bets against the peso, market participants have since been induced to hedge against macroeconomic risks.

A process towards transparency adopted by the Bank of Mexico – required to achieve its inflation targets within a flexible exchange rate regime – has also played a key role in allowing private agents to plan their financial decisions.[18] As it has been pointed out by Martínez Trigueros (2005), this regime has a feature not so evidently present in previous years: It forces market participants to internalize risks taken in their investment and indebtedness decisions.

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18 Also helping to cope with interest and exchange rate uncertainty is that, since 1995, a market for futures and derivatives on the Mexican peso has been operating in Chicago.

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