Banking Crisis and Currency Crisis: Korea and Mexico

- The Role of Capital Market Opening Strategy -

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Introduction

Whereas most of the currency crisis in the 1980s, especially in Latin America, had no direct link with a banking crisis[1], the recent Asian currency crisis broke out concomitant with a banking crisis. This is because in the 1970s and early 1980s, financial markets were highly regulated and most of the foreign debt was of the public sector. On the other hand, most of the Asian countries in 1990s were in the process of financial and capital account liberalization, and the foreign debt was heavily concentrated in the private sector.

Kaminsky and Reinhart (1998) argues that the causal link between the currency crisis and the banking crisis is not unidirectional. In a sample of 20 countries, with 26 banking crisis and 76 BOP crisis altogether, they found that the probability of a BOP crisis conditional on the banking crisis was 0.46, much higher than unconditional probability of BOP crisis, which was 0.29. The probability of banking crisis reaching a peak conditional on BOP crisis was 0.16, whereas the unconditional probability

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of banking crisis was 10%, suggesting that existing problems in the banking sector were aggravated or new ones were created by the currency crisis.

Although it took place in 1994, the Mexican currency crisis shares similar characteristic with those in the 1980s in that the problem was the debt of the public sector. The difference of the Mexican case with that of Asian countries including Korea, was that the Mexican currency crises preceded the banking crisis, whereas the currency crisis in Asian countries was, in a sense, caused by the banking crisis.

The common feature of Mexico and Korea was that both countries were in the process of financial and capital account liberalization. Therefore, it could be suggested that, although the currency crisis is closely related with capital account liberalization, the latter does not determine the causality between banking crisis and currency crisis.

However, if we analyze the way the capital account was liberalized, we can find that there is a close relationship between capital account liberalization and the sequence of the banking and currency crisis. In Mexico, the capital account was liberalized largely by allowing foreign investment in the stock market and government bonds, with the borrowing of commercial banks restricted. In Korea, the capital market was opened by allowing financial institutions and firms to borrow from abroad and to issue bonds in the international capital market.

The objective of the paper is to show that the difference in the process by which the capital account was liberalized can partly explain why, in Mexico, the banking crisis deepened only after the currency crisis had broken out, and why, in Asian countries, the currency crisis was caused by the financial crisis.

This paper is organized in the following way: in section 2, we briefly explain the crisis in Korea and Mexico with some focus on the financial sector; in section 3, we analyze the interaction between the banking crisis and currency crisis; in section 4, we explain why the process by which

1) Of course, there are clear exceptions like the Chilean crisis.

the capital market was opened in Korea and Mexico played an important role in this interaction; we conclude in section 5.

Crisis in Korea and Mexico

Korea

Among the many compounded causes behind Korea's foreign exchange crisis, the most fundamental reason is the aggravation of the financial structure of firms that had cumulated after 1995 together with the downturn of the economy which resulted in large-scale bankruptcies. This has been reflected in the enlargement of bad loans of the financial sector which, combined with the repercussions of the foreign exchange crisis in Thailand and other East Asian economies, detonated the foreign exchange crisis in Korea.

The development of the Korean economy until the 1980s was achieved through a tacit agreement among the government, conglomerates and banks, and as result, there has been a huge moral hazard problem. Also the competition among "chaebols" resulted in excessive investment. This economic atmosphere changed to an extent in the 1990s by liberalizing the financial sector and also by deregulating the economy, but there has been no drastic change in the incentive structure and the business practice of the economy.

However, as the Korean government carried out a relatively conservative fiscal and monetary policy, the market opening and financial liberalization did not disturb much of the economic stability. As seen on [Table 1], the Korean economy could maintain a high GDP growth rate and low inflation rate up to 1996. The current account deficit was the only visible problem reaching 4.9% of the GDP in 1996. Even though there has been a current account deficit throughout the years except in 1993, the foreign reserve increased due to the large inflow of short-term foreign capital.

Table 1, Korea's Macroeconomic Indicators

(Unit: %, billion dollars)

	Growth Rate	*Inflation*	*Corporate bond yield*	*Fiscal deficit*[1)] */GDP*	*Current account /GDP*	*Foreign reserves*
80-85	6.3	10.9	19.0	-2.5	-3.8	7.1
86-91	9.9	6.1	15.1	-0.2	3.0	12.2
1992	5.1	6.3	16.2	-0.7	-1.5	17.1
1993	5.8	4.8	12.6	0.3	0.1	20.3
1994	8.6	6.2	12.9	0.5	-1.2	25.7
1995	8.9	4.5	13.8	0.4	-2.0	32.7
1996	7.1	4.9	11.9	0.3	-4.9	33.2

Source: Cho and Kim (1998)

Note: 1)IMF consolidated fiscal deficit

The current account deficit and the inflow of short-term capital reflected the increase in the investment of the firms that were supplied with large short-term capital. The sudden increase in the investment by the "cheabols" was made possible by the capital liberalization and stimulated by the implicit traditional guarantee of the government. The lack of a proper incentive structure and the inadequate prudential regulation and supervision could not effectively restrict the non-profitable investment of the large conglomerates.

In the financial sector, by changing the short-term financing companies to merchant banks and allowing these banks to carry out foreign exchange transactions, the inflow of short-term capital increased substantially. Being allowed to borrow from abroad, the merchant banks usually borrowed capital on a short-term basis but invested it on a long-term basis. Out of the total capital brought in by the merchant banks during 1992 to 1996 on short-term basis, those invested on a short-term basis were merely

3~ 6% and the rest were invested on a long-term basis. Although this term-mismatch made the economy vulnerable to external shocks and prone to a foreign exchange crisis, the supervisory authorities did not regulate it adequately.

Against this backdrop, as many conglomerates went bankrupt since early 1997, and the government failed to enforced a corporate and financial sector reform policy in appropriate time due to the burden of the coming presidential election, international confidence in the Korean government dropped rapidly.

The foreign exchange crisis in Thailand that erupted contemporaneous with the increased vulnerability of the Korean financial sector, raised serious doubts about Korea's macroeconomic situation, soundness of the financial sector, political situation and the government's willingness to carry out reforms, and even doubts on further economic development of the Asian countries including Korea. This led to the sudden flight of the foreign investors from the East Asian countries.

Mexico

After a long period of economic stagnation since the debt crisis in 1982, Mexico undertook a series of structural reform policies including trade liberalization, stabilization, deregulation, and privatization in the late 1980s. Financial liberalization was an important component of the structural reform. Interest rates were liberalized and commercial banks that had been nationalized in 1982, were reprivatized between 1991 and 1992. The success in the negotiation and the subsequent restructuring of foreign debt allowed Mexico to return to the international financial market, and after the opening of the capital market in 1990, there has been a steady inflow of foreign capital of over $20 billion annually since 1991.

Used as an instrument of stabilization, the exchange rate was pegged to the dollar in 1988, and since January 1989 it was adjusted upward every day at a specified rate. Since November 1991, the exchange rate

was allowed to fluctuate within an exchange rate band which was slightly expanded everyday. The short-term confidence of the exchange rate band brought about foreign capital in search of interest rate differentials, and in turn the short-term capital inflow allowed this policy to be maintained. Also the expectation from NAFTA induced a constant inflow of foreign direct investments. Capital inflow and the financial liberalization enabled reprivatized banks to drastically increase lending to private sector, leading sometimes to suboptimal credit standards with poor collateral, and rising exposure to risk.

The problem of the capital inflow was that it was mostly for portfolio investment, and so the inflow of foreign capital made the Mexican economy very vulnerable to reverses of the flow resulting from internal or external shocks. The overvalued exchange rate and the excessive current account deficit of over $20 billion annually could be sustained only with a continuous inflow of foreign capital.

In order to prevent the expansion of the money supply caused by the inflows of foreign capital, a sterilization policy was enforced and accordingly the inflation rate dropped to a single digit for the first time in 20 years. But as a result, the real interest rate increased and the economy went into a depression. As seen in [Table 2], the GDP growth in 1993 was 0.7% and, in 1994, it increased slightly to 3.5%.

Table 2, Mexico's Macroeconomic Indicators

(Unit: %, billion dollars)

	Growth rate	*Inflation*	*Fiscal balance /GDP*	*Current account deficit*	*Foreign portfolio investment*	*Foreign direct investment*	*Interest rate*
1990	4.5	29.9	-3.3	7.6	6.0	2.6	37.07
1991	3.6	18.8	-1.5	14.9	23.0	4.8	22.56
1992	2.8	11.9	0.5	24.8	25.6	4.4	18.78
1993	0.7	8.0	-2.1	23.4	29.4	4.4	18.56
1994	3.5	7.0	-3.9	28.9	9.9	8.0	15.50

Source: Mexico's Central Bank

In March of 1994 however, foreign investment drop drastically as result of political instability caused by the assassination of the presidential candidate of the ruling party and the increase in U.S. interest rates. The exchange rate faced upward pressure, and it depreciated close to the upperbound of the exchange rate band. Mexico's Central Bank had to inject $10 billion from the international reserve to defend this band. To prevent the outflow of foreign capital, the interest rate of government peso-denominated bonds (Cetes) was increased from 9% to 18%, and the issuance of Tesobonos, a short-tern dollar-indexed bonds, was increased by a large quantity. But nevertheless, because of the devaluation risk, a large amount of capital moved from Cetes to Tesobonos, and also out of the country. Some observers argue that even higher interest rates might have helped, but a recession was an unacceptable alternative on the eve of a presidential election. Furthermore, there was the concern that higher interest would negatively impact the banking system which had already been weakened by a growing volume of past-due loans.

But political instability continued. In June the minister of internal affairs much trusted by the people resigned and, in October, the leader of the ruling party was assassinated. Going though many stages of defending the exchange rate, the central bank spent most of its foreign reserves, and the Mexican government had to devalue the exchange rate by 15% on December 20th, 20 days after the government took office.

For the banking sector that had already accumulated a sizable amount of bad loans, it was difficult to withstand the impact of the currency crisis. Interest rates were increased even more to stabilize the exchange rate, and the economic activity dropped drastically. With high interest rates and economic recession, past-due loans increased dramatically, causing a banking crisis and leading the Mexican government to launch a support program for the financial sector.

Banking Crisis and Currency Crisis

Although financial fragility was frequently mentioned as an element of the Mexican currency crisis, it was hardly considered as the main cause[2]. Most of the studies point to the overvaluation of the real exchange rate and the large current account deficit financed by short-term capital inflows as the main causes of the Mexican currency crisis[3]. Other contends that the large imbalance between stocks of liquid financial assets and gross reserves was the most critical cause[4].

Moreover, Sachs et. al.(1996) contended that "devaluation and financial panic were separate - logically and temporally - with devaluation coming first, and then helping to provoke the financial panic." They argued that the financial panic came as a consequence of the devaluation because investors interpreted the devaluation as a signal that the Mexican government might repudiate on its dollar-denominated liabilities, as it effectively had done in 1982 when it froze dollar-denominated bank accounts and paid them back at a controlled exchange rate significantly below the market rate.

We support this view. We consider that the crisis proceeded from the foreign exchange market to the banking sector, and not the other way. Panic on government securities quickly led to a generalized panic in the Mexican economy, especially the financial sector. Commercial banks were suddenly subject to possibilities of a run with respect to their dollar-denominated deposits that amounted to $39 billion as of October 1994. Corporations also found themselves in a difficult situation to roll over their short-term external debts.

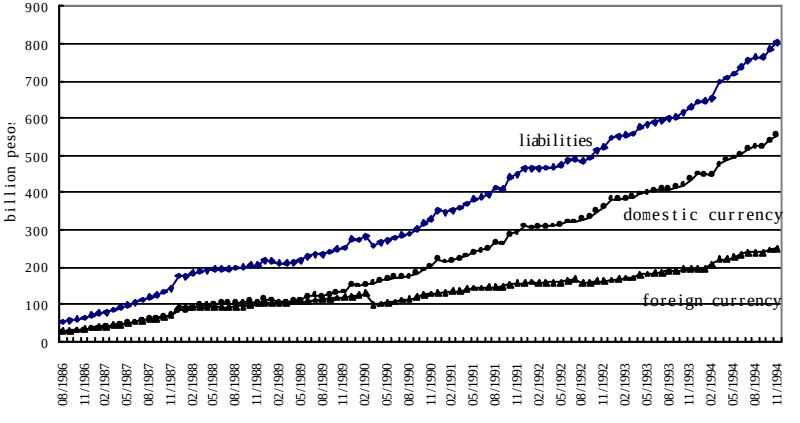
Fortunately, the foreign borrowing of the commercial banks were not

2) One exception is Gil-Díaz (1998)
3) See Edwards (1995), for example
4) See Calvo and Mendoza (1996)

as large as in Korea, because it was restricted by the Central Bank. Although it is true that the increased foreign borrowing enabled commercial banks to increase credit to the private non-banking sector, banks' foreign borrowing was not the main factor that drove up bank credits. In fact, as can be seen in the [Figure 1], liabilities in foreign currency increased in a lower rate than those in domestic currency. In 1987, the share of the bank liabilities in foreign currency was more than 50%, whereas in 1994, just before the currency crisis, this figure had declined to about 30%.

Nevertheless, Mexican commercial banks had to suffer from the indirect effects of the currency crisis. Aside from the instantaneous increase in the value of dollar debt in terms of peso, the financial soundness of the commercial banks continuously deteriorated because of the high interest rates and drop in economic activity. Past-due loans increased from 8.7% in December 1994 to 17.1% in November 1995.

Figure 1, Liabilities of the financial sector: Mexico



source: Banco de Mexico

Contrary to the Mexican case, in Korea, the banking crisis is considered by most observers to have been the main cause of the currency

crisis. In Korea, financial institutions and firms were heavily indebted to foreign banks before the crisis. In this situation, capital withdrawal by foreign investors would directly affect the financial soundness of the financial institutions and firms, and at the same time exhaust foreign reserves, leading to a foreign exchange crisis. The reasons that provoked the withdrawal of foreign investment were the aggravation of the financial structure of firms due to the downturn of the economy, and large-scale bankruptcies. Of course, if the banking sector were sound, a simple downturn of the economy would not result in a banking or currency crisis. But when an economy is in the process of financial liberalization, as Korea was before the crisis, the financial fragility tends to increase, and with it the probability of a banking crisis[5]. This is because financial liberalization, by giving banks and other financial intermediaries more freedom of action, increases the opportunities to take on risk.

In Korea, commercial banks had increased the foreign borrowing and with it lending to the private sector without proper assessment of the risks involved. This would not have been a problem in an economic boom, but in an economic recession, it resulted in an increase of bad loans. The resulting enlargement of the bad loans of the financial sector caused a run of foreign creditors against Korean banks causing a currency crisis and further aggravating the banking crisis.

The difference in the experience of Korea and Mexico with respect to the relationship between the banking crisis and the currency crisis, can be partly explained by the way the capital account was liberalized. In Korea, the foreign exchange business and foreign borrowing of domestic banks were liberalized first, while foreign investment in the domestic bond market was restricted. In Mexico, capital account liberalization took the form of opening domestic bond and equity market to foreign investment while external borrowing of commercial banks was restricted. In the first case, capital outflow led to both banking and currency crisis, whereas, in the second case, it provoked the currency

5) See Demirguç-Kunt and Detragiache (1998)

crisis first, which then, proceeded to a banking crisis.

Capital Market Opening

Financial Liberalization, Capital Market Opening and Capital Inflow

In Korea, the restrictions on the foreign investment in the domestic stock market and short-term trade-related credit were relaxed first, while restrictions on foreign investment in domestic fixed income assets such as government securities and corporate bonds issued by large firms were maintained. Korea liberalized the foreign exchange business and foreign borrowing of domestic banks quickly, while controlling the direct borrowing of corporate firms from abroad. This allowed rapid expansion of foreign debt channeled through the domestic banking system and to a less extent through direct borrowing of corporate firms[6].

As can be seen in [Table 3], there was an abrupt increase in total external debt between 1992 and 1996. The largest increase in external debt was experienced by the financial sector, especially if financial institutions' offshore borrowing and foreign branches borrowing are included. The non-financial private sector also increased foreign borrowing, but not as much as the financial sector, while the external debt of the public sector decreased continuously. Another aspect was that short-term debt increased much more rapidly than long-run debt in both financial and non-financial private sector.

Foreign investment in the Korean stock market was gradually liberalized and there was significant inflow of foreign capital as is shown in [Table 4]. However, compared with capital inflow due to external borrowing, foreign investment in the stock market was relatively small.

6) See Cho (1998)

Table 3, Korea's External Debt: 1992-1997

	1992	*1993*	*1994*	*1995*	*1996*	*1997P*
Total foreign debt[1)]	42.8	43.9	56.8	78.4	104.7	120.8
(long term)	24.3	24.7	26.5	33.1	43.7	69.6
(short term)	18.5	19.2	30.4	45.3	61.0	51.2
Public sector	5.6	3.8	3.6	3.0	2.4	18.0
(long term)	5.6	3.8	3.6	3.0	2.4	18.0
(short term)	0	0	0	0	0	0
Private sector	13.7	15.6	20.0	26.1	35.6	42.3
(long term)	6.5	7.8	9.0	10.5	13.6	17.6
(short term)	7.2	7.8	11.0	15.6	22.0	24.7
Financial sector	23.5	24.4	33.3	49.3	66.7	60.5
(long term)	12.2	13.0	13.9	19.6	27.7	33.9
(short term)	13.3	11.4	19.4	29.7	39.0	26.6
Total foreign obligation[2)]	62.9	67.0	88.7	119.7	157.5	154.4
(long term)	26.0	26.7	3.3	41.0	57.5	86.0
(short term)	37.0	40.3	58.4	78.7	100.0	68.5
Public sector	5.6	3.8	3.6	3.0	2.4	18.0
(long term)	5.6	3.8	3.6	3.0	2.4	18.0
(short term)	0	0	0	0	0	0
Private sector	13.7	15.6	20.0	26.1	35.6	42.3
(long term)	6.5	7.8	9.0	10.5	13.6	17.6
(short term)	7.2	7.8	11.0	15.6	22.0	24.7
Financial sector	43.6	47.5	65.1	90.5	119.5	94.1
(long term)	13.9	15.0	17.7	27.5	41.5	50.3
(short term)	29.8	32.5	47.4	63.1	78.0	43.8

Source: Cho (1998)
Note: 1) World Bank standard of classification of external debt which includes domestic residents debt only.
2) World Bank standard plus financial institutions' offshore borrowing and foreign branches' borrowing.

Table 4, Foreign Investment in Korean Stock Market

	1992	*1993*	*1994*	*1995*	*1996*	*1997.1-10*
Accumulated (billion us$)	2.1	7.7	9.6	12.0	16.5	17.1
(% of GDP)	(0.7)	(2.3)	(2.5)	(2.6)	(3.4)	(-)
Share in transaction (%)	1.80	2.42	2.45	4.80	6.02	6.32
Shareholding (%)	4.13	8.74	9.22	10.02	11.51	10.43
Ceiling to foreigners (%)	10	10	12	15	20	23

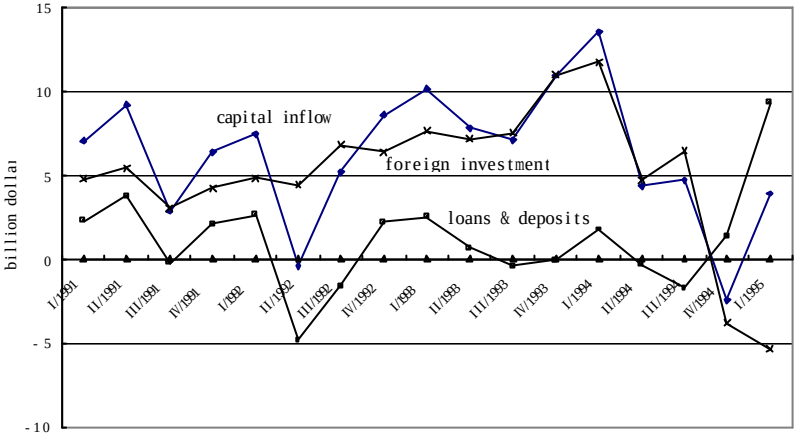
Source: Bank of Korea (1997)

On the other hand, Mexico started financial deregulation as the Salinas administration actively pursued market-oriented reform since 1989. Interest rates were liberalized, banks were privatized and the capital market was opened. Mexican law was changed in 1990, allowing foreigners to hold government bonds as Cetes and Tesobonos, and to buy (non-voting) shares in almost all sectors of the economy.

However, the Bank of Mexico had imposed in 1992 a ceiling[7] on the amount of foreign currency denominated liabilities that banks could take on, considering that the central bank is limited in its ability to act as a lender of last resort with respect to banks' external obligations in foreign currency. This policy was reflected in the composition of the capital inflow as can be seen in the [Figure 2].

7) Regulations limit foreign currency liabilities of commercial banks to 20% of total liabilities.

Figure 2, Capital Inflow: Mexico

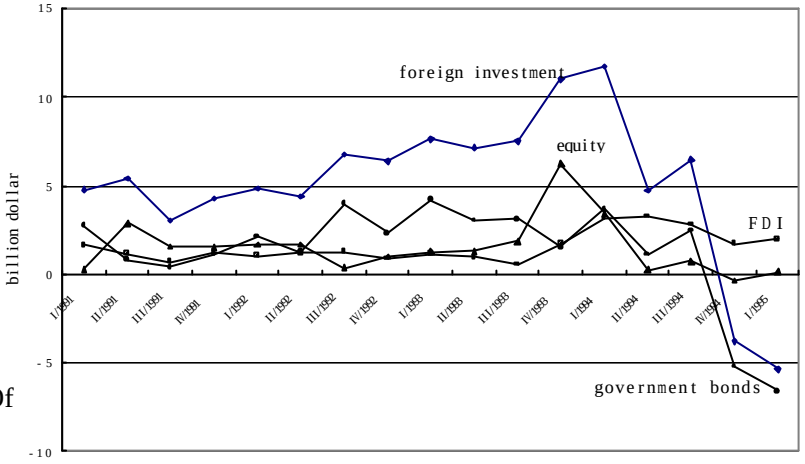


source: Banco de Mexico

The capital inflow to Mexico can be divided into foreign investment, loans and deposits. Before the currency crisis, the amount of loans and deposits were almost insignificant compared to foreign investment. Contrary to the Korean case, neither the financial sector nor the non-financial private sector was accumulating such a large amount of foreign debt.

Foreign investment, on the other hand, came in three main forms. The first was foreign direct investment, which is usually long-term because it involves commitments that cannot be reversed quickly and at low cost. As can be seen in [Figure 3], the trend of foreign direct investment in Mexico was relatively stable. Second, capital inflow took the form of purchases in the Mexican stock market. A sudden reversal of foreign buying would mainly cause a drop in stock market prices making it costly to withdraw more money from this market. The third form of capital inflow was the purchase of bonds - largely government bonds. A large portion of these securities were short-term bonds, often maturing in one to three months.

Figure 3, Foreign Investment: Mexico



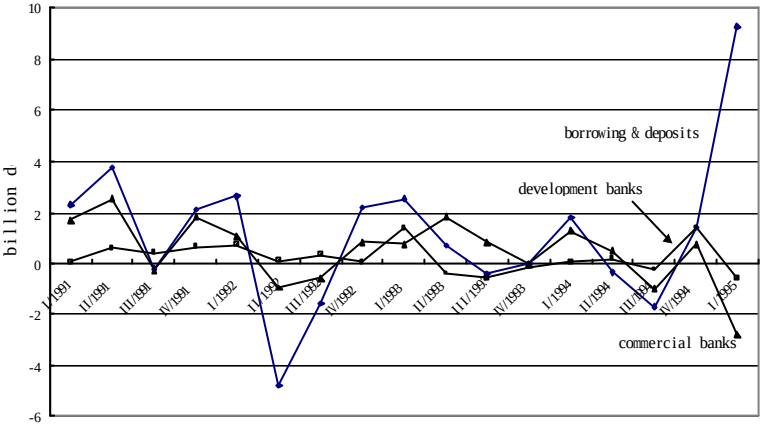
source: Banco de Mexico

Of the three forms of capital inflow, the last one probably posed the largest danger. If anything caused foreign investors to decide to pull out of Mexico, investors could simply take their money out of the country as their securities matured, putting tremendous pressures on the government's reserves within a matter of weeks. Actually, this last component was the largest in 1992 and 1993, making Mexican economy very vulnerable to internal or external shocks.

Credit Boom

The extraordinary expansion of bank credit to the private sector in Mexico between 1991 and 1993 was due to the liberalization of interest rates and the deregulation of the banking system coupled with the favorable prospects for the Mexican economy, a reduced demand for funds by the public sector and an enormous inflow of capital from abroad.

Figure 4, External Borrowing: Mexico

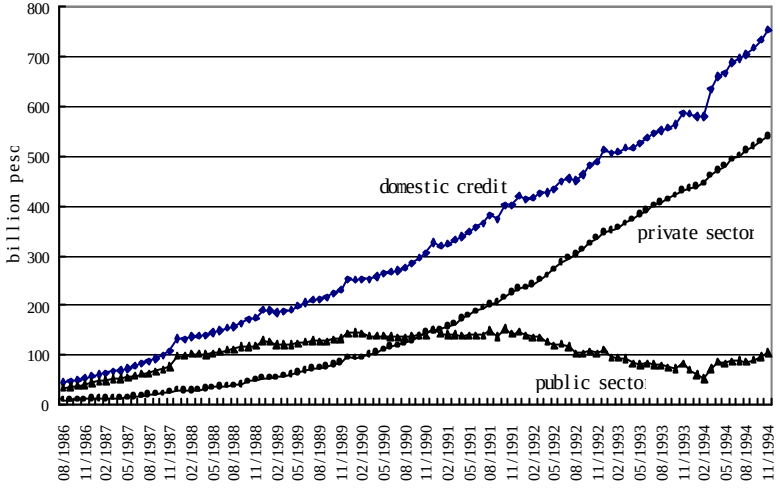


source: Banco de Mexico

But as can be seen in [Figure 1 & 5], in Mexico, domestic credit grew at a higher rate than liabilities in foreign currency including borrowing and deposits. The most important factor of the dramatic increase in the credit to private sector seems to have been the reduction in the demand for funds by the public sector [Figure 5].

The enormous capital inflow was not fully reflected in the increase of domestic credit from the banking sector because foreign investment was mainly directed towards government bonds. This means that the government not only reduced the demand for funds due to a reduced fiscal deficit, but also changed the source of funds from residents to non-residents. After foreigners were allowed to purchase Mexican government bonds in 1990, the foreign residents' share in government bond holding continuously increased to almost 70% in 1994. This is the reason why the currency crisis originated from the public sector and not from the private sector.

Figure 5, Credit Granted by Banking System: Mexico



source: Banco de Mexico

Contrary to the Mexican case, in Korea, credit expansion over the last ten years happened rapidly through merchant banks and investment trusts, and this contributed towards creating a bubble in the entire economy. As can be seen in [Table 5], financial institutions' external debt increased at a higher rate than total liabilities. The corporate sector also depended heavily on foreign borrowing.

The difference in credit expansion between Korea and Mexico was that the Korean case is characterized by a drastic increase of investment whereas in Mexico the increased bank loans were mainly for consumption purpose. In Mexico, both consumption and investment increased between 1990 and 1994, but the former increased more rapidly than the latter. Consumption and investment were 78% and 17.9% of GDP, respectively in 1990. These figures changed to 83.1% and 19.4% in 1994.

Table 5, Total liabilities of Korean Financial Institutions

(Unit: %)

	1991	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*
Total liabilities	24	21	18	27	21	19	22
External debt	54	19	28	36	19	44	75
External/Total	5.4	5.3	5.8	6.2	6.1	7.4	10.6
Corp. sec. Overseas borrowing/Tot	4.1	7.1	1.5	6.6	8.4	10.4	6.1

Source: Cho (1998).

In Korea, the increase in investment, especially in the export sector, could have implied a better management of foreign resources if the rate of return of those investments had been high enough. However, this was not the case. Korea had the lowest return on assets among the nine Asian countries between 1988 and 1996[8]. The low return on assets combined with the downturn of the economy aggravated the financial structure of the corporate firms and led to large scale bankruptcies. This has been reflected in the enlargement of the bad loans of the financial sector which provoked the run of foreign creditors against Korean financial institutions.

4.3 Capital Outflow, Banking Crisis and Currency Crisis

Before the crisis, Korean banks, especially merchant banks, had borrowed in a short-term basis and invested in a long-term basis. When the economic situation deteriorated and foreign investors tried to withdraw their money, these financial institutions had problem in meeting their

8) The nine Asian countries are: Hong Kong, Indonesia, Japan, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand. See Claessens et. al. (1998)

obligations. The Central Bank of Korea had to supply the foreign exchange out of international reserves to prevent default. Therefore, the international reserves of Korea decreased from $25 billion in June 1998 to US$8.9 billion at the end of 1997.

The lack of international reserves to meet the payment of external obligations forced Korea to enter into debt restructuring with international banks, and as the obligations were largely of the financial institutions, the restructuring was mainly with respect to these institutions' debt. By negotiation, Korea could restructure US$21.8 billion of banks' short-term debt.[9]

Whereas the currency crisis originated from financial sector in Korea, in Mexico, it did not. The direct impact of the December 1994 devaluation on Mexico's commercial banks was limited because of the restrictions imposed on foreign currency denominated liabilities, as explained before. Consequently, the capital outflow from the banking sector during 1994 and 1995, was relatively small.

In 1995, the capital account posted a $15.1 billion surplus, slightly above the $14.6 billion surplus in 1994 as can be seen in [Table 6]. Nevertheless, the capital account would have reported a $11.1 billion deficit had the resources disbursed from the international financial assistance package been excluded. The main factor would have been the amortizations of Tesobonos for $18.4 billion. Net amortizations of foreign debt by Mexican commercial banks was just $4.1 billion. The relatively small amortization of foreign debt by Mexican commercial banks was without any formal renegotiation with international creditors. Although the stock market index (IPC) experienced a drastic drop in the first months after the devaluation, this was not because of the withdrawal of foreign investment. There was no additional investment in the stock market by the foreigners, but neither was there any massive withdrawal.

9) See Bank of Korea (1998).

Table 6, Capital Account: Mexico 1994-1995

	1994	*1995*		
		I	II	Annual
Capital Account	14.6	4.6	10.6	15.1
Excluding Supports	14.6	-13.4	2.3	-11.1
Foreign Direct Investment	11.0	3.9	3.0	7.0
Foreign Portfolio Investment	8.2	-11.2	1.1	-10.1
Stock Market	4.1	0.2	0.3	0.5
Tesobonos	14.3	-10.2	-6.1	-16.3
Other	-10.2	-1.2	6.9	5.7
Loans and Deposits	1.1	13.2	10.0	23.2
Public Sector	-1.6	15.8	9.0	24.8
Financial Support	0.0	18.0	8.3	26.3
Other	-1.6	-2.2	0.7	-1.5
Private Sector	2.7	-2.5	1.0	-1.5
Commercial Banks	1.5	-4.1	-0.8	-5.0
Non-Financial	1.2	1.6	1.9	3.4
Assets	-5.7	-1.4	-3.6	-5.0
Tesobonos(Mex. Residents)	0.0	-1.1	-1.0	-2.1
Other	-5.3	-0.3	-2.5	-2.9

Source: Informe Anual 1995, Banco de México

Even if the Mexican banking sector did not suffer much from massive withdrawals by foreign creditors, it had to suffer from devaluation, higher interest rates and a drop in economic activity. But these effects appeared in a gradual process. With these damaging effects, banks' capitalization ratios continuously deteriorated.

As foreign investors withdrew their money from government bonds by selling or not rolling over the bonds, the government had to increase the interest rate to stabilize the foreign exchange market. This had a negative effect on the firms, increasing their interest payments. Additionally, the higher interest rate depressed even more the economic activity and reduced the profit of the firms. The difficulties of the firms, in turn, were

reflected in the increase in past-due loans and in the weakness of the banking sector, leading to a banking crisis.

Prudential Regulation and Supervision

Inadequate prudential regulation and supervision of financial institutions were common feature of Korea and Mexico. It is well known that in the process of financial liberalization, the lack of adequate prudential regulation and supervision can lead the financial institutions to take too much risk, and make the financial sector vulnerable to financial crisis. In both countries, the institutional reform was slow and inadequate compared to the fast financial liberalization and capital market opening, leading to the deepened distortion and also to larger exposure to external shocks.

In the case of Korea, before the foreign exchange crisis, the risk sharing relationship among the government, conglomerates, and banks increased the moral hazard, and the loose financial supervision structure and the lack of market capacity to supervise and monitor the investment behavior, aggravated the structural problems. But there was also a safety net to share the risk and to socialize the loss through the bail-out program of the government. It was possible, to an extent, to stymie the excessive investment of firms through the entry barrier by the industrial policy of the government. However, financial liberalization, capital market opening and other deregulations brought about the collapse of the existing safety net before a new mechanism was built that could restrain the moral hazard and the excessive investment.

Moreover, even with a careful approach to liberalizing the capital market and continued regulation of foreign investment in the bond market, the foreign debt structure became more concentrated in short-term debt. As a result the short-term foreign debt exceeded the total foreign reserve increasing the possibility of a foreign exchange crisis.

In the situation where the government did not regulate the entry of firms, the only possible mechanism that could prevent the excessive investment of firms were financial institutions and the capital market. However, these failed to fulfill their duty because of the moral hazard due to existing practices, the lack of transparency of the accounting structure, and the limitation of minority shareholders representation. As the government stopped intervention to the financial institutions in a period where they were in a traditional weak position with respect to the "chaebols", financial institutions were unable to restrain the excessive investment of the firms. Also even if the government had to strengthen the supervisory function of the financial institutions when the financial activities were liberalized, it did not strengthen at all the supervision of some financial institutions, especially the merchant banks, increasing the possibility of a financial crisis. Between 1992 and 1996, the ratio of short-term assets to short-term borrowing was 3~ 6% in the case of merchant banks, whereas it was higher than 80% in the case of commercial banks. This term-mismatch was one of the most important causes of the foreign exchange crisis.

In Mexico, prudence was not always the guiding criterion for Mexican banks in granting credit or for their clients in soliciting it. The nationalized banking system, which for years had directed financing mainly to the public sector, had organizational and information systems that could not adequately assess credit and market risks or monitor loan performance.[10] In addition, as the banks were reprivatized in 1991 and 1992, some new management teams, which were not in all cases experienced, took charge of the banks' lending function.

Reprivatization was accompanied by changes in the legal framework to introduce increasing competition in financial services from foreign institutions and to increase the efficiency of the financial institutions. The law, enacted in 1990, allowed conglomerate banking whereby a single

10) Banco de México (1996)

holding company could provide various financial services. The problem was that regulatory and supervisory reform needed for conglomerate banking did not follow. For example, conglomerates as a group were not required to abide by prudential regulations, nor were they required to produce consolidated financial statements.

In both the Korean and Mexican cases, the speed of liberalization of the capital market surpassed the changes of the existing regulation, increasing the structural distortion and the possibility of facing a banking crisis or foreign exchange crisis. Although an implementation plan was under development, there was not enough time to translate those plans into an actual enhancement in capacity of the supervisory system.

However, the same absence or inadequacy of prudential regulation and supervision played a different role in the foreign exchange crisis and banking crisis in Korea and Mexico. In Korea, the lack of prudential regulation and supervision is considered to be one of the most important elements that contributed to the banking crisis and the subsequent currency crisis, whereas in Mexico, inadequate prudential regulation and supervision led to a weakness of the banking sector, and this exacerbated the effects of the foreign exchange crisis. The reason for this difference can be found in the way the capital market was opened. In Korea, financial institutions were the most active participants in the international capital transactions, whereas in Mexico, banks were restricted to borrow from abroad.

Conclusion

The Mexican currency crises preceded the banking crisis, whereas, in Korea, the currency crisis was caused by the banking crisis. As both countries were in the process of financial and capital account liberalization, we can say that although currency crisis is closely related with capital account liberalization, the latter does not determine the causality between

banking crisis and currency crisis.

However, if we analyze the way the capital account was liberalized, we can find that there is close relationship between capital account liberalization and the order of banking and currency crisis. In Mexico, the capital account was liberalized largely by allowing foreign investment in the stock market and government bonds, while the borrowing of commercial banks was restricted. In Korea, the capital market was opened by allowing financial institution and firms to borrow from abroad and to issue bonds in the international capital market. The difference in the process by which capital account was liberalized partly explains why, in Mexico, the banking crisis deepened only after the currency crisis had broken out, and why, in Asian countries, the currency crisis was caused by the financial crisis.

In Korea, the lack of prudential regulation and supervision played an important role in the eruption of the banking crisis, which subsequently led to the currency crisis. In Mexico, inadequate prudential regulation and supervision strengthened the negative effects of the foreign exchange crisis on the banking sector. The policy implication is that the prudential regulation and supervision must be improved before the liberalization of the capital market even if the foreign borrowing of the banking sector remains strongly regulated. This is because the effects of the currency crisis would be instantaneously transmitted to the banking sector, and because the effects would be the stronger, the weaker is the prudential regulation and supervision.

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