

**Bad Credit Equilibria with the Abnormally  
Utilized Commercial Paper:  
A Catalyst of the Korean Currency Crisis\***

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The paper shows why and how the excessive use of commercial paper by financial institutions and corporations contributed to the vulnerability of the Korean economy to external shocks. We review the unfolding process of the Korean currency crisis, focusing on the role of the commercial paper. We examine how the excessive utilization of commercial paper led to bad credit equilibria in both financial and corporate sectors. We investigate the underlying institutional and market factors leading to the abnormal utilization of commercial paper before the Korean currency crisis erupted in November 1997. The factors identified are: interest rate differentials between the commercial and merchant banking sectors; relatively lax regulation in the commercial paper market; corporations' preference of debt financing over equity financing due to the concerns of ownership, tax subsidies and sluggish equity market; and lack of good credit rating agencies.

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## 1. INTRODUCTION

Although the essence of the Korean currency crisis was a sudden reversal of capital flows, the Korean economy was already exhibiting bad credit equilibria due to a number of structural weaknesses in both the financial and corporate sectors before the currency crisis broke out in November 1997.<sup>1)</sup> A substantial slowdown in exports since 1996 caused continuing bankruptcies of large chaebols and other financial crises. Furthermore, bad credit then led the Korean to fall into the full-scale economic crisis by January 1998, only two months after the eruption of the currency crisis.

Financial market liberalization that was begun in 1993 resulted in financial institutions and corporations exploiting the CP market. However, this high concentration on commercial paper increased their riskiness, particularly for the 6-30<sup>th</sup> largest chaebols, and merchant banks. Moreover, after capital market liberalization in 1993-94, the financial institutions raised huge amounts of short-term funds offshore, and then lent them to the chaebols. These resulted in both real and financial sectors highly exposed to external shocks. Large chaebols such as Hanbo, Sami, and Kia, which heavily relied on CP to finance their low profit investments, eventually declared bankruptcy.

Despite its significance, there are only a few studies on why and how commercial market was excessively used, and how this made the Korean economy extremely vulnerable to external shocks. In this paper, we investigate the underlying institutional problems and domestic market factors of the abnormal utilization of commercial paper before the currency crisis erupted in November 1997. In addition, we show how this abnormality led the economy to bad credit equilibria, making it extremely vulnerable to swings of sentiments in the international capital markets. We also hope that the findings of this paper will provide some insight as to why and how large maturity mismatches and excessive short-term foreign capital borrowings happened in Korea.

Bisignano (1999), Borensztein and Lee (1999), Chang, *et al.* (1998), Kawai

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1) As for structural weaknesses, high wage, high rent, appreciation of won, the high debt-equity ratio with low profitability in Korean firms, and huge bad loans in Korean financial institutions are often noted.

(1998), Kim (1998), Radelet and Sachs (1998), Rodrik and Velasco (1999), and Taylor (1998) have pointed out that lax supervisions and moral hazards led the Korean merchant banks, the principal financial intermediaries in the commercial paper market, to borrow excessive short-term capital offshore, triggering the currency crisis. However, these studies did not systematically analyze the institutional and market factors causing the abnormal utilization of commercial paper and its consequences to the Korean economy.

This paper is organized as follows. Chapter 2 reviews the unfolding process of the Korean currency crisis, focusing on the role of the commercial paper market in the crisis. Chapter 3 will examine how the excessive utilization of commercial paper led to bad credit equilibria in both financial and corporate sectors. Chapter 4 analyzes the underlying institutional and market factors of the abnormal utilization of commercial paper by Korean commercial banks, merchant banks and corporations and its implications to the Korean economy. Finally, Chapter 5 concludes and draws some policy implications.

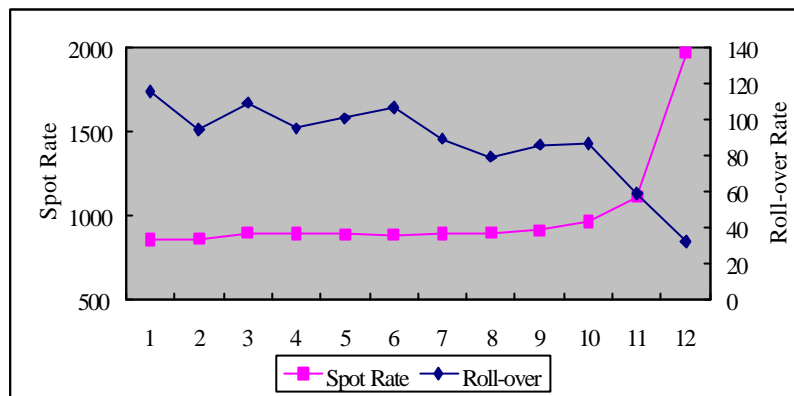
## **2. THE UNFOLDING PROCESS OF THE KOREAN CURRENCY CRISIS AND THE COMMERCIAL PAPER MARKET**

Since January 1997, the Hanbo Group, the Sammi group, and the Hanshin Construction Company have gone bankrupt under the weight of massive debt, leaving 1.86 trillion won of bad loans. Spirits vendor Jinro and textile giant Daenong were in receivership after defaulting 1.8 trillion won. On July 15th, one of the country's top three automaker, Kia Group, defaulted on 12.3 trillion won in debt. The corporation later had to go into court receivership.

These defaults by large chaebols resulted in a severe cash crunch in the Korean banking system. By September 1997, the total amount of bad and non-performing loans in deposit banks reached 28.5 trillion won. Merchant banks were also in serious trouble – they had over 8 trillion won of bad loans, including 1.2 trillion won to Jinro; 4.2 trillion won to Kia group; and staggering losses in Southeast Asian countries. It was alleged that the bad loans could wipe out the aggregate capitalization of some merchant banks.

For example, the bad loan to the Kia group accounted for 183.6 percent of the

**Figure 1 Exchange Rate and Roll Over Rate of Foreign Debts in 1997**



Note: 1) Rollover rate of foreign debts in eight large commercial banks available from Bank of Korea.  
 2) Spot Rate (won/U.S.D) at the end of the month. In the cases of November and December, the spot rates of November 28 and December 23 were used.

aggregate capitalization of eight merchant banks based in Seoul, and 75.1 percent of sixteen regional ones. With Kia Group defaulting, Korean commercial banks, the largest buyer of commercial paper, refused to purchase and discount the paper dealt and issued by them.<sup>2)</sup>

International credit rating agencies began to downgrade credit ratings of Korean banks. After Moody lowered the government-owned Korea Development Bank's rating on July 30, 1997, Korean banks and corporations found it increasingly difficult to borrow from abroad (see Figure 1).

As a result, commercial banks, merchant banks, and corporations returned to the domestic financial and foreign exchange markets to raise funds. The commercial banks recalled foreign currency loans from the merchant banks. This forced the merchant banks to bid by "all-out" efforts for any available foreign currency (see Table 8). It accelerated the depreciation of won and the won-dollar exchange fell to an unprecedented low: the US dollar devaluated from 844.2 at the end of 1996 to 1790 at the end of 1997, depreciating almost

2) By the end of August 1997, the worth of commercial paper held by commercial banks had decreased by 1.7 trillion won. Korean Money, September 1997

52.8 percent within a year (see Figure 1).<sup>3)</sup> This turmoil among merchant banks was one of the key reasons behind the sharp fall of the won against the dollar.

The drastically devaluating won left the Korean government, which had only about \$30 billion in foreign currency reserves after failing to stabilize the won in the foreign exchange market, unable to repay foreign short-term debts worth \$70 billion, due by the end of 1997. The Korean government pleaded with the International Monetary Fund for a \$ 55 billion bailout to stabilize its financial system. As one of preconditions, nine ailing merchant banks were closed.

In summary, the excessive use of commercial paper significantly contributed to the crisis in the unfolding process of the Korean currency crisis. First, the excessive reliance on highly risky commercial paper led the whole financial system and corporate sector to be extremely vulnerable to adverse external shocks. For example, after hearing the financial rumors about the Kia Group, Korean merchant banks recalled commercial paper worth 4.2 trillion won in a single day in mid-July of 1997 from Kia, which had used it as one of its main corporate financing source. The recollection of loans pushed it into insolvency immediately. This punitive action further squeezed the credit pool of merchant banks that concentrated about 80 percent of their business on commercial paper. Second, the exorbitantly mismatched maturity structure of foreign borrowings of merchant banks, a principal intermediary of the commercial paper market, accelerated depreciation of the Korean won.

In the next chapter, we will review the effects of the excessive use of commercial papers to the financial sector, and corporate sector.

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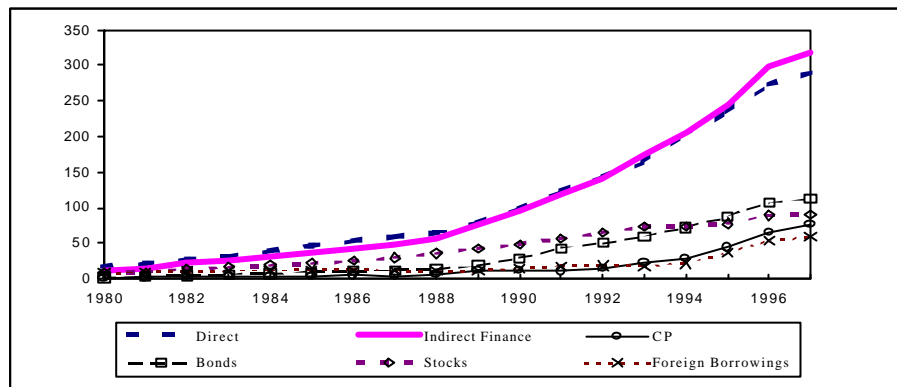
3) In November and December 1997, the share of the merchant banks' maturing foreign debts in the total inter-bank foreign exchange transactions was quite large: twenty one percent (4.9 billion dollars) and seven percent (1.6 billion dollars) respectively. Maeil Economic Daily, November 19, 1997.

### 3. BAD CREDIT EQUILIBRIA WITH THE ABNORMAL UTILIZATION OF COMMERCIAL PAPER

Since its introduction in 1972,<sup>4)</sup> taking advantage of lax government

**Figure 2 Total Outstanding External Funds in the Corporate Sectors**

(Unit: 1 trillion won)

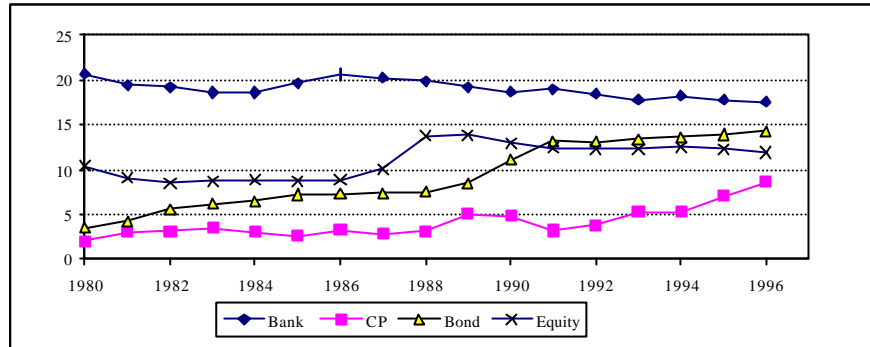


Source: *Flow of Funds*, Bank of Korea, various issues.

**Figure 3 The Share Trend of the Total Outstanding External Funds in the Corporate Sectors**

(Unit: percent)

4) The Korean government started its ambitious heavy and chemical industries (HCI) drive since 1972. Financial policies were directed to support the HCI drive. In order to provide sufficient funds for the HCI drive by absorbing informal curb market funds, the commercial paper market was set up in 1972.



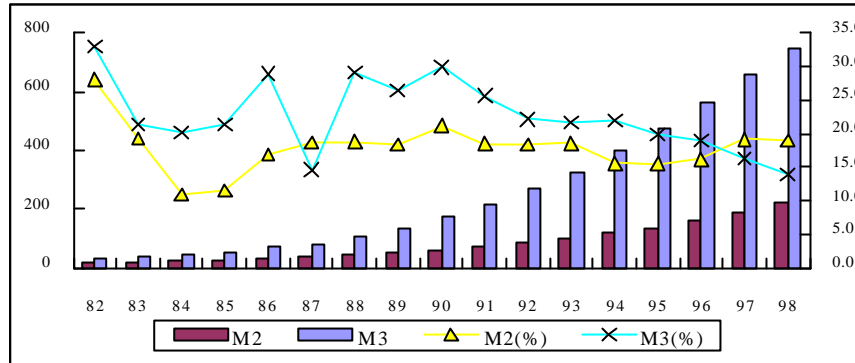
Source: *Flow of Funds*, Bank of Korea, various issues.

regulation and by offering attractive interest rates, the commercial paper market grew rapidly.<sup>5)</sup> Figure 2 & 3 show that the outstanding volume and share of the commercial paper market of the total (external) funds raised by the corporate sector have expanded rapidly after the mid- 1980s, particularly after early 1990s when the advent of the financial market liberalization. The volume of outstanding funds raised in the CP market expanded more than 7 times from 1991 to 1997, while that of equity only expanded 2.6 times and bonds 2.6 times. Correspondingly, the share of outstanding funds raised from the CP market rapidly increased: by the end of March 1997, the share reached 9.7 percent, compared to 11.4 percent from the equity market, 14.1 percent from the bond market, and 17.5 percent from the bank loan market.

#### Figure 4 Comparison of M2 and M3

(Unit: 1 trillion won, %)

5) After the introduction of the commercial paper (CP) market, the negotiable certificates of deposit (CD) market, the commercial bill (CB) sales market and call market in 1975, and the repurchase agreements (RPs) market in 1977 were introduced. A number of investment and finance companies (IFCs) and six merchant banks were set up in 1972 and between 1976 and 1979 respectively as the financial intermediaries of money market businesses. Since the conversion of IFCs into merchant banks was completed under the Act Concerning the Merger and Conversion of Financial Institutions, twenty six IFCs were converted into merchant banks in 1994 and 1996. Thirty merchant banks operated until the crisis broke out.



Source: *Economic Statistics Yearbook*, Bank of Korea, various issues.

In addition, the structure of the Korean financial system has changed since the early 1980s. This change was driven by the fast growth of the non-banking financial institutions (NBFIs) at the expense (relatively) of the banking sector. Figure 4 shows that M3 grew faster than M2 since the early 1980s. Only after the currency crisis of 1997, did the growth rate of M3 become lower than that of M2. This rapid increase of M3 reflects the fast growth of the Korean money market, particularly the CP market. Table 1 & 2 shows that the size of the Korean money market was larger than even that of the advanced nations such as US, Japan, and England. The share of CP market in the Korea money market has recently been around 40-46%.

**Table 1 Comparison of the Size of the Money Markets**

(1995, Unit: %)

| Korea | Japan | US   | England |
|-------|-------|------|---------|
| 38.0  | 22.3  | 35.7 | 30.8    |

Note: (total short-term financial issues/current GDP)  $\times$  100.

Source: Comparative Economic and Financial Statistics, Bank of Japan, 1997.

**Table 2 Composition of the Korean Money Market**

(Unit: 100 million won)

|      | 1980         | 1990          | 1995          | 1996.6        |
|------|--------------|---------------|---------------|---------------|
| CP   | 20,832(81.9) | 221,105(40.8) | 512,075(41.8) | 620,991(46.3) |
| Call | 1,787(7.0)   | 33,970(6.3)   | 59,021(4.8)   | 57,665(4.3)   |
| CD   | -            | 68,035(12.6)  | 249,986(20.4) | 232,736(17.3) |
| RP   | 1,295(5.1)   | 33,571(6.2)   | 60,401(4.9)   | 60,417(4.5)   |

|              |                      |                       |                         |                         |
|--------------|----------------------|-----------------------|-------------------------|-------------------------|
| TB           | 1,500(5.9)           | 25,000(4.6)           | 0(0.0)                  | 0(0.0)                  |
| MSB          | 32(0.1)              | 152,405(28.1)         | 300,249(24.5)           | 330,029(24.6)           |
| CB           | -                    | 180(0.0)              | 39,984(3.3)             | 38,650(2.9)             |
| Trade Bonds  | -                    | 7,529(1.4)            | 3,852(0.3)              | 1,771(1.1)              |
| <b>Total</b> | <b>25,446(100.0)</b> | <b>541,794(100.0)</b> | <b>1,225,568(100.0)</b> | <b>1,342,259(100.0)</b> |

Note: TB Stand for Treasury Bonds, and MSB stands for Monetary Stabilization Bonds  
Sources: Lee, Taebong, "The Reform of the Money Market," 1996. (in Korean)

Some problems associated with the structural change caused bad credit equilibria, leaving the entire Korean economy extremely susceptible to external shocks. We will examine how the excessive use of commercial paper led to bad credit equilibria in both financial and corporate sectors.

### 3.1. Commercial Banks

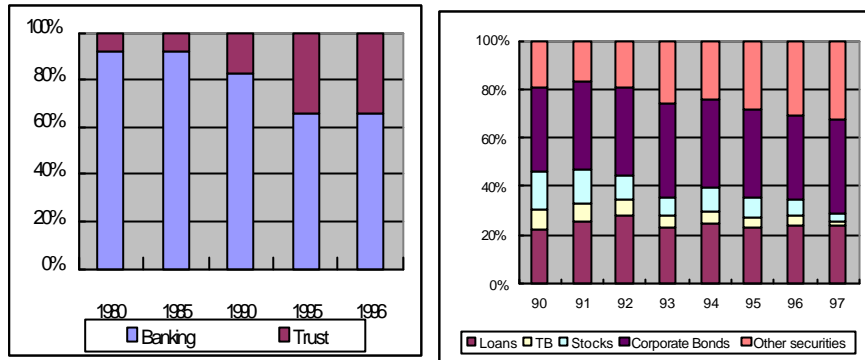
As liberalization of long-term deposit rates preceded that of short-term ones in the early 1990s, deposit interest rates of trust accounts increased and interest rate differentials between money in trust and time became higher (see Table 15). As a result, the deposit share of trust accounts in commercial banks jumped up: doubling from 1990 to 1995 (Figure 5).

Due to this rapid increase of the share of long-term assets, the commercial banks faced higher costs for raising capitals. Meanwhile, because of tight government control, the banks were not able to raise their lending rates to cover the increase in capital raising costs. Banks invested the funds raised by the trust accounts in high profit short-term financial instruments such as CP. As the government relaxed regulation concerning the portfolio management of trust account in October 1993, the banks increased their share of short-term securities, particularly CP, in the portfolio management of trust account's assets. Figure 3-4 shows that the share of other securities (mainly CP) increased from 16.9 % (9.8 trillion won) in 1990, to 22.8% (30 trillion won) in 1993 and 29.3 % (84.3 trillion won) in 1996. The commercial banks were the biggest buyer of the paper: the market share held by commercial banks

**Figure 5 Share and Asset's Structure of Trust Account  
in Commercial Banks**

Share of Trust Account

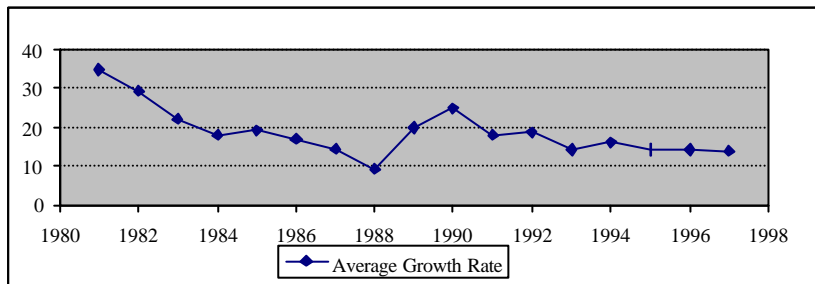
Structure of Assets in Trust Account



Source: *Bank Management Statistics*, Financial Supervisory Commission, various issues.

**Figure 6 The Average Growth Rate of Loan & Discounts of DMB, 1981-1997.9**

(Unit: percent)



Source: *Economic Statistics Yearbook*, Bank of Korea, various issues.

was around 60%, followed by 20% held by pension funds and insurance companies in recent years. As a result, the maturity structure of liabilities became longer, while that of assets became shorter in the banking sector. This increased the maturity and interest rate risks of the banking sector.

On the other hand, until 1993, the bank loans had played a dominant role as the main supplier of corporate funds. Thereafter, the relative importance of bank loans decreased. In fact, from 1990 to 1996, the average growth of banking loans made by deposit money banks decreased from 24.8 percent in 1990 to 14.2 percent in 1996 (see Figure 6). This forced the corporations to rely more heavily on other sources of funds, particularly CP.

### 3.2. Merchant Banks

In Korea, merchant banks, modeled after the British merchant bank, have been principal financial intermediaries in the money market. These merchant banks mainly raised funds by direct and indirect borrowing in both domestic and foreign markets, issuing their own commercial paper and selling Cash Management Accounts (CMA). Their main business focused on discounting and dealing commercial paper, bonds, and other securities; and obtaining foreign capital for lending to corporations. Their principal financial product was commercial paper. Table 1 & 2 shows the relative size of Korean money market and that of the CP market in Korean money market. The relative size

**Table 3 Sources of Capital Funds of Merchant Banks**

(Unit: 100 million won)

|                                    | 1991             | 1992             | 1993             | 1994             | 1995             | 1996              |
|------------------------------------|------------------|------------------|------------------|------------------|------------------|-------------------|
| Deposit(CMA,etc)                   | 246<br>(0.9)     | 216<br>(0.5)     | 133<br>(0.3)     | 2,902<br>(4.9)   | 2,932<br>(3.8)   | 3,584<br>(2.3)    |
| Borrowing                          | 21,624<br>(75.5) | 24,079<br>(57.8) | 26,729<br>(55.5) | 36,675<br>(62.2) | 46,320<br>(59.5) | 100,760<br>(65.7) |
| Bonds                              | 1,730<br>(6.0)   | 1,938<br>(4.6)   | 1,423<br>(3.0)   | 2,092<br>(3.5)   | 1,904<br>(2.4)   | 14,063<br>(9.2)   |
| Issuance of Merchant<br>Bank Bonds | 3,570<br>(12.5)  | 11,283<br>(27.1) | 14,620<br>(30.3) | 12,483<br>(21.1) | 20,322<br>(26.1) | 27,302<br>(17.8)  |
| Others                             | 1,462<br>(5.1)   | 4,168<br>(10.0)  | 5,280<br>(10.9)  | 4,914<br>(8.3)   | 6,373<br>(8.2)   | 7,573<br>(5.0)    |
| <b>Total</b>                       | <b>28,632</b>    | <b>41,684</b>    | <b>48,135</b>    | <b>59,069</b>    | <b>77,851</b>    | <b>153,282</b>    |

Note: Borrowings = short-term borrowings (domestic currency) + short-term borrowings (foreign currency) + long-term borrowings

Long-term borrowings = long-term borrowings (domestic currency) + long-term borrowings (foreign currency) + other long-term borrowings

Others = long-term liquidity borrowings + long-term foreign liquidity borrowings

Source: Kim (1997).

**Table 4 Lendings of Merchant Banks**

(Unit: 100 million won)

|                                | 1991            | 1992            | 1993            | 1994            | 1995             | 1996             |
|--------------------------------|-----------------|-----------------|-----------------|-----------------|------------------|------------------|
| Domestic<br>currency lending   | 69<br>(1.2)     | 3,642<br>(33.5) | 8,302<br>(48.2) | 9,927<br>(48.2) | 13,981<br>(32.9) | 20,772<br>(39.2) |
| Foreign<br>currency lending    | 3,740<br>(64.1) | 4,971<br>(45.7) | 5,544<br>(32.2) | 7,291<br>(24.2) | 9,701<br>(23.6)  | 12,803<br>(24.1) |
| Factoring                      | 72<br>(1.3)     | 261<br>(2.4)    | 600<br>(3.5)    | 6,261<br>(20.8) | 8,764<br>(21.3)  | 11,515<br>(21.7) |
| Long-term<br>liquidity lending | 457<br>(7.8)    | 61<br>(0.6)     | 167<br>(0.9)    | 3,685<br>(12.2) | 5,177<br>(12.6)  | 4,266<br>(8.1)   |

|   |                            |                             |                             |                             |                             |                             |
|---|----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Long-term<br>foreigncurrency<br>liquidity lending | 1,496<br>(25.6)            | 1,953<br>(17.8)             | 2,623<br>(15.2)             | 2,974<br>(9.9)              | 3,469<br>(8.5)              | 3,660<br>(6.9)              |
| <b>Total</b>                                      | 5,834<br><17.1><br>(100.0) | 10,888<br><86.6><br>(100.0) | 17,236<br><56.5><br>(100.0) | 30,138<br><74.9><br>(100.0) | 41,092<br><36.3><br>(100.0) | 53,016<br><29.0><br>(100.0) |

Note: Numbers in < > indicate the annual growth rate of total lending.  
Source: Kim (1997).

of Korean money market has been bigger than other advanced countries. And the CP market has been the most important market within money market: the share of the CP market hovered between 40-47 percent during the 1990s.

Due to high dependence on the CP market and short-term foreign borrowings, the merchant banks were seriously exposed to interest rate and maturity risks. Table 3 & 4 show that their asset-liability structures were seriously mismatched. They raised funds mainly through short-term foreign borrowings. For example, in 1996, they raised about 10.1 trillion won, 65.7 percent of total funds, by borrowing, as illustrated in Table 5. Among this, it is assumed that they borrowed approximately 7.5 trillion won short-term funds abroad.<sup>6)</sup> They made rather long-term loans. In 1996, about 60 percent of loans was made in the form of relatively illiquid assets: lease, foreign securities, and factoring.<sup>7)</sup> As the commercial paper market has rapidly grown, merchant banks even borrowed from the call market. Table 6 shows that the merchant banks even began to borrow from the call market since 1995, leaving net borrowings of 53 trillion won in 1996 and 269 trillions won in 1997. This causes the asset-liability structure of the merchant banks to be seriously mismatched.

Moreover, the maturity structure of foreign asset-liability was exorbitantly mismatched, as well. Table 5 shows that the foreign assets and borrowings increased rapidly, recording 59 percent growth in 1995 and 49 percent in 1996 respectively. In late 1997, among the \$20 billion funds they borrowed

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6) By the end of 1997, the total funds raised in foreign currency were 13,347 million dollars. The number is calculated, assuming that 70% of the borrowings was conservatively made in the short-term form.

7) The share of offshore loan in the total foreign currency loan was known as about 70-85 %.

**Table 5 Foreign Assets and Liabilities of Merchant Banks**

(Unit: 100 million dollars, the end of year)

|                          | 1992         | 1993         | 1994         | 1995         | 1996          |
|--------------------------|--------------|--------------|--------------|--------------|---------------|
| <b>Total Assets</b>      | <b>4,123</b> | <b>4,624</b> | <b>5,633</b> | <b>8,971</b> | <b>13,347</b> |
| Assets abroad            | 83           | 66           | 185          | 338          | 2,432         |
| Bonds                    | 16           | 31           | 131          | 274          | 2,152         |
| Domestic Assets          | 4,037        | 4,557        | 5,436        | 8,604        | 10,881        |
| Loans                    | 772          | 650          | 571          | 861          | 1,426         |
| Lease                    | 3,010        | 3,747        | 4,642        | 7,315        | 8,935         |
| <b>Total Liabilities</b> | <b>4,123</b> | <b>4,624</b> | <b>5,633</b> | <b>8,971</b> | <b>13,347</b> |
| Foreign Liabilities      | 1,774        | 1,450        | 1,820        | 3,872        | 5,942         |
| Bank loans               | 730          | 727          | 491          | 435          | 327           |
| Others                   | 573          | 283          | 608          | 1,910        | 3,132         |
| Bond issues              | 437          | 419          | 674          | 1,470        | 2,388         |
| Domestic Liabilities     | 2,345        | 3,172        | 3,805        | 5,095        | 7,349         |

Source: *Foreign Exchange Statistics Yearbook*, Bank of Korea, various issues.**Table 6 Net Borrowings from Call Markets by Merchant Banks**

(Unit: 1 billion won)

|                      | 1993    | 1994    | 1995    | 1996    | 1997     |
|----------------------|---------|---------|---------|---------|----------|
| Call Money(A)        | 474,471 | 361,721 | 507,801 | 622,506 | 351,621  |
| Call Loan (B)        | 537,266 | 378,458 | 505,897 | 569,618 | 82,146   |
| Net Borrowings (A-B) | 62,795  | 16,737  | -1,904  | -52,888 | -269,475 |

Source: Bank of Korea.

**Table 7 Foreign Bond Holdings by Merchant Banks**

(Unit: 100 million won)

|               | 1991   | 1992   | 1993    | 1994    | 1995    | 1996    |
|---------------|--------|--------|---------|---------|---------|---------|
| Foreign bonds | 587    | 660    | 1,524   | 3,097   | 7,232   | 16,081  |
|               | (27.8) | (12.4) | (130.9) | (103.2) | (133.5) | (122.4) |
| RPA           | 1.3    | 1.1    | 2.1     | 2.6     | 4.7     | 7.4     |

Note: RPA = foreign bonds / profitable assets.

Source: Kim (1997).

**Table 8 Maturity Structure of Foreign Debts  
by Merchant Banks (1997)**

(Unit: 100 million dollars)

|           |            | July   | September | October       |
|-----------|------------|--------|-----------|---------------|
| Borrowing | Short-term | 12,851 | 12,453    | 12,916(64.4%) |
|           | Long-term  | 7,508  | 7,583     | 7,129(35.6%)  |
|           | Total      | 20,089 | 20,037    | 20,045(100%)  |

|       |            |        |        |               |
|-------|------------|--------|--------|---------------|
| Loans | Short-term | 4,077  | 3,147  | 3,282(16.3%)  |
|       | Long-term  | 16,120 | 16,890 | 16,763(83.7%) |
|       | Total      | 20,089 | 20,037 | 20,045(100%)  |

Source: Ministry of Economy and Finance.

abroad, they made up to \$16 billion long-term investments, but only \$4 billion short-term investment. The merchant banks invested their short-term borrowings to the less liquid assets such as lease loans and foreign bond holdings. The foreign bond holdings of merchant banks roughly doubled every year since 1993, investing to seek high profits but subsequently ending up with huge losses in Southeast Asia and even Russia.

By the end of October 1997, the bad loan made by eight troubled merchant banks had far exceeded their paid-in. These bad loans came from commercial

**Table 9 Asset Structure of the Eight Troubled Korean Merchant Banks**

(Unit: million won)

| Merchant Bank | Paid-in Capital (A) | Total Loan & Discount | Bad Loan (B) | B/A Ratio, % |
|---------------|---------------------|-----------------------|--------------|--------------|
| Ssangyong     | 833                 | 18,832                | 651          | 78.2         |
| Daehan        | 3,297               | 79,653                | 3,869        | 117.3        |
| Kyongnam      | 590                 | 19,712                | 998          | 169.2        |
| Koryo         | 679                 | 33,154                | 891          | 131.2        |
| Hangil        | 588                 | 32,701                | 661          | 112.4        |
| Samsung       | 1,301               | 47,542                | 2,841        | 218.4        |
| Yeungnam      | 693                 | 16,602                | 812          | 117.2        |
| Kyongil       | 268                 | 8,774                 | 322          | 120.1        |

Source: Munhwa Ilbo, November 26, 1997.

**Table 10 Facility Investment and Profitability of the Manufacturing Sector**

(Unit: %)

|      | Facility Investment /GDP | Production Capacity Index | Growth Rate of Real Wage | Operating Income / Sales | Ordinary Income / Sales | Liquidity Ratio | Total Borrowings and Bonds Payable |
|------|--------------------------|---------------------------|--------------------------|--------------------------|-------------------------|-----------------|------------------------------------|
| 1987 | 12.7                     | 59.1                      | 8.3                      | -                        | -                       | -               | -                                  |
| 1988 | 12.8                     | 68.2                      | 11.6                     | 6.8                      | 4.1                     | 103.1           | 39.4                               |
| 1989 | 13.8                     | 73.1                      | 18.3                     | 6.0                      | 2.5                     | 103.7           | 38.5                               |

|      |      |       |      |     |      |      |      |
|------|------|-------|------|-----|------|------|------|
| 1990 | 15.0 | 77.1  | 10.7 | 6.5 | 2.3  | 99.4 | 42.8 |
| 1991 | 15.4 | 81.8  | 6.9  | 6.6 | 1.8  | 95.8 | 44.6 |
| 1992 | 14.5 | 86.7  | 8.8  | 6.6 | 1.5  | 92.8 | 47.2 |
| 1993 | 13.7 | 88.4  | 5.8  | 7.0 | 1.7  | 94.1 | 46.8 |
| 1994 | 15.6 | 91.5  | 8.7  | 7.7 | 2.7  | 94.6 | 44.5 |
| 1995 | 16.6 | 100.0 | 5.2  | 8.3 | 3.6  | 95.4 | 44.8 |
| 1996 | 16.8 | 107.6 | 7.0  | 6.5 | 1.0  | 91.9 | 47.7 |
| 1997 | 14.1 | 113.8 | 0.7  | 8.3 | -0.3 | 91.8 | 54.2 |

Note: 1) Operation income = gross profits – marketing and general administrative expenses.

2) Ordinary income = operating costs + net non-operating income

Sources: *Economic Statistics Yearbook*, Bank of Korea, various issues.

*Financial Statement Analysis*, Bank of Korea, various issues.

papers defaulted by corporations, especially big chaeboks such as Kia, Jinro, and so on (see Table 9). The bad and non-performing loans snowballed to 5.6 trillion won at the end of 1998, 20 percent of the total loans, jumping over 100 percent from the end of 1997.

### 3.3. Corporate Sectors

Commercial paper (CP) is characterized as highly liquid – normally within 90 days, carrying a high risk – an unsecured promissory note, and at high cost. Therefore, commercial paper has normally been used as “bridge financing”. Disregarding these risks, Korean corporations actively employed commercial paper as an important source to raise long-term funds for facility investment by issuing and rolling over commercial paper. This borrowing short and investing long exposed corporation to maturity risk, and by currently rolling over the paper, also made them vulnerable to rollover risk. Compared with 0.1 percent in Germany, 1.2 percent in the United States, and 0.9 percent in Japan,

<sup>8)</sup> Korean manufacturing corporations raised 17.5 percent of funds from the CP market in 1996.

**Table 11 Sources of External Funds Raised by the Corporate Sectors**

(Unit: 1 trillion won, %)

| Total | Indirect Financing | Direct Financing | Foreign | Others |
|-------|--------------------|------------------|---------|--------|
|-------|--------------------|------------------|---------|--------|

<sup>8)</sup> Taken from the Bank of Korea's report.

|      |             |             | CP          | Stocks      | Bonds       |             |             |
|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1987 | 18.87(100)  | 7.20(38.2)  | -0.34(-1.8) | 4.90(26.0)  | 1.21(6.4)   | -0.09(-0.5) | 5.93(31.7)  |
| 1988 | 21.44(100)  | 5.19(24.2)  | 1.16(5.4)   | 7.68(35.8)  | 1.41(6.6)   | 1.21(5.6)   | 4.79(22.3)  |
| 1989 | 38.88(100)  | 13.66(35.5) | 5.13(13.3)  | 9.58(24.9)  | 4.93(12.8)  | -0.18(-0.5) | 5.36(13.9)  |
| 1990 | 50.75(100)  | 19.47(38.4) | 1.90(3.7)   | 7.19(14.2)  | 10.93(21.5) | 3.25(6.4)   | 8.01(15.8)  |
| 1991 | 58.18(100)  | 24.34(41.8) | -2.21(-3.8) | 8.77(15.9)  | 14.07(24.2) | 2.40(4.1)   | 10.82(18.6) |
| 1992 | 54.89(100)  | 19.91(36.3) | 4.18(7.6)   | 8.74(15.9)  | 6.6(12.0)   | 2.53(4.6)   | 11.55(21.0) |
| 1993 | 64.89(100)  | 20.37(31.3) | 9.02(13.9)  | 9.54(14.7)  | 9.45(14.5)  | -1.45(-2.2) | 13.92(21.4) |
| 1994 | 89.04(100)  | 39.65(44.5) | 4.41(7.6)   | 13.20(14.8) | 12.61(14.2) | 4.41(5.0)   | 11.39(21.4) |
| 1995 | 100.19(100) | 31.87(31.8) | 16.10(16.1) | 14.44(14.4) | 15.35(15.3) | 5.57(5.6)   | 11.27(11.2) |
| 1996 | 118.77(100) | 34.57(29.1) | 20.74(17.5) | 12.98(10.9) | 21.21(17.9) | 12.38(10.4) | 16.04(13.5) |
| 1997 | 117.04(100) | 44.36(37.9) | 4.77 (4.1)  | 8.97(7.7)   | 26.85(22.9) | 7.16(6.1)   | 22.71(19.4) |

Note: 1) Total external funds newly raised by the corporate sectors each year.

2) The corporate sector includes both private and public corporations.

Source: *Flow of Funds*, Bank of Korea, various issues.

With the boom in exports, there was a dramatic increase in facility investment by Korean manufacturing corporations during 1986-1988 and 1993-1995 (see Table 10). Preferring debt financing to equity financing even during the 1993-5 boom period,<sup>9)</sup> they increased their external borrowings for investment. As a result, the leverage (total debt/total equity) ratio of the corporate sector, which had declined to around 200 percent in 1989 since it recorded the highest level of around 490 percent in 1980, climbed up to around 400 percent in 1997 again.<sup>10)</sup> Since 1989, the share of short-term leverage in the total corporate debts remained dominant and increased steadily, occupying around 40-44 percent. The long-term leverage was around 24-27 percent during the period (see Table 12).

**Table 12 Leverage of the Corporate Sectors**

(Unit: 1 billion won)

| Leverage Ratio | 1990  | 1991  | 1992  | 1993  | 1994  | 1995  | 1996  | 1997  |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Short-term     | 175.5 | 190.2 | 200.0 | 182.3 | 188.4 | 179.1 | 191.6 | 232.6 |
| Long-term      | 110.0 | 116.0 | 118.6 | 112.5 | 114.0 | 107.6 | 125.4 | 163.2 |

9) This is in contradiction to an implication of the agency cost theory: the higher the growth rate, the lower the leverage.

10) The leverage level of corporate sectors in 1997 was 153.8% in US, 186.4% Japan, and 85.7% Taiwan.

|       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Total | 285.5 | 306.2 | 318.7 | 274.8 | 302.5 | 286.7 | 317.1 | 396.2 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|

Source: *Flow of Funds*, Bank of Korea, various issues.

Among the corporations, the capital structure changed noticeable after the government implemented financial market liberalization. Lee and Lee (1999) show that the leverage increased more quickly for the group of the 6-30<sup>th</sup> chaebols, compared to the group of the top 5 chaebols and the groups of the non-chaebol corporations. Since the 1993 capital liberalization, the leverage and debt structure of the top 5 chaebols improved, while that of the other two groups deteriorated. As the capital market opening allowed the top 5 chaebols with good credit rating to raise funds abroad easily, their foreign borrowings significantly increased: helping the long term leverage and capital raising costs lower. However, the other two groups, not having good credit ratings, had to resort to domestic market, which had then more room for them as the top 5 chaebols began to borrow abroad.

The 6-30 largest chaebols took advantage of the slack in the credit market,<sup>11)</sup> leading them to the higher short-term leverage and financial costs. The higher reliance on short-term debt caused their financial structure and profitability to worsen compared to the top 5 chaebols. The financial institutions, as well, were exposed to high interest rate risks. In summary, the financial market liberalization gave a positive effect on the leverage structure of the top 5 chaebols, while it provided an adverse effect on the 6-30 chaebols. This increased the fragility of the 6-30 chaebols, which depended on CP for raising funds. When the economy was hit by the adverse terms of trade shocks in 1996 and 1997, these corporations were not able to adjust to adverse shocks.

Summing up, the corporation sector increased its use of commercial paper, especially in the early 1990s. This is due to a drastic need for investment funding, and an adverse effect of the financial market liberalization during the period. As a consequence of the excessive utilization of commercial paper, the maturity and debt structure of the corporations, particularly the 6-30<sup>th</sup> chaebols', seriously worsened, resulting to a precarious financial state.<sup>12)</sup>

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11) Part of their advantage might come from the fact that many of the 6-30 largest chaebols had their own NBFIs.

12) Of course, structural factors such as high wage, over-valued won and so on, leading to weakening of the Korean economy, should be considered. However, we only focus on

In the next Chapter 4, we will delve into which institutional and market factors led the abnormal utilization of commercial paper.

## **4. INSTITUTIONAL AND MARKET FACTORS OF THE ABNORMAL UTILIZATION OF COMMERCIAL PAPER**

### **4.1. Institutional Factors: Asymmetric Financial Deregulation**

When merchant banks grew rapidly, and started to compete head-to-head with commercial banks for various funds, the government implemented several measures to promote the banking institutions' competitiveness against non-bank financial intermediaries since the banking system was deemed to be of primary importance for the strategic industries in Korea. Merchant banks, being deemed secondary financial institutions, were subject to looser government control. In summary, it is right to say that no policy measure was taken for the sake of merchant banking industry since their introduction. There was virtually no supervision on merchant banks – even though this helped the merchant banks grow rapidly, it also caused a huge accumulation of foreign debt.

#### **4.1.1. Interest Rate Differentials**

To attract funds from curb market and to provide sufficient funds for the ambitious Heavy and Chemical Industry Policy, the interest rates and management of the merchant banks were less controlled, comparing to commercial banks. This led the commercial paper market to grow rapidly. When the Korean government implemented a four-stage plan for interest rate deregulation starting in 1991, the sequence of interest rate deregulation was not carefully programmed, causing interest rate differentials between banking and non-banking financial institutions, resulting in excessive use of CP.

The deregulation of interest rate was progressed asymmetrically. As the deregulation of long-term deposit interest rates preceded that of short-term

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the issues directly related to the excessive utilization of CP.

interest rates, the share of the trust accounts and CD in the banking sector rapidly increased. This tendency accelerated when regulation on the share of bondholdings in the trust accounts was relaxed in October 1993. To compensate the resultant high capital raising costs, the banks pursued more profitable short-term financial products such as CP, rather than long-term products. Table 13 shows that the interest rates of the trust accounts in the banking sector were higher than those of time deposits for all years except 1997.

The deregulation of the long-term lending interest rates was implemented in reverse order. The interest rates of short-term financial products such CP and draft loans were deregulated in November 1991 before that of long-term products. All lending interest rates except for policy loans were officially deregulated in November 1993, when the second stage of interest rates deregulation program was implemented. However, it seems that bank loans

**Table 13 The Comparison of Deposit Interest Rates between Money in Trust and Time**

(Unit: percent)

| Year | Money in Trust | Time Deposit<br>(6 months to less 1 yr) | Time Deposit<br>(1 to less 2 yrs) |
|------|----------------|---|-----------------------------------|
| 1991 | 13.7           | 6.0                                     | 10.0                              |
| 1992 | 14.2           | 6.0                                     | 10.0                              |
| 1993 | 13.1           | 5.0                                     | 8.5                               |
| 1994 | 12.7           | 5.0                                     | 8.5                               |
| 1995 | 12.3           | 7.0                                     | 8.5                               |
| 1996 | 12.5           | 9.4                                     | 9.5                               |
| 1997 | 12.5           | 13.9                                    | 9.1                               |

Source: *Economic Statistics Yearbook*, Bank of Korea, various issues.

**Table 14 The Comparison of Interest Rates between Bank Loan, Short-term Financing Instruments and Bonds**

(Unit: percent)

| Year | Curb Market | Bank Loan | Over-drafts | Call Loan | CP   | CD   | CB   | Bond |
|------|-------------|-----------|-------------|-----------|------|------|------|------|
| 1991 | 23.4        | 11.2      | 13.5        | 16.8      | 15.4 | 18.4 | 15.4 | 19.0 |
| 1992 | 23.9        | 11.2      | 12.5        | 13.5      | 14.0 | 15.2 | 14.0 | 14.0 |
| 1993 | 20.8        | 10.2      | 11.3        | 11.5      | 12.0 | 12.3 | 12.0 | 12.2 |
| 1994 | 19.4        | 11.5      | 12.0        | 14.1      | 15.3 | 14.9 | 14.3 | 14.2 |

|      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|
| 1995 | 20.8 | 10.7 | 14.3 | 10.9 | 12.9 | 11.7 | 12.2 | 11.7 |
| 1996 | -    | 11.1 | 14.7 | 12.5 | 13.5 | 13.5 | 12.8 | 12.6 |
| 1997 | -    | 15.3 | 37.5 | 21.3 | 16.9 | 18.6 | 13.3 | 24.3 |

Note: The interest rate of CP is averaged and that of bond is the O.C.T. rate.

Sources: *Economic Statistics Yearbook*, Bank of Korea, various issues; and the curb market rate is unofficial survey data available from Bank of Korea.

continued subject to government administrative guidance.<sup>13)</sup> In contrast to bank loans, the regulation and administrative guidance on CP was almost completely liberalized around 1993-94.<sup>14)</sup> As a result, the investors preferred CP since they could earn higher interest rates. Banks largely invest the funds raised by the trust accounts in the commercial paper market. Table 14 shows that the disparities between interest rates of short-term financial instruments such as overdrafts, call loan, and CD, etc., have been much higher than that of banking loan, which has been relatively stable under the government's control.

#### 4.1.2. Lower Entry Barriers

Entry into the banking sector was strictly controlled. However, entry in the merchant banking sector (including investment finance companies) was often allowed. The rapid increase of the number of the CP market participants helped to boost the growth of the CP market. While twenty-two short-term finance companies, six merchant banks, and two investment trust companies were permitted during 1972-82, only two banks, Shinhan bank in 1982, and Hanmi in 1983, were established during the same period. After the late 80s, the government worried about the weakening competitiveness of banks, only three banks, Donghwa, Dongnam, and Daedong, were introduced. However, five local investment trust companies were also established. In 1990s, twenty-six investment finance companies (IFCs) were converted into merchant banks in 1994 and 1996. Since the second conversion of local investment and finance companies into merchant banks was made in 1994, the business

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13) Even after the second stage of interest rates deregulation program in November 1993, the prime interest rate was lower than the interest rate of corporate bonds. This abnormality might serve as evidence that the government actively provides administrative guidance to control the lending interest rates.

14) Refer Bank of Korea (1999), pp. 69-71.

environment of merchant banks, particularly for newly licensed entrants, greatly deteriorated. Taking advantage of the capital market liberalization, these inexperienced merchant banks recklessly sought a new business opportunity in international financial market.

#### **4.1.3. Lower Credit Rating Requirement**

Since CP is a high risky unsecured promissory note, only highly credit rated corporations are generally eligible to issue it. However, even a corporation that belongs to the speculative grade category has become able to issue CP in Korea. In contrast, in the US and Japan, only a firm that belongs to the investment grade category is allowed to issue it.<sup>15)</sup> This relatively low credit rating requirement helped the Korean corporations to exploit the CP market. For example, Hanbo Steel got a B+ as its credit grade and it was able to issue CP right before its bankruptcy in January 1997 (Appendix 3).

#### **4.1.4. Relaxed Supervision**

After the government implemented financial market liberalization measures in 1993, supervision of merchant banks, unlike that of the deposit banks, was virtually non-existent.<sup>16)</sup> The liberalization of short-term money market without preparing proper financial market infrastructure distorted the financial market structure. For example, paper traded in the deal-placed market was illegally endorsed by merchant banks. Moreover, supervision on reckless foreign borrowings and investment by the inexperienced merchant banks was lax. Some merchant banks practiced illegal dealings of commercial paper. They sold commercial papers issued by low credit rated corporations as those issued by high credit rated corporations. By withholding the CP certificates, they also resold commercial paper repeatedly to a number of customers.

#### **4.1.5. Procedural Convenience**

Procedural convenience also led the Korean corporations to depend on CP

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15) Japan Only a firm rated above P-2 from Moody's or A-2 from Standard & Poors in US and A-3 in respectively is eligible to issue CP.

16) This is attributable to lack of understandings of the government about the money market.

to raise funds. Unlike issuing bonds and equity in financial markets, corporations can bypass financial intermediaries to raise funds in the direct commercial paper market. Thus they not only avoided paying fees to banks, but they also negotiated directly with investors with regard to interest rates and maturity of the paper. Also, since the commercial paper is a non-secured promissory note buttressed by the issuer's reputation or credit standing, the procedure to issue the paper is much more convenient than to issue bonds or equity, not to mention the difficulty to borrow from commercial banks.

#### **4.2. Market Related Factors**

Due to a huge wage hike in 1989, Korean corporations have had difficulty sustaining their international competitiveness. Coupled with this, it became difficult to seek monopolistic rents in domestic market as liberalization started. It became urgent for corporations to improve their international competitiveness for their survival. They, particularly large firms, made an effort to convert into labor-saving and high value-added activities, by making aggressive investments in heavy and chemical industries whenever the conditions allowed. Even during 1994-95, when export was strong, the total borrowings of large corporations increased, indicating that they made more investments than what they earned, instead of improving their leverage structures (see Table 10, 11, 12). They did not stop investing in 1996 when the external conditions worsened. They continued to invest through debt financing, causing the level of corporate capital inadequacy seriously worsened. Here we investigate the factors that led the corporate sector to rely on debt financing, particularly the CP market.

##### **4.2.1. Capital Inadequacy**

With adverse terms of trade, capital inadequacy was greatly aggravated, particularly in 1996 (see Table 10 & 11). Aggressive corporate investments since 1993 were done for two main reasons. First, the corporations had to deal with the worsened structural weaknesses, often noted as three "highs": high wage, high land price, and high financial expenses, especially following after sharp increases in real wage and land price during 1988-90. Second, as the liberalization program progressed in the early 1990s, Korean corporations

faced new domestic and foreign entrants in the once well-protected domestic market. To overcome this difficulty, Korean corporations invested, to upgrade and/or expand their production facility to enhance their competitiveness in both domestic and international markets, taking advantage of strong exports during 1994-5. Table 10 shows that Korean corporations made aggressive facility investment starting from 1994 and continued even until 1996 when external conditions were very much deteriorated. They heavily relied on the CP market particularly during 1995-6. In 1996 right before the crisis broke out, the share of total borrowings was at an all time high (see Table 11).

#### **4.2.2. Sluggish Stock Market**

Korean stock exchange market has been sluggish, making equity financing less attractive. Both trading volume and stock price index have decreased sharply since 1989. Though the stock market showed a sign of resurgence during 1993-4 as the economy recovered, it was short-lived. Trading volume dropped sharply from 229.8 trillion won in 1994 to 142 trillion won in 1996. And the stock market index dropped from 965.7 in 1994 to 833.4 in 1996.

#### **4.2.3. Tight M2 Control**

Even after financial market liberalization, the monetary authorities have kept using M2 growth as the intermediate monetary target variable. This rigid monetary target deprives the authorities of flexibility. To manage the M2 target, the interest rates deregulation of the non-M2 financial products such as CP was preceded. This resulted in a (relative) weakening of the banking sector. As shown in Figure 3-3, while the average growth of MB was kept relatively higher, that of M2 declined until 1997. The growth rate of M2 decreased from 21 percent in 1990 to 15-16 percent range for 1994-96. Meanwhile, the growth rate of M3 was higher than that of M2: 22 percent during 1993-94 and 19-20 percent during 1995-96. This indicates that bank loans have been relatively reduced, resulting in less availability of funds for the corporate sector. Therefore, they sought alternatives to meet their aggressive equipment investments during 1993-96.

#### **4.2.4. Ownership**

Chaebols are owned and managed by single families rather than public-owned, and managed by professional managers. Chaebol founding families tend to be reluctant to relinquish the ownership of the company. Therefore they were reluctant to disperse ownership and raise corporate funds by issuing equities, even though portfolio diversification could help reduce the financing risks.

#### **4.2.5. Tax Subsidies**

The corporations can save capital raising costs by raising funds in the CP market or through bank loans than equity market as Korean Corporation Tax offers a tax subsidy on debt. The company's payments of interest on debt are regarded as a cost and are deducted from taxable income. The interest is paid from before-tax income, while dividend of equity is paid from after-tax income.

## **5. CONCLUDING REMARKS**

We have discussed the abnormal utilization of CP by Korean merchant banks, commercial banks and corporations: they indiscriminately issued and rolled over commercial paper, exposing themselves to both liquidity and maturity risks. When adverse external shocks hit the Korean economy, the precarious health of these firms triggered the currency crisis. And it explains why the currency crisis quickly developed into a full-blown economic crisis. We also identified that the fundamental reasons for the indiscriminate use of CP, including an asymmetric government intervention in the financial system and high demand for funds by the corporate sector.

The abnormal expansion of the commercial paper satisfied all market participants' interests when the economy was good. The merchant banks earned fees from discounting and selling CP. While the commercial banks earned profits in the CP market through its trust accounts with less default risk achieved by shifting its risk to merchant banks. The government, sticking to M2 target, eased the increasing money demand pressure without increasing its monetary base. As a result, the excessive and rapid expansion of CP market went unchecked.

The policy implications are drawn as follow:

First, the proper sequence of financial market liberalization is important to prevent unnecessary financial turmoil. In Korea, as the ill-designed sequence of interest rate deregulation caused interest rate differentials between banking and non-banking financial institutions, the share of short-term financing in the corporate finance rapidly increased. And this made the corporations extremely vulnerable to sudden swings of external shocks. Plus, as we discussed, the 1993 capital market opening only helped the top 5 chaebols, which had good reputations abroad, and lowered their financial costs and short-term leverage. If the openings of domestic corporate bond and/or commercial loans markets had preceded, it would have improved the leverage and debt structure of the 6-30<sup>th</sup> chaebols and others.

Second, a well-designed preparation of good financial infrastructure is extremely important to reap desirable outcomes from the liberalization of the money market. The rapid share increase of money market increased risks of the entire financial system in Korea. Without preparing a good credit rating system, money market was liberalized. The banks made investment even with the poor credit ratings done by merchant banks and/or credit rating agencies. The following example illustrates the poor performance of the Korean credit rating companies. The Korea Investors Service, a credit rating agency evaluated that the eligible corporations (above B class) for issuing bonds was about 57.4 percent among the total registered companies in Korea stock market in 1997 while Moody had only 22 percent as eligible. Failing to prepare for an internationally acceptable credit rating system, the companies were seriously affected by foreign investors' panic when information started to be disclosed.

Third, as an intermediate monetary target variable, it would be desirable to use M3 (or MCT) rather than M2 even for a developing country like Korea when it has a relatively large money market. Though the effectiveness of M2 as an intermediate target was seriously weakened as the money market became increasingly important, the authorities kept using M2 and thus failed to respond the changes in the financial environment.

Last, the Korean crisis highlights not only the importance of equity markets but also the secondary market for short-term financial instruments such as CP,

CD, TB, and so on. While the size of issuing markets for these short-term financial instruments was relatively large, the secondary markets for these instruments were not adequately developed. For example, during 1995, the velocity of CD and short-term discounted TB were 54.1 and 144.5 respectively in Japan, that of CD and Monetary Stabilization Bonds were 4.4 and 0.01. When financial institutions faced liquidity problem, this prevented them from utilizing their holdings of short-term financial instruments for meeting liquidity needs.

## APPENDIX

### Appendix 1 Comparison of Business of the U.S. Investment Bank, U.K. Merchant Bank and Korea Merchant Bank

|  | Investment Bank (U.S.) | Merchant Bank (U.K) | Merchant Bank (Korea)  |
|--|------------------------|---------------------|--|
| Deposit/Loan                               | X                      | O                   | X<br>mid and long-term loans and CMA are only allowed                          |
| Bonds                                      | O                      | O                   | O<br>dealing, underwriting and purchasing for corporate bonds are only allowed |
| Investment trust                           | O                      | O                   | O  |
| CP business                                | O                      | O                   | O  |
| International finance and foreign exchange | O                      | O                   | O  |
| Guarantee                                  | O                      | O                   | O  |
| Factoring                                  | O                      | O                   | O  |
| Issuing Bonds                              | O                      | O                   | O  |
| M&A  | O                      | O                   | O  |
| Lease                                      | O                      | O                   | O  |

Source: Author's modification from Kim (1997).

### Appendix 2 Liberalization Measures Taken for CP Market

| Date                      | Liberalization Measures   |
|---------------------------|---|
| August 1972               | Establishment of the CP market  |
| December 1988             | Interest rate liberalization – the issue ceiling for CP was liberalized.<br>Introduction of a new type of CP-a high value faced CP (minimum unit: 30 million won) |
| November 1991             | Interest rate liberalization - the sales ceiling for a high value faced CP was liberalized.<br>the issue ceiling for all kinds of CPs was removed.                |
| July 1994 – November 1995 | Minimum unit for a high value faced CP was relaxed to 20 million and 10 million won respectively.   |
| July 1997                 | Interest rate liberalization – the sales ceiling of all kinds of CPs was removed.<br>Minimum unit for a high value faced CP was finally removed.                  |
| August 1997- June 1998    | Allowing security companies, commercial banks and investment trust companies for the CP business  |

Source: Bank of Korea (1999).

### Appendix 3 Credit Ratings of Selected Corporations Bankrupted or in for Court Receivership in 1997

|                      | Date of bankruptcy | 97.7    | 97.1    | 96.7    | 96.1    | 95      | 94      | 93      | 92  | 91  |
|----------------------|--------------------|---------|---------|---------|---------|---------|---------|---------|-----|-----|
| Hanbo Steel          | 97/1/25            |         | D D     | B+ B+   | B+ B+   | A3 A3   | A3 A3   |         |     |     |
| Sammi                | 97/3/20            |         | B       | B+      | B- B-   | B- B-   | B B     | B+ B+   | B+  | A2- |
| Jinro                | 97/9/9             | D D     | A3- A3- | A3- A3- | A3- A3- | A3- A3- | A3+ A3+ |         |     |     |
| Daenong              | 97/9/12            |         | B+ B+   | B+ B+   | B+ B    | B+ B+   | B+ A3-  |         |     |     |
| Hanshin Construction | 97/5/31            | D       | B- B    |         | B B     | A3- A3- | A3- A3- | A3- B+  | B+  | B-  |
| Kia Auto             | 97/9/23            |         | A2+ A2+ | A2+ A2+ | A2 A2+  | A2 A2+  | A1 A1   |         |     |     |
| Kia Steel            | 97/9/23            |         | B+ B+   | A3- A3- | A3- A3- | A3- A3- | A3+ A3+ |         |     |     |
| Saangbang-wool       | 97/10/16           | A2+ A2+ | A2+ A2+ | A2+ A2+ | A2+ A2+ | A2+ A2+ | A2+ A2+ | A2+ A2+ | A2+ | A2  |
| Haitai               | 97/11/3            | A3+ A3+ | A2- A2- | A2- A2- | A2- A2- | A2- A2- |         |         |     |     |
| Halla Construction   | 97/12/8            | A2- A2- | A2- A2- | A2- A2- | A2- A2- | A2- A2- | A3 A3   | A3 A3   | A3- | A3- |

Source: *Credit Ratings*, Korea Investors Service, various issues.

### REFERENCES

- Bank of Korea, "Commercial Paper Market," in *The Korean Financial Markets*, (in Korean), 1999.
- Bisignano, Joseph, "Precarious Credit Equilibria: Reflections on the Asian Financial Crisis," *Working Paper*, No. 64, Bank for International Settlements, 1999.
- Borensztein, Eduardo and Jong-Wha Lee, "Credit Allocation and Financial Crisis in Korea," *IMF Working Paper*, 1999.
- Chang, Ha-Joon, Hong-Jae Park, and Chul Gyue Yoo, "Interpreting the Korean Crisis: Financial Liberalisation, Industrial Policy and Corporate Governance," *Cambridge Journal of Economics*, 22, 1998, pp.735-746.
- Kawai, Masahiro, "The East Asian Currency Crisis: Causes and Lesson," *Contemporary Economic Policy*, 16(2), 1998, pp.157-172.
- Kim, Byung-Duck, *Strategic Positioning of Merchant Bank*, (in Korean), Seoul: Korea Institute of Finance, 1997.
- Kim, Dong-Won, "Causes of the Economic Crisis," Paper presented at the conference on 'the Korean Economic Crisis and Its Perspective' of the

- Korean Economic Association, (in Korean) March 25, 1998.
- Lee, Jong-Wha and Young-Soo Lee, "The Structure of Corporate Debt in Korea," *Kukje Kyoungje Yeungu (Korean Journal of International Economics)*, (in Korean), 1999, pp.91-118.
- Radelet, Steven and Jeffrey Sachs, "On the Onset of East Asian Financial Crisis," mimeo, Harvard Institute for International Development, 1998.
- Rodrik, Dani and Andres Velasco, "Short-Term Capital Flows," mimeo, Harvard University, 1999.
- Taylor, Lance, "Capital market crises: liberalisation, fixed exchange rates and market-driven destabilization," *Cambridge Journal of Economics*, 22, 1998, pp.663-676.