

Liberalising the capital account without losing balance: lessons from Korea¹

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Introduction

The experience of Korea in the 1990s may provide useful lessons to any country contemplating the joint liberalisation of its financial system and its capital account. The country is generally thought to have pursued broadly reasonable macroeconomic policies. Its current account, while in deficit, was still less than the level of 5% of GDP that is usually perceived as a warning signal. Its underlying international position, as measured by its net international liabilities to the rest of the world, was by no means unhealthy. And yet with shock and surprise the country experienced a wrenching foreign exchange and banking crisis.

Korea entered its process of domestic financial and capital account liberalisation with the vulnerability of highly leveraged large conglomerate firms and with domestic interest rates substantially higher than international interest rates. The authorities compounded the challenge posed by these difficult initial conditions by pursuing an unbalanced course of financial liberalisation. Pricing was freed up on short-term securities more than long-term securities and on the assets and liabilities of non-bank financial firms more than banks. This shifted financing flows towards short-term instruments, increasing corporate financial fragility, and towards financial intermediaries that were barely regulated. The lack of balance in the domestic programme of financial liberalisation had its counterpart in the capital account liberalisation, which restricted foreign flows into longer-term instruments. In addition, while the scope of permitted foreign currency lending was widened, banks' longer-term foreign borrowing remained controlled. At the same time, many of the poorly regulated finance companies were allowed to enter the foreign currency lending business by converting themselves into merchant banks. Thus, the build-up of fragile financial structures externally paralleled the build-up of fragile domestic corporate finances.

This paper first characterises the domestic financial liberalisation undertaken in Korea in the early 1990s. The second section draws the implications for corporate finances in Korea. Then the third section characterises the capital account liberalisation and the fourth shows how it made Korea's external balance sheet vulnerable to a reassessment by foreign creditors. Further liberalisation of the capital account since the crisis, accompanied by prudential measures and a build-up of official liquidity to limit future vulnerability, are described in the fifth section. Finally, lessons and conclusions are drawn.

1. Domestic financial liberalisation

Financial liberalisation in Korea in the early 1990s set out to free interest rates in four stages and to encourage competition among financial institutions. The Kim Young-Sam administration of 1993-98 accelerated this process. The course of liberalisation proved not to be neutral as between institutions and term of instruments. In the event, non-bank financial institutions were favoured over banks and short-term markets were favoured over long-term markets. Bank interest rates and corporate bond yields remained under the *de facto* control of the authorities, while commercial paper yields were

¹ The authors thank San-Sau Fung for research assistance and comments by participants of the Seminar, but responsibility for any errors remains the authors' own. The views expressed are those of the authors and not necessarily those of the Bank for International Settlements.

allowed to find their own levels. The gap between intentions and policy reflected the weight of various interests that stood to gain from liberalisation, as well as the politics of monetary policy.

Unbalanced liberalisation²

The four-stage plan to liberalise interest rates announced in 1991 seemed to draw on the principles of moving gradually from long-term to short-term interest rates, from the securities market to bank interest rates, and from large- to small-denomination instruments. The final plan showed less coherence (Table 1). Moreover, actual implementation deviated in important respects. Yields on commercial paper were in principle freed in 1991, but in fact became market determined only in 1993-94. Yields on bank loans were in principle freed in 1993, but the authorities used moral suasion and administrative means to guide them until 1996. Yields on short-term time deposits were freed in 1995, but remained under control until mid-1996. Corporate bond yields were freed in 1991, but limits on issuance rationed access and thereby held yields on this most representative interest rate in check until 1997. For most of the period 1994-97, commercial paper yields exceeded those on three-year corporate bonds, which exceeded in turn prime bank lending rates.

While commercial paper, unsecured IOUs of generally less than three months' maturity, proved the favoured instrument, non-bank financial institutions proved the favoured institutions. Commercial paper was accepted by finance companies and merchant banking companies and marketed by them to final investors. Among these were investment trust companies and, after 1993, the trust accounts of banks. These issued beneficiary certificates the yields on which were in principle related to the performance of a portfolio of investments but which in practice were set *ex ante*. The gatekeepers in this process were domestic rating agencies, which were not only extremely easy graders by comparison to the international agencies, but also kept their ratings unchanged in most cases three to six months before bankruptcy (Cho (2001, pp 169-70)).

The political economy of the unbalanced liberalisation³

In retrospect, financial liberalisation in Korea could have been more carefully designed and implemented in conjunction with reform in the corporate sector (deleveraging and improvement in corporate governance) and with the development of supervisory capacity and financial infrastructure. Instead, it was implemented in a reactive way in response to internal and external pressures. In particular, several factors help explain the lack of balance in Korea's financial liberalisation of the early 1990s. First, the vested interests behind the non-bank financial firms pushed more vigorously for liberalisation than the interests behind the banks. In the 1980s, chaebol had acquired substantial control over the financial system, by owning most of the non-bank financial firms. They saw in the programme of deregulation and globalisation of President Kim Young-Sam an opportunity to gain access to more funds through their financial affiliates, in effect widening their internal capital markets. While banks had been privatised in the early 1980s, and MOF appointment of bank managers generally ceased in the early 1990s, political influence remained important in the leadership and at times lending decisions of banks. Without any large shareholders, banks did not marshal a countervailing political force to balance the lobbying of the chaebol on behalf of the non-bank financial firms.

² This section draws on Cho (2001).

³ This section draws on Cho (1999).

Table 1
Four-stage liberalisation of interest rates in Korea

	Instrument	Measures
First stage: implemented in November 1991	Deposits	<i>Banks:</i> certificates of deposit (CDs), large-denomination repurchase agreements, commercial bills and trade bills, time deposits with maturity of three years (new). <i>Non-banks:</i> large-denomination commercial paper (CP), time deposits with maturity of at least three years, time deposits of mutual savings and finance companies with maturity of at least two years, etc.
	Loans	<i>Banks:</i> overdrafts, discounts on commercial paper apart from loans eligible for Bank of Korea rediscount, overdue loans. <i>Non-banks:</i> discounts on commercial bills of trust, mutual savings and finance companies, discounts on CP and trade bills of investment finance corporation, etc.
	Bonds	Corporate bonds with maturity of at least two years.
	Deposits	<i>Banks:</i> time deposits with maturity of at least two years, instalment-type deposits with maturity of at least three years such as instalment savings, mutual instalments, etc. <i>Non-banks:</i> time deposits with maturity of at least two years, instalment-type deposits with maturity of at least three years such as instalment savings, mutual instalments, etc.
		<i>Mutual savings and finance companies:</i> time deposits with maturity of at least one year and instalment savings with maturity of at least two years, etc.
	Loans	All loans of banks and non-bank financial institutions except policy loans.
	Bonds	Corporate bonds with maturity of less than two years, financial debentures, government and public bonds.
	Deposits	<i>Partially implemented in July 1994:</i> shortened the minimum maturity of CP from 91 days to 60 days and allowed the issue of banks' cover bills. <i>Partially implemented in December 1994:</i> time deposits with maturity of less than two years and instalment savings with maturity of two years or less than three years.
	Loans	Liberalised the interest rate of loans eligible for discount with the Bank of Korea under the aggregate credit ceiling system to the extent of prime rate.
Second stage: implemented in November 1993	Deposits	<i>Partially implemented in July 1995:</i> Time deposits with maturity of six months to one year and instalment savings with maturity of one year or less than two years. Expanded short-term marketable products liberalisation (shortened the minimum maturity and lowered the minimum issue denomination).
	Loans	Loans eligible for discount under the aggregate credit ceiling system of the Bank of Korea.
	Deposits	<i>Full implementation in November 1995:</i> Time deposits with maturity of less than six months and instalment savings with maturity of less than one year, etc. Preferential savings and company savings with maturity of at least three months. Expanded liberalisation of short-term marketable products (lowered the minimum denomination).
	Deposits	<i>Banks:</i> savings deposits, preferential savings with maturity of less than three months and money market deposit account (MMDA), company savings with maturity of less than three months and MMDA. <i>Merchant banks:</i> bills issued with maturity of less than one month, trust-type securities savings. <i>Investment trusts:</i> passbooks.
		<i>Mutual savings:</i> preferential time and savings deposits with maturity of less than three months.
		<i>Mutual credits and credit unions; community credit cooperatives:</i> deregulated the maturity of short-term marketable products (CD, RP, CP, etc), the minimum denomination, repurchasing fee of trust companies, interest rate of time deposits with maturity, etc.
Third stage: from July 1994	Deposits	
Fourth stage: implemented in July 1997	Deposits	

Source: Cho (2001).

Another factor favouring the unbalanced liberalisation was the politics of monetary policy. The MOF (MOFE since 1996) took responsibility for both economic growth and monetary policy. The latter centred on the control of M2. While the deregulation of long-term time deposits led them to grow more rapidly and thereby to boost M2 growth, deregulation of the commercial paper market, non-bank financial firms' liabilities and eventually bank trust accounts all encouraged intermediation not captured by M2. Of course, controlling the growth of a given aggregate while allowing the more rapid growth of a wider aggregate is likely to alter the relationship between the targeted monetary aggregate and nominal GDP and, if unrecognised, can even frustrate the goal of inflation control. In addition, political pressure led to the retention and at times expansion of the Bank of Korea window to rediscount loans to small and medium-sized firms at preferential rates. The need to absorb the liquidity thereby created made it hard to reduce reserve requirements, which remained around 10% until late 1996, and required open market operations that constrained banks more than their rivals. Reserve requirements and absorption of Bank of Korea liabilities made it difficult for banks to compete in price even if allowed to.

The difference in the political forces backing the non-banks and the banks also worked against an improvement of supervision that should have gone hand in hand with the liberalisation. The Office of Banking Supervision, an affiliate of the Bank of Korea, supervised the banking accounts of banks, while the MOF supervised most non-bank financial firms and the trust accounts of banks with scant manpower or expertise. Bank examination focused more on checking compliance with official credit allocation guidelines than risk exposures and management. Classification of non-performing assets did not meet international standards. Bank trust departments' holdings of loans, commercial paper and bonds were not subject to the single-borrower limits that applied to banks' general accounts.

Even a vigorously pursued effort to strengthen supervision, it should be recognised, would have faced huge challenges. Given the leverage and size of the chaebol, there were limits to what the prudential management of loan portfolios could have accomplished. In addition was the perception, falsified since the crisis, that the government would keep lenders to the big chaebol whole.

2. Consequences for corporate finances

The unbalanced interest rate liberalisation had consequences for the patterns of corporate finance in Korea in the 1990s. Essentially, financing shifted into the markets and institutions least controlled by the authorities. Outside fund-raising by corporations shifted to the commercial paper market (Table 2). While commercial paper had provided firms with only 2.5% of their outside funds in 1990-92, such short-term securities represented 13.1% of outside funding in 1993-96, peaking at 17.5% in 1996.

This new financing opportunity did not present itself to all Korean businesses. It was mainly chaebol that were able to sell commercial paper. Thus, the unbalanced liberalisation and the consequent shift of corporate liabilities to the short term increased the financial fragility of the larger firms in the Korean corporate sector. Short-term paper increasingly financed long-term investment in automobile, petrochemical and heavy machinery plants. To the extent that the credit gatekeepers in the favoured chain of finance, namely the rating agencies and managers and supervisors of non-bank financial firms, screened such investment projects more recklessly than the previous gatekeepers, namely the banks, then fragility also increased as more debt was piled on equity.

Table 2
Corporate sector's financing pattern
In percent of total funds raised

	90	91	92	93	94	95	96	97	98	99	00	01
Total financing	100	100	100	100	100	100	100	100	100	100	100	100
<i>Memo:</i>												
<i>Total in KRW trillions</i>	...	...	54.9	65.0	89.0	100.2	118.8	118.0	28.4	53.0	65.8	51.9
Direct financing	42.4	37.9	41.4	52.9	38.1	48.1	47.2	37.4	178.9	50.0	28.6	70.9
Commercial paper	3.7	-3.8	7.6	13.9	4.9	16.1	17.5	3.7	-42.2	-30.8	-1.7	8.1
Bonds	21.5	24.2	12.1	14.5	14.2	15.3	17.9	23.3	165.9	-3.2	-3.2	22.6
Stocks	11.8	11.5	13.1	14.7	14.8	17.6	11.6	9.9	53.2	77.6	31.3	31.8
Indirect financing	38.4	41.8	36.3	31.4	44.5	31.8	28.0	36.8	-57.3	3.8	17.1	2.3
Banks	15.8	19.8	15.1	13.1	20.7	14.9	14.0	12.9	2.5	28.2	35.1	6.5
Non-banks	22.6	22.0	21.1	18.3	23.8	17.0	13.9	23.9	-59.8	-24.3	-18.0	-4.6
Overseas borrowing	6.4	4.1	7.1	1.5	6.6	8.4	10.4	65.6	-35.5	18.7	23.7	4.4
Other¹	12.8	16.1	15.3	14.2	10.8	11.7	14.4	20.3	13.9	27.4	30.6	22.4

¹ Includes inter-firm credit.

Source: Bank of Korea, *Monthly Bulletin*, various issues.

3. Capital account liberalisation

Korea's external accounts evolved into a vulnerable state notwithstanding a cautious approach to the liberalisation of foreign capital flows. The authorities recognised that, with strong corporate demand for funds and domestic interest rates well in excess of foreign interest rates (Graph 1), a sudden liberalisation risked massive capital inflows that could destabilise the domestic macroeconomy.

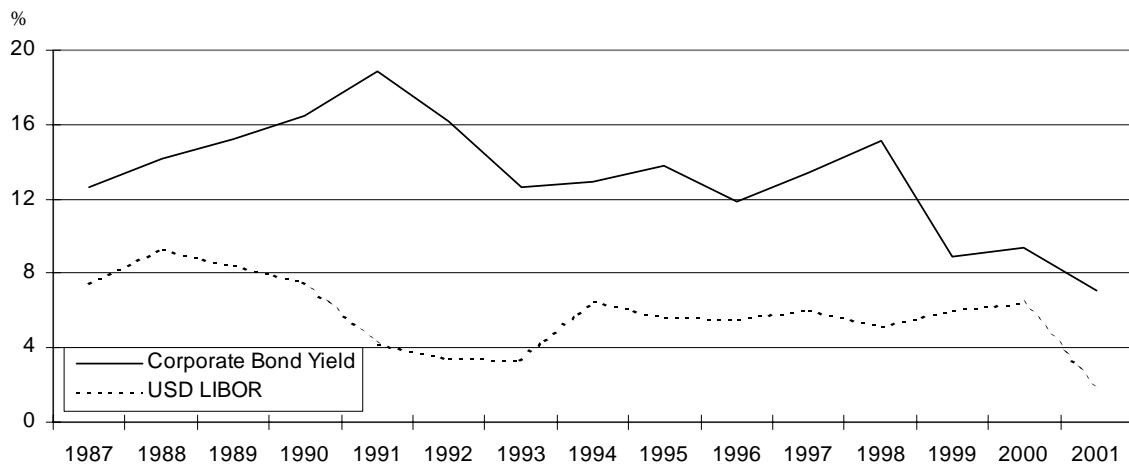
With the intention to join in the OECD,⁴ however, Korea accelerated its capital account opening in 1994. With further capital market opening, corporate treasurers built up expectations of an appreciation of the Korean won and the gradual decline of domestic interest rates to the level of foreign interest rates, and thus increased their foreign borrowing to fund domestic investment.

In opening the capital account, the government favoured Korean firms' borrowing dollars over non-residents' buying won-denominated equity or debt. The limits on foreign investments in the domestic stock market were lifted only gradually. Unlike many countries in the region, Korea had substantial government and corporate bond markets; however, foreign investment in these was strictly controlled. Only when Korea fell into crisis and agreed an IMF programme was the Korean capital market completely opened. Meanwhile, foreign borrowing at short term to finance trade was further relaxed, control over the issuance of Korean firms' securities in foreign capital market was eased and offshore borrowing was permitted. And, from early on, no significant restrictions stood in the way of foreign borrowing by Korean banks and merchant banking companies, especially short-term borrowing.⁵

⁴ See Harris (forthcoming) for an insider's account.

⁵ A broad limit on long-term borrowings was guided by the balance of payment projection (or target) of the year.

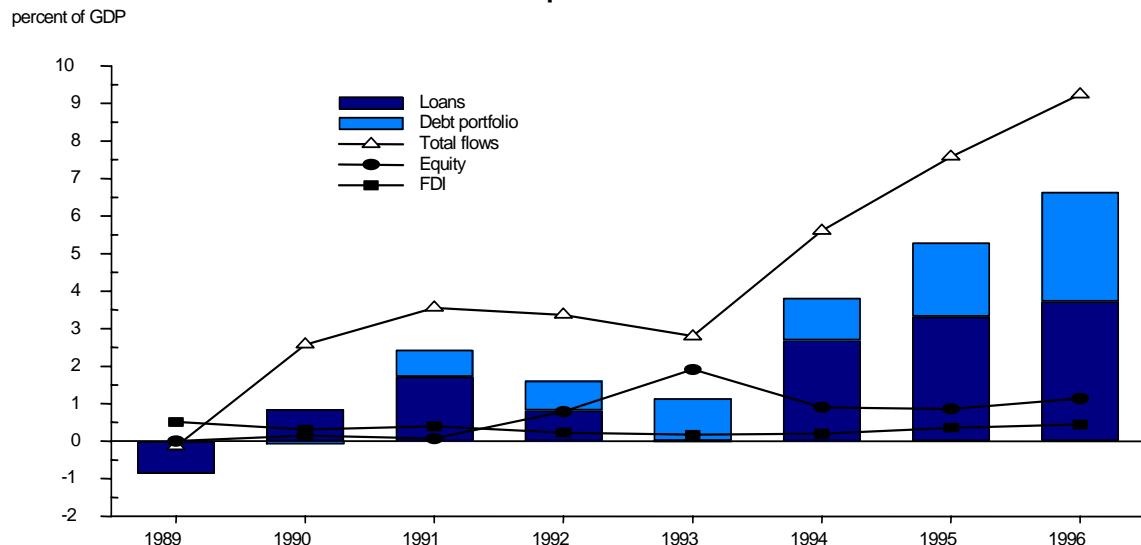
Graph 1
Gap between domestic and foreign interest rates



Source: Bank of Korea, *Monthly Bulletin*, various issues.

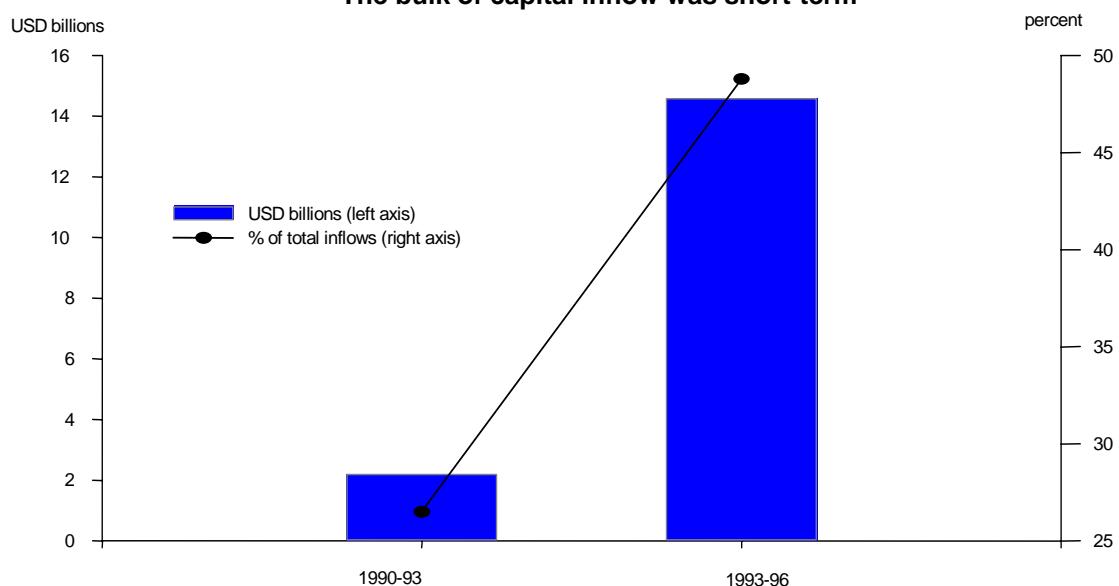
This policy created biases not only towards foreign currency borrowing, but also towards short-term foreign currency borrowing, much as the domestic liberalisation had biased corporate fund-raising to short-term instruments (Graphs 2 and 3).

Graph 2
Capital inflow



Sources: Ministry of Finance and Economy (MOFE); Bank of Korea, *Monthly Bulletin*, various issues.

Graph 3
The bulk of capital inflow was short-term



Sources: MOFE; Bank of Korea, *Monthly Bulletin*, various issues.

First, corporate sales of securities abroad faced restrictions: minimum qualifications for issuers of foreign currency securities, minimum maturities for foreign currency securities sold overseas of three years, and limits on the use of the proceeds were in place up until the crisis.⁶ These policies, perhaps defensible in themselves, contrasted with ready access to dollar loans from banks and merchant banks. Second, there was asymmetry in the deregulation schedules between the foreign currency denominated lending and borrowing by Korean financial institutions. In 1993, the Korean government expanded the positive list of purposes for which financial institutions could provide foreign currency loans. However, as regards the foreign currency funding by financial institutions, although short-term borrowing of banks was freely allowed, the government maintained quantitative restrictions on long-term borrowing as a means of capital flow management. The result was a dramatic increase in short-term foreign debts of financial institutions as they financed strong corporate investment associated with the economy's boom in 1994. Third, many new players were allowed into the business of extending foreign currency loans. A total of 24 finance companies were transformed into merchant banking corporations between 1994 and 1996, while banks opened 28 new foreign branches in the same three years. Transformation of finance companies into merchant banking corporations on a large scale meant a corresponding increase in the number of participants in the international financial markets since finance companies were not allowed to deal in foreign exchange but merchant banks were (Graph 4).

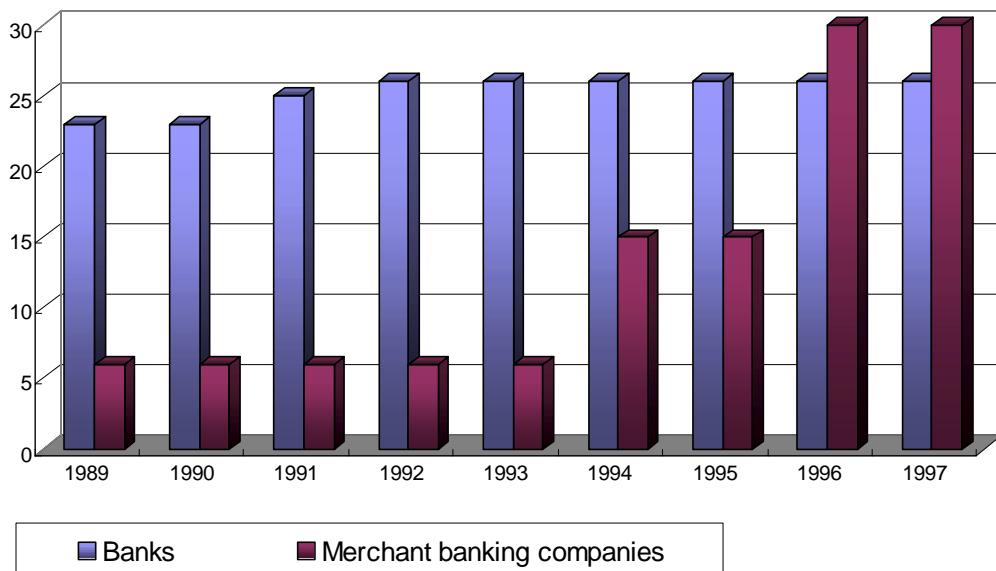
In retrospect, the capital market opening could have been more prudent. These changes in the institutional framework contributed to the strong growth in dollar lending by the financial sector after 1994 and an associated mismatch problem, with long-term dollar loans funded with short-term dollar liabilities. As the inexperienced merchant banking companies borrowed heavily in the short-term dollar money market (because the interest rates of short-term debt were lower), the competition in the foreign currency lending business in the domestic market became heated. Viewed from the domestic perspective, the dollar share of business loans rose from 13% in 1992 to 18% in 1996 (sixth column of Table 3). This perspective, however, does not include the offshore borrowing that was liberalised in the 1990s. Taking into account loans booked offshore (and reported by BIS area banks), the fraction of loans to Korean businesses denominated in foreign currency rose from 20% in 1992 to 28% in 1996.⁷ In the Latin American context such a development has come to be known as financial

⁶ See Financial Stability Forum, Working Group on Capital Flows (2000, p 53).

⁷ The rise in the ratio in 1997 is heavily influenced by the depreciation of the Korean won at the end of the year.

dollarisation.⁸ Such a degree of dollarisation of the liabilities of the Korean corporate sector, in itself, might not have been imprudent in view of the openness of the Korean economy, with exports equal to a third of GDP.⁹ But banks and merchant banking companies were increasingly accumulating long-term assets in foreign currencies financed by short-term liabilities.

Graph 4
Number of financial institutions



Source: MOFE.

Of course, an appropriate strengthening of the supervisory structure could have prevented such an accumulating maturity mismatch in foreign currency. But reform of supervision was gradual, at best. The Office of Bank Supervision introduced a belated guideline for matching foreign currency liabilities with foreign currency assets of a given maturity only in June 1997. Such guidelines had been used by the French and Japanese authorities to enforce a lengthening of dollar liabilities in the wake of the debt crisis of the early 1980s, which lengthened dollar claims on Latin America (McCauley (1984)). The MOFE, the supervisory authority for merchant banking companies, had not established any measure to deal with the problem until the eruption of the crisis (Shin and Hahm (1998)). Moreover, the lack of prudential regulations on the merchant banking companies' operations was not confined to supervision of foreign currency liquidity. Basic regulations such as capital adequacy ratios did not apply and the MOFE's oversight capacity was extremely limited. Indeed, after the crisis, some merchant banking companies were found to have committed fraud (Shin and Hahm (1998)).

⁸ In this case liability dollarisation. See Levy Yeyati and Sturzenegger (2002).

⁹ With high corporate leverage, however, exchange rate depreciation can raise debt above accounting values for assets and create distress before cash flows have a chance to rise in response to the depreciation.

Table 3
Foreign currency loans to Korean non-banks
Year-end value, in KRW trillions

	Domestically booked foreign currency loans	Offshore booked loans to Korean non-banks	Total loans of deposit money banks in Korea	Business loans of deposit money banks in Korea ¹	Onshore foreign currency loans/total domestic loans (%)	Onshore foreign currency loans/business loans (%)	All foreign currency loans/all loans (%)	All foreign currency loans/all business loans
	A	B	C	D	A/C	A/D	A+B/B+C	A+B/B+D
1992	10.3	6.8 ²	102.8	79.9	10.0	12.9	15.6	19.7
1993	10.4	7.0 ²	115.1	87.0	9.1	12.0	14.3	18.5
1994	13.5	8.8 ²	135.9	99.3	10.0	13.6	15.4	20.6
1995	17.7	11.4	152.5	111.0	11.6	15.9	17.7	23.8
1996	23.0	16.8	177.2	127.0	13.0	18.1	20.5	27.7
1997	38.6	25.8	200.4	141.9	19.3	27.2	28.5	38.4
1998	29.3	13.7	200.3	144.8	14.6	20.2	20.1	27.1
1999	18.4	13.1	250.2	171.1	7.4	10.8	12.0	17.1
2000	15.2	13.0	310.8	201.9	4.9	7.5	8.7	13.1
2001	8.3	16.4	357.4	199.8	2.3	4.2	6.6	11.4

¹ All loans excluding household loans. Household loans are assumed to be denominated in Korean won only. ² Estimated using average loans/assets ratio in BIS data from 1995 and 1996.

Sources: CEIC (columns A, C and D); BIS (column B); authors' estimates.

There was, however, a fairly crude liquidity regulation of Korean banks' foreign currency books, and its evolution in the 1990s is telling. Korean banks had been required to maintain long-term dollar liabilities in excess of 60% of the total dollar liabilities. Facing competition from the newly entered merchant banking companies in the foreign currency lending business, the commercial banks lobbied hard for the authorities to relax this foreign currency liquidity requirement. In 1994 this ratio was reduced from 60% to 40%. As a result, not only did the foreign debt increase rapidly but also its structure became more short-term from 1994 (see below).

In retrospect, relaxed standards for managing foreign currency liquidity left the Korean banks very vulnerable to a change in creditor banks' perceptions of risk. What is often overlooked is that the cost to the Korean banks of insurance against such a change in perceptions and consequent liquidity problems was not large in the mid-1990s. From BIS data derived from Dealogic Capital Data, we have identified 60 dollar-denominated floating rate notes sold in international markets by Korean banks and merchant banking firms. The additional cost of extending maturities on these issues (unlike the cost of fixed rate issues) is readily measured as the spread over the floating rate base, generally three- or six-month Libor. For the 50 issues sold in 1991-97, the average spread was about 43 basis points (Table 4).¹⁰ For this premium, a Korean bank could replace an interbank deposit that might be withdrawn at maturity in a month or two with an instrument with a stated average life of four years, and an average life to the put (which would be exercised by holders under adverse circumstances) of three years. Even merchant banks, with riskier assets, less capital and weaker supervision, were able to market such dollar paper, albeit at wider spreads and shorter stated and effective maturities. In other words, the maturity structure of Korean banks' dollar liabilities was not imposed by the global interbank market, but was a choice subject to the premium. Korean banks could have exploited the readiness of

¹⁰ Additional issuance fees, not reported in our source, might add another 10 basis points to the all-in costs.

international banks to provide medium-term credit at modest cost to guard against the same international banks' change of judgment.

The importance of supervision can be readily appreciated: if a single bank chooses to solidify more of its dollar liabilities, it will earn lower (initial) profits on its dollar loans or have to charge higher spreads over Libor than its less liquid competitors. The authorities have a particular interest in promoting self-insurance if there is a chance that they will be called upon to provide foreign currency liquidity in extremis.

Table 4
Dollar floating rate notes issued by Korean banks, 1991-2001

	Number	Amount (USD millions)	Spread (basis points)	Maturity (years)	Maturity to put (years)
1991	6	240	42.3	3.0	3.0
1992	2	90	50.0	3.0	3.0
1993	1	100	37.5	5.0	3.0
1994	7	705	33.1	4.7	3.7
1995	6	660	29.3	3.1	2.4
1996	23	1,975	48.7	5.8	5.3
1997	5	280	57.1	4.4	2.7
1998	0	0	.	.	.
1999	3	200	328.8	4.0	3.3
2000	6	671	36.5	2.4	2.1
2001	1	150	160.0	3.0	3.0
Total	60	5,071	63.4	4.5	3.9
<i>Memo: pre-1998</i>	50	4,050	42.8	4.8	4.1
<i>Memo: Merchant banks</i>	13	640	53.0	3.9	3.1

Sources: Dealogic Capital Data; BIS; authors' calculations.

4. Implications for Korea's external accounts

The unbalanced nature of Korea's domestic financial liberalisation, reinforced by an unbalanced opening of the capital account, left Korea vulnerable to a change in risk perceptions or risk appetite by its external creditors. Starting in early 1997, a string of corporate bankruptcies raised questions about the asset quality of Korean banks and thus about the risk of rolling over interbank advances to them. Events elsewhere in Asia reinforced the effect of greater perceived risk with reduced appetite for risk in the region.

Korea's international balance sheet

Korea's reliance on short-term debt was very evident in its national balance sheet. Korean data showed an increasing reliance on short-term debt by both the banking sector and the corporate sector up to 1996 (Table 5).

Table 5
External debts by sector
 In USD billions

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001 ¹
Public sector	5.6	3.8	3.6	3.0	2.4	18.0	36.5	29.5	28.3	20.8
Long-term	5.6	3.8	3.6	3.0	2.4	18.0	36.5	29.5	28.3	20.8
Short-term	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Corporate sector	13.7	15.6	20.0	26.1	35.6	42.3	41.2	46.6	52.6	54.1
Long-term	6.5	7.8	9.0	10.5	13.6	17.6	29.4	29.9	30.4	34.9
Short-term	7.2	7.8	11.0	15.6	22.0	24.7	11.8	16.7	22.2	19.2
Financial sector	23.5	24.4	33.3	49.3	66.7	60.5	71.0	61.0	50.8	42.8
Long-term	12.2	13.0	13.9	19.6	27.7	33.9	52.1	38.5	25.1	22.9
Short-term	11.3	11.4	19.4	29.7	39.0	26.6	18.9	22.5	25.7	19.9
Total	42.8	43.9	56.8	78.4	104.7	120.8	148.7	137.1	131.7	117.7
Long-term	24.3	24.7	26.5	33.1	43.7	69.6	118.0	97.8	83.8	78.5
Short-term	18.5	19.2	30.4	45.3	61.0	51.2	30.7	39.2	47.9	39.1
Total/GNP (%)	14.0	13.3	15.1	17.3	21.8	27.5	47.6	34.2	28.7	27.9
<i>Memo: Total assets</i>	...	...					128.5	145.4	164.7	162.8
<i>Memo: Net assets</i>	...	...					-20.2	8.3	33.1	45.2

¹ Preliminary.

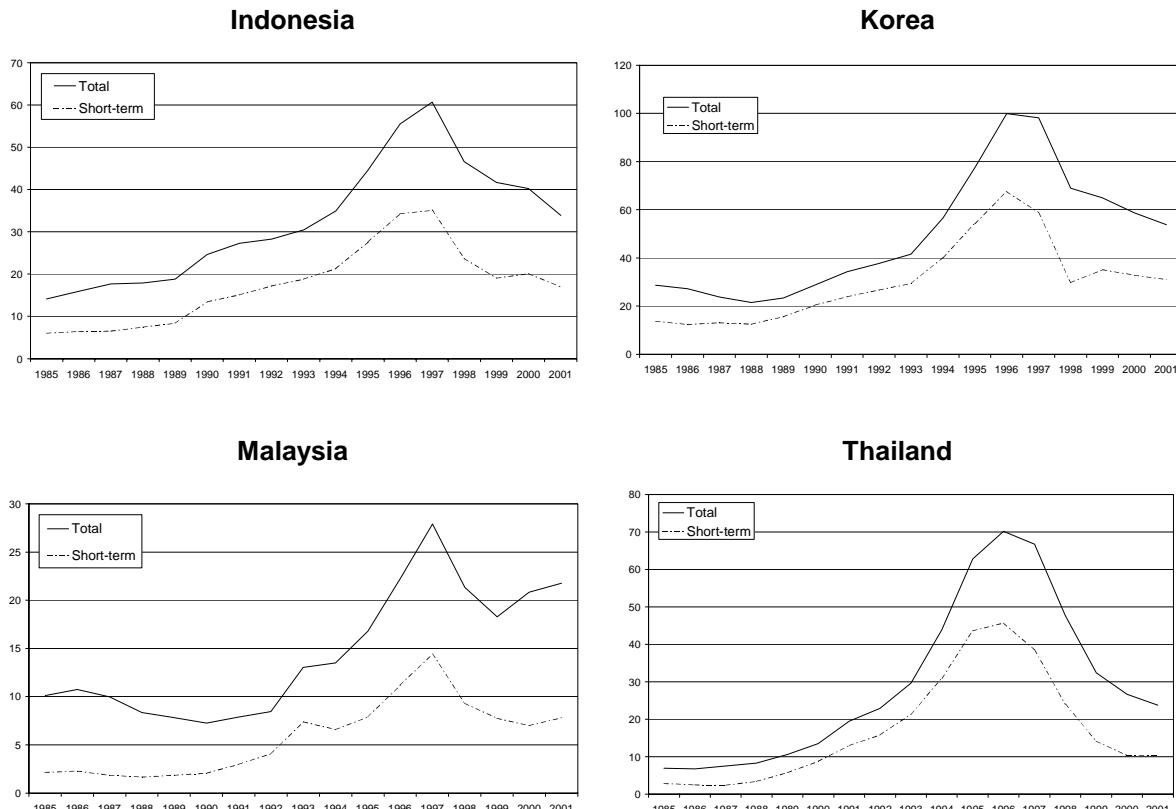
Sources: Bank of Korea; Ministry of Finance and Economy.

Korea's short-term debt to international banks, as captured in the BIS international banking data, accelerated in 1994 with the capital account liberalisation measures described above (Graph 5). It is important to note that the share of short-term debt, taken in isolation (Graph 6), does not signal vulnerability. In the case of Korea, long-term debt was paid down in the late 1980s as Korea ran large current account surpluses. Thus, the increased short-term debt ratio was due to the prepayment of long-term debt rather than an increase in short-term debt. While the ratio of short-term debt reached a high level in the late 1980s, it did not signal great vulnerability. The ratio's significance changed in the 1990s. However, during this period, total debt was increased rapidly, mainly through the increase in the short-term debt. The floating rate notes sold by Korean banks in 1996 improved the maturity profile marginally that year - a step in the right direction, but in the event too little and too late.

Korea's offshore debt

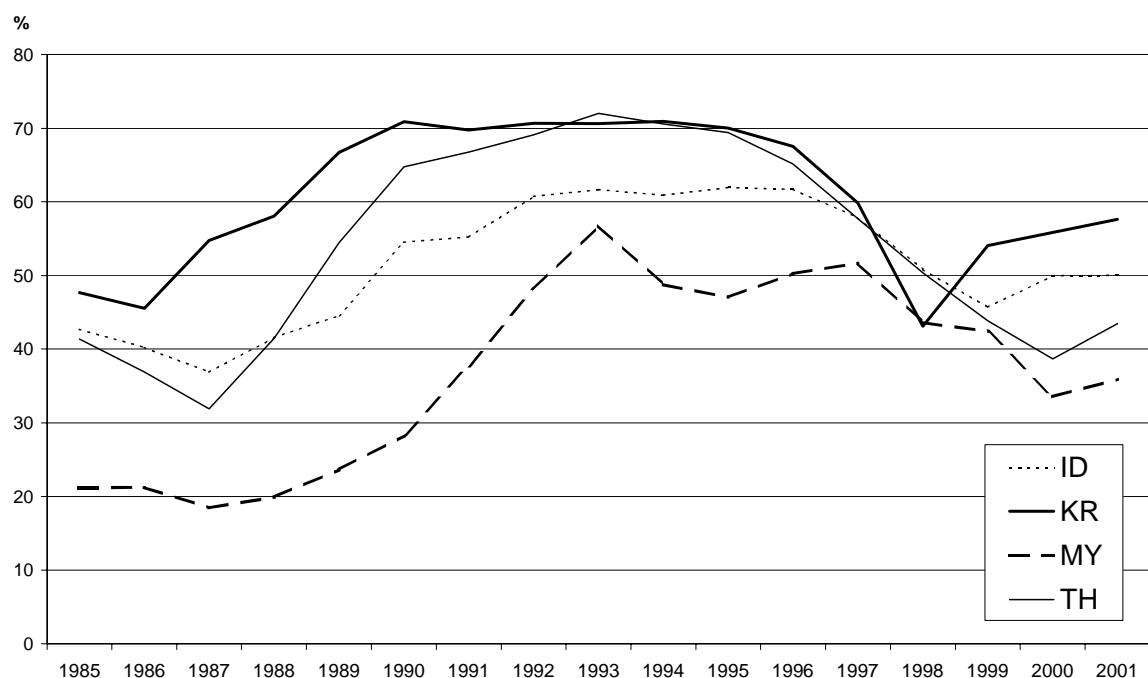
Compounding Korea's external financial vulnerability that resulted from heavy reliance on short-term debt by Korean banks and firms *in Korea* was the financing of their *offshore* operations. The scale of these offshore debts, and their short-term composition, came to light at the worst possible time in early December 1997 when a Korean newspaper reported that maturing debt over the next year was USD 116 billion, not USD 65 billion, when debts of Korean banks and companies offshore were included (Blustein (2001, p 182)). Some idea of the scale of these offshore debts could be gathered from US banking statistics and the balance sheets of Korean subsidiaries in the United States.

Graph 5
Maturity of foreign claims of BIS reporting banks on individual countries
 In USD billions, 1985-2001



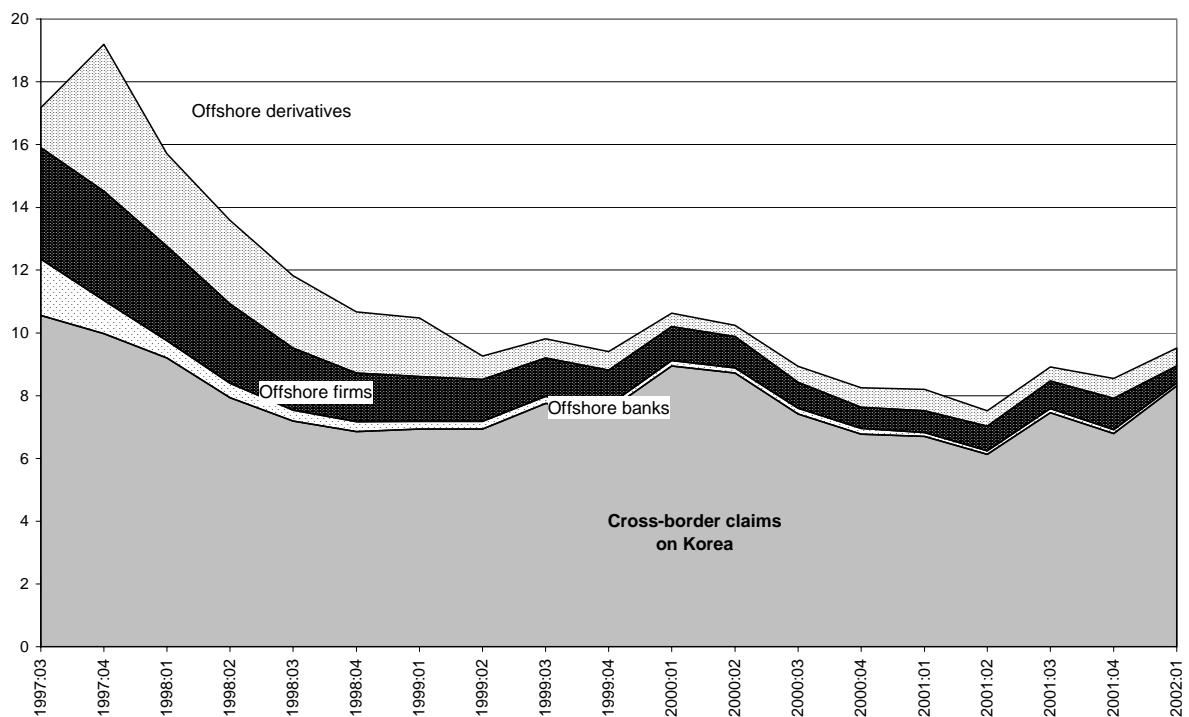
Source: BIS.

Graph 6
Short-term foreign claims of BIS reporting banks on individual countries
 1985-2001, as percentages of total claims



Source: BIS.

Graph 7
US banks' exposure to Korea
In USD billions



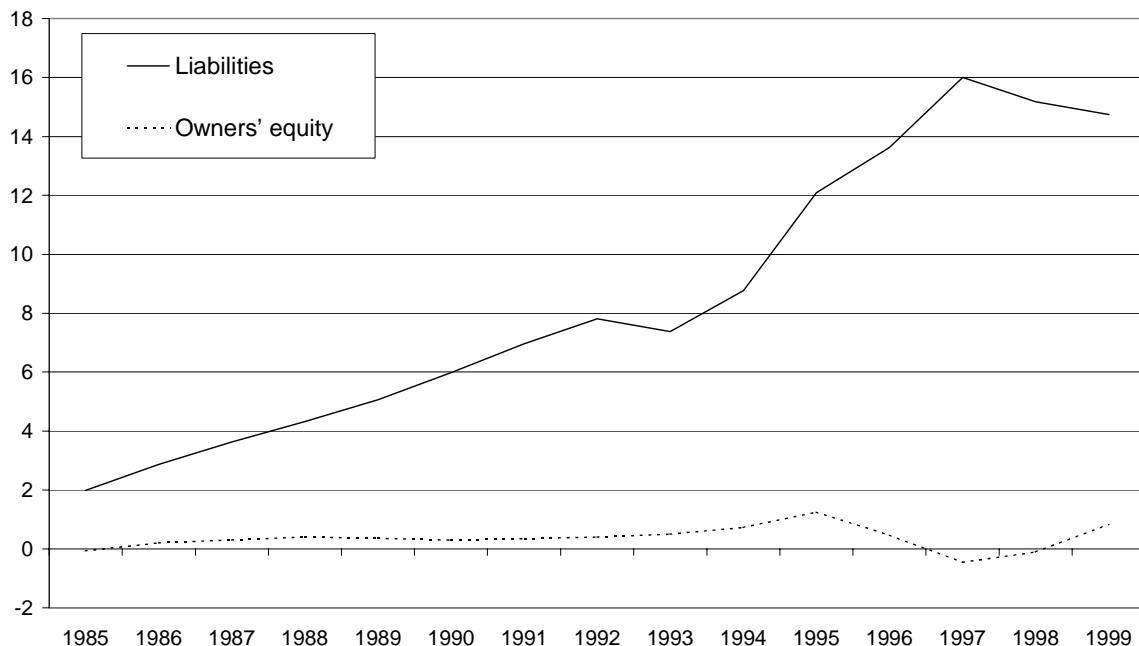
Source: Federal Financial Institutions Examination Council, *Country Exposure Lending Survey*.

In mid-1997, when US banks tallied their exposure to Korea, claims on Koreans that are not resident in Korea loomed large.¹¹ US banks had almost as large offshore claims as cross-border claims (Graph 7). Moreover, some of these claims got much larger with the financial turbulence. Changes in financial prices on which derivative contracts were based, including the Korean won's exchange rate and Korean interest rates, increased US banks' claims on Korean banks and corporations (Ruud (2002)). In many cases, the contracts would have called for the posting of collateral. Thus the rise in derivative claims, as well as the decline in interbank advances to Korean banks in Hong Kong, London and New York, both tended to increase the Korean banks' and firms' need for dollar liquidity.

The balance sheets of Korean firms' subsidiaries in the United States also indicate financial vulnerability (Graph 8). While no breakdown of debts by maturity is available, Korean subsidiaries in the United States relied almost entirely on debt rather than equity.

¹¹ The US data are shown not because there was anything special about US claims but rather because the US authorities started to publish the offshore derivative exposures before other authorities. In the aftermath of the Asian crisis, central banks contributing consolidated international banking claims agreed to pool their exposure data. These add to cross-border claims the offshore exposures shown in Graph 7 (which are guaranteed by Korean residents) and take out claims on Korean residents that are guaranteed by residents of other countries. The latter include, for example, claims on the branch of a non-Korean bank located in Korea and claims on a Korean airline that are guaranteed by an export credit agency in the G10. "Consolidated banking statistics on an ultimate risk basis with a detailed sectoral breakdown and including off-balance sheet positions will begin to be published in 2005..." (Wooldridge (2002, p 90)). See also BIS (2000).

Graph 8
Financing of Korean direct investment in the United States
 In USD billions



Source: US Department of Commerce, *Foreign Direct Investment in the United States: Operations of US Affiliates of Foreign Companies*.

5. Post-crisis liberalisation

The post-crisis period has seen almost complete liberalisation of Korea's capital account accompanied by a strengthening of prudential standards and a huge improvement in national foreign exchange liquidity. New prudential standards have included regulations on banks' maturity mismatches in their foreign currency assets and liabilities. With substantial current account surpluses and intermittent inflows of foreign capital into Korean equities, the Korean private sector has paid down its foreign currency debt, with cross-border debt to BIS area banks falling by almost one half between 1997 and 2001. At the same time, the striking rise in official foreign exchange reserves has left Korea with a very liquid international balance sheet.

Following the crisis of 1997-98, the Korean authorities relaxed most of the remaining restrictions on capital account transactions (Chung (2000)). Foreign investment in equities was freed in May 1998. In June 1998, minimum qualifications for issuers of foreign currency securities and restrictions on the use of the proceeds were dropped. In the following month, minimum maturities for foreign currency borrowing and for foreign currency securities sold overseas were reduced from three years to one year.

In contrast to the other three countries most caught up in the Asian crisis, Korea has substantially liberalised its foreign exchange market. The new law that took effect in April 1999 marked the transition from specifically allowed to prohibited transactions (ie, from a so-called positive list to a negative list). An offshore non-deliverable forward (US dollar-settled) market still exists, but arbitrage between it and the onshore spot foreign exchange and money markets generally keeps onshore and offshore yields in line (McCauley (2001, p 34)). Prohibitions on non-resident deposits in won of less than one year's maturity were removed in January 2001. Safeguard clauses in the new law, which have not been invoked at the time of writing, allow a reversion to previous controls and imposition of reserve requirements on inflows.

While foreign investment in Korean bonds was opened in July 1998, it remains very small: the Bank of Korea's flow of funds accounts show that the rest of the world holds less than 1% of government and corporate bonds, as compared to a quarter of equities.¹² Thus, Korea's bond market crises of 1999-2000 were very much domestic affairs, reflecting the joint fragility of major chaebol financing and non-bank financial firms. In particular, two major chaebol resisted government policies requiring them to deleverage and financed themselves through loosely regulated securities investment trusts. Eventually, the financial distress of Daewoo and some Hyundai affiliates set off runs on the non-banks and led to a seizing-up of the bond market (Cho (2002a,b)). Just as the earlier financial liberalisation had favoured non-bank financial intermediaries, so, too, the post-crisis reforms concentrated on the banks and allowed much credit to flow through vulnerable non-banks.

Korea's reconstituted prudential authority, the Financial Supervisory Commission, has introduced regulations to limit the maturity mismatches in banks' foreign currency books. In particular, foreign currency assets of less than three months' maturity must cover a minimum of 80% of such liabilities, while such assets maturing in a month must cover 90% of corresponding liabilities and such assets maturing in seven days must more than cover corresponding liabilities. Foreign currency assets of over three years' maturity must be at least half matched by liabilities of similarly long tenor.

The liquidity of Korea's international balance sheet has improved very markedly since onset of the crisis. There was first an unprecedented decline in BIS area bank claims on Korea in the first quarter of 1998, and then a USD 14 billion exchange of short-term debt for debt maturing in two or three years (Kim and Byeon (2001)).¹³ With investment spending by Korea's corporate sector relatively low, it has used its financial flexibility to pay down its foreign currency debt, both that booked onshore and especially offshore (Tables 2 and 3 and Graphs 5 and 7).¹⁴ At the same time, official foreign exchange reserves have risen from effectively near zero in the crisis to more than USD 110 billion.

Korea's national liquidity position appears comfortable from a number of perspectives. One common comparison is between short-term debt and foreign exchange reserves, and reserves have risen from a small fraction to twice short-term debt reported by BIS area banks (Graph 9). Of course, such a comparison juxtaposes official liquidity and private debt, and implicitly presumes that the private sector has a claim on, or can count on the backstop of, official reserves. This raises the issue of the moral hazard: if the private sector can count on foreign currency liquidity "insurance" from the public sector, will not its incentives to manage its own foreign currency liquidity prudently be undermined?¹⁵ One way of viewing the prudential measures just outlined is that they represent an attempt to require banks to invest in liquidity self-protection in order to limit the moral hazard.

Official foreign exchange liquidity might be subject to demands from other directions. In Korea, analysts sometimes take a portion of the foreign portfolio investment in Korean equities - often, drawing on the 1997-99 experience, 20% - as a potential capital outflow that might need to be financed in adverse circumstances. Argentina's recent crisis has highlighted the potential for deposits of dollars (or other foreign currency) in the local banking system to be withdrawn in adverse circumstances.¹⁶ Thus, one could add local dollar deposits to short-term cross-border debt to obtain a more comprehensive measure of potential liquidity needs. On this broader measure, Korea's liquidity position still appears very comfortable.

¹² Taxes on interest receipts limit the appeal to non-residents. See Patel and Hohensee (1999, p 25).

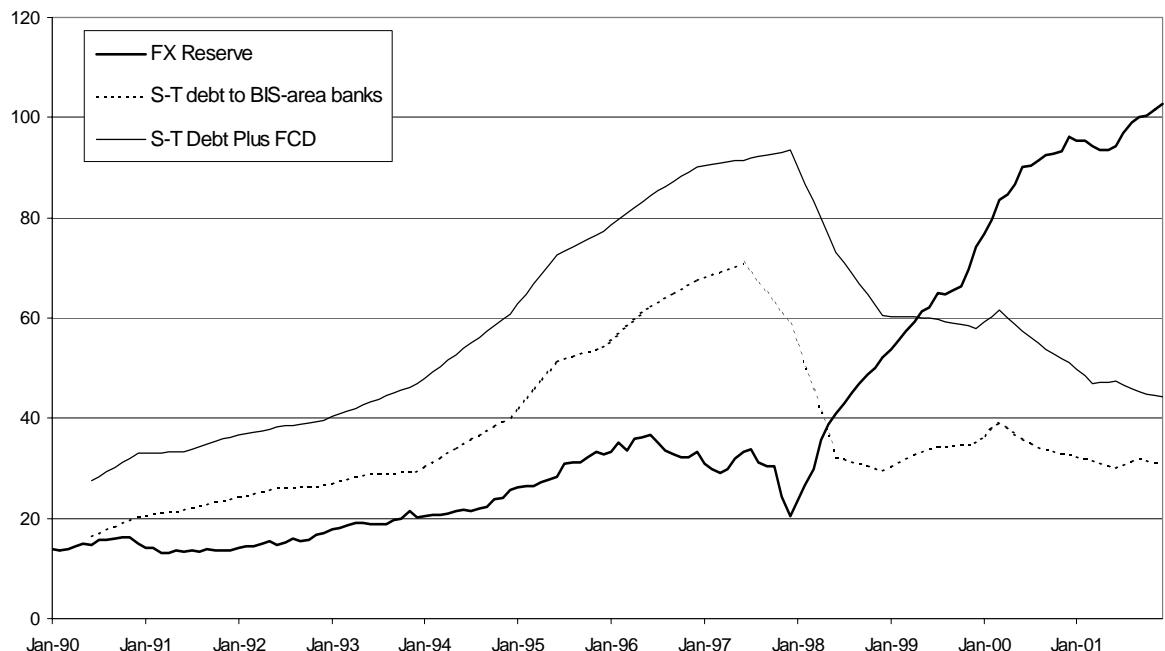
¹³ It is not obvious from Kim and Byeon how the USD 16.5 billion reduction of BIS-area bank claims on Korea, of which only USD 2.5 billion was against the non-bank sector, was consistent with the terms of the exchange.

¹⁴ There is no implication from Table 3 that foreign banks have disengaged from the Korean bank loan market. Foreign banks in Korea, as elsewhere, are increasingly engaged in lending won. See McCauley et al (2002).

¹⁵ See Hawkins and Turner (2000) for a discussion.

¹⁶ Korea's experience during the crisis, however, was a rise in demand for such deposits, consistent with findings for Taiwan of Fung and McCauley (2001) that depreciation of the home currency leads to a rise in demand for foreign currency deposits.

Graph 9
Korea's foreign exchange reserves and short-term debt
 In USD billions



Sources: Bank of Korea; CEIC; BIS.

6. Lessons and conclusions

Financial and capital account liberalisation raises the stakes associated with vulnerabilities in corporate finances and the financial system. If a country's corporate governance system imposes weak constraints on managers who rely heavily on debt to finance asset growth, financial and capital account opening risks relaxing financial constraints. The results can prove to be more reckless investment and more fragile corporate finances. These can leave an economy and its banks more exposed to weakening revenues in the down phase of the business cycle. To the extent that foreign creditors have lent at short term, they can react by withdrawing their funds in a manner that can precipitate a crisis.

Specific lessons to be drawn include:

- Domestic financial deregulation and capital account liberalisation may be dangerous in the presence of high leverage in the corporate sector, poor corporate governance and weak supervision.
- Long-term financial instruments should be liberalised before short-term ones to avoid a rapid expansion of short-term financing and a deterioration of corporate financial structure and the country's international balance sheet.
- Maintaining balance in liberalisation is important with regard not only to the maturity of instruments but also to the type of financial institution. Banks should receive comparable treatment to that accorded to the non-bank financial sector.
- The authorities should recognise the externalities of the banks' and the corporate sector's reliance on short-term foreign currency debt and take steps to limit it. Such prudential measures make it possible for the official sector to ensure that foreign exchange reserves are adequate in relation to potential national liquidity needs.

- When foreign creditors total up their exposures to a country, they add in their exposures to domestic banks' and firms' offshore operations. Thus, the authorities need to at least keep an eye on the offshore financing activities of the banking system, non-bank financial firms and the corporate sector.

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