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Financial Deregulation and Competition in Korea

Moon-Soo Kang

9.1 Introduction

The financial system in Korea has been undergoing structural changes as a result of financial reform and technological innovation. The financial liberalization and internationalization currently in progress may be regarded as deregulation undertaken by the government in response to the needs of financial institutions for financial innovation, and to deal with international pressures and friction resulting from new economic and financial conditions.

Since the early 1980s, the government has gradually changed its policy direction regarding the overall management of the national economy toward a more market-oriented approach. This change regarding the management of the national economy initiated the liberalization of financial policy. Democratization has also accentuated demands for faster financial market deregulation.

Financial deregulation in Korea has been a very cautious and slow process. The authorities have pursued a policy of gradualism in order to give less competitive financial institutions enough time to adjust to a more competitive environment in financial markets. The less competitive institutions include some nationwide commercial banks with a heavy burden of nonperforming assets that had been incurred by bank support for industry rationalization and worsened by the recent economic downturn (see Nam 1994, 184–222). Furthermore, fifteen nationwide commercial banks recorded huge capital losses of 4.5 trillion won in stock investments at the end of 1996 as equity prices declined. Eight investment trust companies

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also suffered from heavy capital losses of 1.8 trillion won in equity investments at the end of March 1997. Given the commercial banks' weakened loan portfolios, it was feared that complete freedom in the determination of bank lending and deposit rates would lead to cutthroat interest rate competition among banks and nonbank financial institutions, with subsequent undue pressures on interest margins, bank profits, and capital adequacy ratios.

Some market observers, disappointed in the slow financial deregulation process, think that "big bang" full liberalization might solve many problems in the financial markets in a single stroke, whereas government authorities have pursued gradual deregulation and have favored restructuring financial institutions in several steps to reduce shocks and uncertainties in the financial markets. At the end of 1995, the government introduced a four-year program, the Revision to the Foreign Exchange Reform Plan, to liberalize capital movements (see OECD 1996, 58–62). The plan includes specific measures and a timetable for implementation. It not only covers long-term capital transactions but also extends the deregulation of short-term capital transactions. In early 1997 the government established the Presidential Commission for Financial Reform, which plans to recommend a big-bang-type full liberalization to the government.

The Hanbo scandal in early 1997 exposed the vulnerability of the Korean financial system by pushing a couple of nationwide commercial banks and dozens of nonbank financial institutions to the wall. The scandal triggered a general public outcry for a comprehensive overhaul of the outdated and inefficient financial system. A sense of urgency has permeated the government's determination to make these changes, with the full-fledged market opening looming large after Korea's accession to the OECD in December 1996 (Kim 1997, 4). Before allowing firms to borrow freely from international capital markets and implementing external liberalization, the government should fully liberalize the national financial market.

The purpose of this paper is to assess the financial deregulation process and its consequences in Korea's financial sector.

9.2 Interest Rate Deregulation

9.2.1 Interest Rate Liberalization

The government implemented the first plan for interest rate deregulation in December 1988, when most bank and nonbank lending rates and some long-term deposit rates, except for those on policy loans, and short-term deposit rates were liberalized. After only about six months, however, the government and the business sector became so concerned about the rise in interest rates that the government again intervened in the financial

market, giving tacit consent for financial institutions to collude on interest rates. The interest rate jumps were not directly caused by the deregulation itself but rather by the tight monetary policy being pursued. Thus the first attempt at interest rate deregulation was abandoned and caused some confusion among market participants.

It has become increasingly necessary to liberalize interest rates and reinforce the market mechanism, thereby improving the efficiency of the financial markets as well as the competitiveness of domestic financial institutions. Interest rate deregulation was pursued to handle difficult situations effectively with the global trend of financial liberalization and integration.

The government announced a gradual interest rate deregulation plan in August 1991 (table 9.1). This was the second attempt at deregulating interest rates. The first step of the four-stage interest rate deregulation plan went into effect in November 1991. Interest rates have been gradually liberalized in accordance with developments in the economy as well as in financial markets (fig. 9.1). There has been an attempt to keep a proper balance between the deregulation of deposit and loan rates among different financial products and among different areas of the financial sector in order to minimize any disruption of the financial market's overall stability. In comparison to deposit rates, lending rates have been deregulated relatively faster since they influence fund allocation. Regarding deposit rates, those on large, long-term deposits have been liberalized first to deter an abrupt shift of funds across different financial sectors and to encourage long-term deposits. Under the four-stage approach, demand deposit rates will not be fully deregulated until 1997. The desire of the government and the Bank of Korea to save on borrowing costs as they issue debt instruments is one of the factors that has contributed to the cautious approach toward interest rate deregulation. Monetary authorities do not want to be blamed for instigating a rise in interest rates when they implement the four-phase interest rate deregulation plan.

9.2.2 Behavior of Bank Lending Rates after Deregulation

Just after the deregulation of bank lending rates, lending rates on bank overdrafts and discount rates on commercial bills started to rise between 0.5 and 3.0 percent, reflecting excess demand for bank credit, though these rates then began to drop gradually. Minimum lending rates and maximum rates on general bank loans, however, declined by between 1.5 and 0.5 percent, respectively, just after the deregulation in November 1993. The bank lending rate band between the maximum rate and the minimum rate widened to 6.50 percent at the end of February 1997 from 2.5 percent at the end of 1991 (table 9.2).

Commercial banks' prime lending rates did not move flexibly reflecting market conditions after the deregulation of interest rates. Prime rates of commercial banks are linked to the average funding cost of banks. As of

Table 9.1 **Schedule for Interest Rate Deregulation and Implementation of Selected Measures**

Step	Loans	Deposits	Bonds	Deregulation of Financial Instruments
Step 1: second half of 1991 to first half of 1992	Bank overdraft loan Real commercial bill discounts excluding those rediscounted by Bank of Korea (BOK) Short-term finance companies' commercial paper and trade bill discounts	Negotiable bank certificates of deposit Short-term finance companies' sale of large-size commercial papers and trade bills Banks' sale of large-size real commercial bills Large-size repurchase agreements Some long-term deposits	Corporate bonds with maturities over two years	
Step 2: second half of 1992 to end of 1993	All loans of banks and nonbank financial institutions, excluding loans financed by government and BOK rediscount	Long-term deposits with maturities over two years	Corporate bonds with maturities less than two years Bank debentures with maturities over two years	Auction sales of monetary stabilization bonds and treasury bonds (March 1993) Diversification of short-term instruments (ongoing) Easing of restrictions on short-term financial instruments (maturities and issue limit; ongoing)

Step 3: 1994–96	Loans financed by government and BOK rediscount	Deposits with maturities less than two years (except demand deposits) Further deregulation of short-term market-oriented products Introduction of financial products linked to market rates such as money market certificates	Bank debentures with maturities less than two years Monetary stabilization bonds	Authorization of new short-term products, including money market certificates and money market funds
Step 4: 1997–	1997: Preparation of plan for phased deregulation of remaining regulated interest rates on demand deposits and preferential and company saving deposits with maturities of less than three months		All government and public bonds	1997: Study on abolishing restrictions on short-term instruments

Source: Ministry of Finance and Economy (1991).

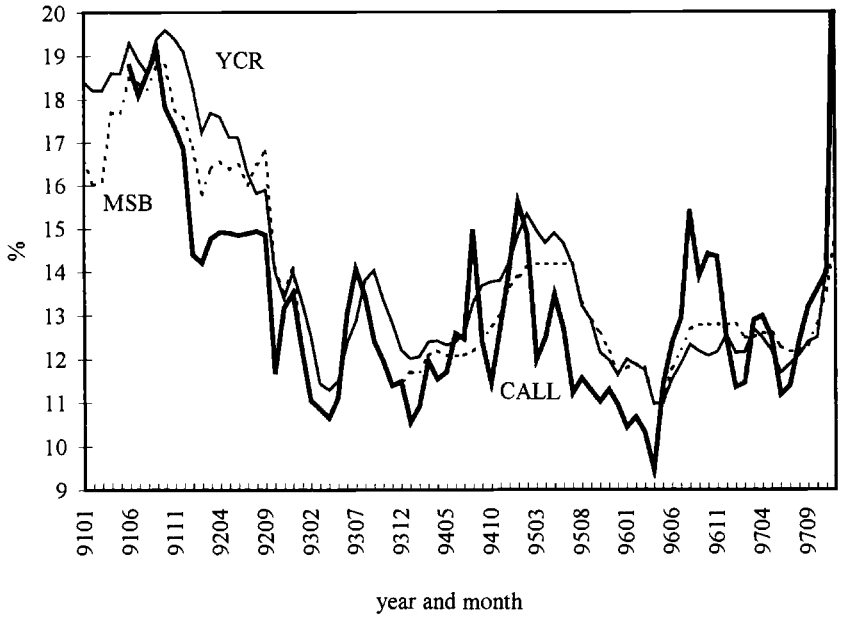

Fig. 9.1 Nominal interest rates
Note: MSB = monetary stabilization bond; YCR = yield on corporate bond.

June 1996, the major commercial banks seem to determine their prime rates based on the following formula (see H. Kim 1996, 22–47)

(1) Prime rate = Average funding cost + Interest margin
− Spread band width/2.

In general, since deregulation, the five major nationwide commercial banks change their prime rates first and then other banks tend to follow them passively (table 9.3). It appears that smaller and regional banks do not have the ability to determine their own rates and do not have a proper risk management system installed. Therefore, they do not want to differentiate themselves much from major leading banks in the financial market. Commercial banks tend to adjust their average lending rates, not by frequently changing prime rates, but by changing interest spreads offered to customers.

9.3 Competition in Banking Markets

9.3.1 Changes in Bank Loan Portfolios

A significant change occurred in bank loan portfolios when phase 2 of the interest rate deregulation plan was implemented. The share of loans to

Table 9.2 **Bank Lending Rate Movements after Deregulation (percent per annum)**

Deregulation	1990	1991	1992	1993	1994	1995	1996	February 1997
Phase 1: November 1991								
Overdrafts	10.0–13.0	12.0–15.5	10.25–15.0	9.5–13.5	10.0–14.5	11.7–15.5	14.3–16.5	13.4–14.3
Phase 1: November 1991								
Discount on commercial bills	10.0–13.0	12.0–15.5	10.2–15.0	8.5–12.5	8.5–12.5	9.0–12.5	8.5–14.75	8.25–14.75
Phase 2: November 1993								
General loans	10.0–13.0	10.0–13.0	10.0–13.0	8.5–12.5	8.5–12.5	9.0–12.5	8.5–14.75	8.25–14.75
Phase 3: December 1994, July 1995, November 1996								
BOK loans with aggregate credit ceiling	10.0	10.0	10.0	8.5	8.5–9.5	9.0–11.0	8.75–11.0	8.25–14.75

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

Table 9.3 **Bank Prime Rates and Dates of Change: Leaders and Followers, after April 1996**

Prime Rate (%)	23 April 1996	25 April 1996	2 May 1996	7 May 1996	8 May 1996	10 May 1996	23 May 1996
8.75	Top eight banks[a]	Koram Bank					
9.0	Donghwa Bank, Boram Bank	Hana Bank	Daegu Bank, Peace Bank		Kyongnam Bank		
9.25			Kwangju Bank	Pusan Bank		Chung-chong Bank	Dongnam Bank

Source: H. Kim (1996).

[a]Includes Chohung Bank, Commercial Bank of Korea, Korea First Bank, Hanil Bank, Seoul Bank, Korea Exchange Bank, Shinhan Bank, and Citizen's National Bank.

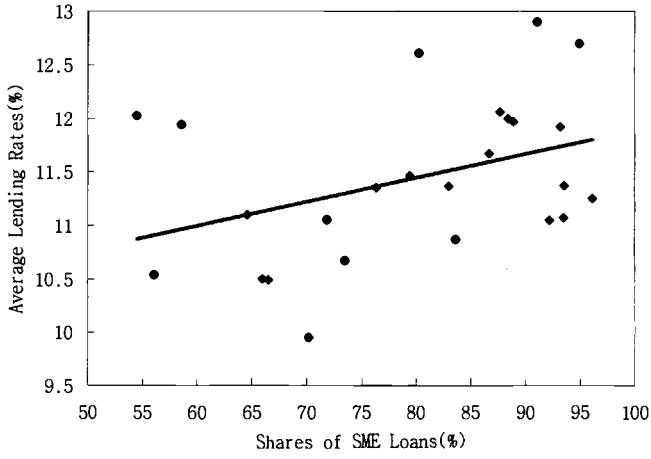

Fig. 9.2 Shares of small and medium-size enterprise (SME) loans and average lending rates of banks

big firms in the loan portfolios of nationwide commercial banks declined considerably, as big firms relied more heavily on funding through securities and the bond market.

On the other hand, the share of loans to small and medium-size firms showed steady growth (fig. 9.2). The share of loans to households rose sharply after interest rate deregulation. Commercial banks have expanded loans to households and small and medium-size firms, to whom relatively high lending rates were applied.

9.3.2 Interest Rate Margins

Next, we investigate the interest rate margin trend in the banking sector. The interest rate margin could be used as an indicator to measure the degree of financial deregulation and competition in the banking market. More competition stemming from a more liberalized financial system will tend to reduce the margin; a bigger margin could be taken as an indicator of a lower degree of financial liberalization.

Interest rate margins of nationwide commercial banks, which measure the difference between the average lending and deposit rates in a given year, came down quite strikingly between 1990 and 1994 (table 9.4). This margin squeeze reflects increased competitive pressures in the bank deposit market that brought about a sharp increase in the average deposit rate after the deregulation of interest rates (fig. 9.3). Interest rate margins of regional banks, however, did not come down as much. This reflects the fact that competitive pressures in the regional banking market are weaker than in the nationwide banking market due to restrictions on the expansion of bank branches. It also reflects the fact that regional banks kept

Table 9.4 **Interest Rate Margins of Banks (percent)**

	Five Major Banks	Nationwide Commercial Banks	Regional Banks	Commercial Banks
1988				
Ave. lending rate	9.14	9.41	11.54	9.79
Ave. deposit rate	5.65	5.74	6.70	5.95
Margin	3.49	3.67	4.84	3.84
1989				
Ave. lending rate	10.28	10.14	12.13	10.48
Ave. deposit rate	5.76	5.80	6.12	5.87
Margin	4.52	4.34	6.01	4.61
1990				
Ave. lending rate	10.37	10.48	11.94	10.74
Ave. deposit rate	6.10	6.23	6.15	6.21
Margin	4.27	4.25	5.79	4.53
1991				
Ave. lending rate	9.83	9.93	11.65	10.28
Ave. deposit rate	7.95	8.15	7.86	8.08
Margin	1.88	1.78	3.79	2.20
1992				
Ave. lending rate	10.28	10.49	12.22	10.82
Ave. deposit rate	8.36	8.70	8.22	8.59
Margin	1.92	1.79	3.99	2.24
1993				
Ave. lending rate	8.73	9.00	10.91	9.36
Ave. deposit rate	7.30	7.58	7.00	7.45
Margin	1.42	1.42	3.90	1.91
1994				
Ave. lending rate	9.39	9.60	11.23	9.91
Ave. deposit rate	7.52	7.77	7.03	7.61
Margin	1.87	1.83	4.20	2.30
1995				
Ave. lending rate	10.41	10.65	11.61	10.82
Ave. deposit rate	7.71	7.88	7.40	7.79
Margin	2.70	2.77	4.21	3.02

Source: Bank of Korea (1995).

extending many more loans to small and medium-size firms than nationwide commercial banks.

9.3.3 Branching

The authorities have maintained controls on the expansion of bank branches in the fear that freedom in bank branching would favor the concentration process. As part of the financial deregulation policies that foster competition through easier market access, the government has gradually deregulated the expansion of branch networks. The Committee for Harmonization of Bank Branching was abolished in 1994, and restrictions

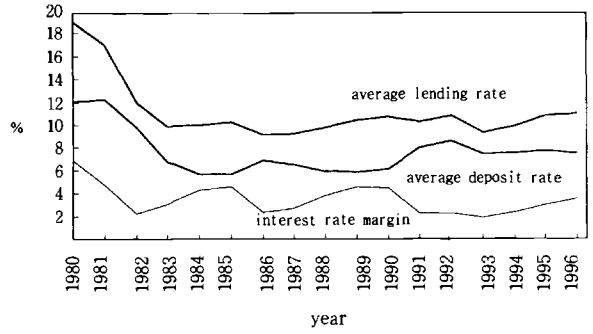

Fig. 9.3 Interest rate margins of commercial banks

Table 9.5 Expansion of Branch Networks of Commercial Banks

Bank Type	1990	1991	1992	1993	1994	1995	1996
Nationwide commercial banks (A)	1,695	1,931 (13.9)	2,149 (11.3)	2,425 (12.8)	2,681 (10.6)	3,476 (29.3)	3,891 (11.9)
Regional banks (B)	638	746 (16.9)	818 (9.7)	892 (9.0)	1,001 (12.2)	1,081 (8.0)	1,214 (12.3)
Commercial banks (A + B)	2,333	2,677 (14.7)	2,967 (10.8)	3,317 (11.8)	3,682 (11.0)	4,557 (23.8)	5,105 (12.0)
Foreign banks[a]	94	94	96	98	95	96	91

Source: Bank of Korea (1996).

Note: Numbers in parentheses are rates of increase (percent) over previous year.

[a]Includes number of branches and representative offices.

on bank branching were lessened. The banks themselves now decide the number of branches that are profitable to operate. In 1995, commercial banks—in particular, nationwide commercial banks—aggressively expanded their branch networks to strengthen their retail operations (table 9.5).

This growth has helped to intensify competition and improve the efficiency of local financial markets that were often characterized by a high degree of concentration. Freedom to open more branches, however, enabled the large nationwide commercial banks to expand their institutional dominance at the expense of smaller local savings institutions and regional banks (table 9.6). These fears prompted regional banks to ask the government to ease territorial restrictions against them. Regional banks are not allowed to open more than ten branches in Seoul and two branches in large cities in provinces other than their home provinces.

Foreign banks, except Citibank, have not expanded their branch networks yet. They do not seem to have strong interest in the retail banking

Table 9.6 **Deposits and Assets of Commercial Banks (billion won, period average)**

Bank Type	1990	1991	1992	1993	1994	1995	1996
			Deposits[a]				
Nationwide commercial banks (A)	41,585.9 (82.1)	52,152.9 (81.1)	60,122.3 (81.6)	68,593.7 (80.8)	74,518.9 (79.8)	117,097.1 (83.8)	137,715.7 (84.0)
Regional banks (B)	9,093.2 (17.9)	12,147.1 (18.9)	13,524.9 (18.4)	14,540.7 (17.1)	17,164.9 (18.4)	20,860.8 (14.9)	24,523.3 (14.9)
Commercial banks (A + B)	50,679.1 (100.0)	64,300.0 (100.0)	73,647.2 (100.0)	83,134.4 (98.0)	91,683.5 (98.1)	137,957.9 (98.7)	162,239.0 (98.9)
Foreign banks	–	–	–	1,715.1 (2.0)	1,750.9 (1.9)	1,756.0 (1.3)	1,800.7 (1.1)
Total	50,679.1 (100.0)	64,300.0 (100.0)	73,647.2 (100.0)	84,849.5 (100.0)	93,434.4 (100.0)	139,713.9 (100.0)	164,039.7 (100.0)
			Assets				
Nationwide commercial banks (A)	96,494.9 (85.77)	119,201.0 (85.37)	144,278.7 (86.17)	172,323.3 (81.00)	217,620.2 (81.84)	299,036.8 (82.90)	363,950.7 (82.85)
Regional banks (B)	16,007.0 (14.23)	20,421.0 (14.63)	23,147.9 (13.83)	26,164.7 (12.30)	32,651.7 (12.28)	41,506.2 (11.51)	51,487.1 (11.72)
Commercial banks (A + B)	112,501.9 (100.0)	139,622.0 (100.0)	167,426.6 (100.0)	198,488.0 (93.30)	250,271.9 (94.12)	340,543.0 (94.41)	415,437.8 (94.57)
Foreign banks	–	–	–	14,246.8 (6.70)	15,630.5 (5.88)	20,161.7 (5.59)	23,861.3 (5.43)
Total	112,501.9 (100.0)	139,622.0 (100.0)	167,426.6 (100.0)	212,734.8 (100.0)	265,902.4 (100.0)	360,704.7 (100.0)	439,299.1 (100.0)

Source: Bank of Korea (1997).

Note: Numbers in parentheses are composition ratios.

[a]Includes deposits and certificates of deposit.

business because of the high cost of building a retail network and the regulation of capital movements in Korea.[1] More foreign banks, however, may enter the retail banking business when the Multilateral Agreement on Investment is signed by the OECD member countries.

9.3.4 Market Concentration in the Banking Market

Banking market structure studies apply the structure-performance hypothesis to the banking industry. According to the hypothesis, the degree of competition among banks is influenced by the degree of concentration of output among a few relatively large banks, since a more highly concentrated market structure is assumed to be conducive to more effective collusion. The measures of performance, used as indicators of the degree of competition among banks, include bank profit rates, lending interest rates, and bank deposit rates (see Gilbert 1984, 617–45).

The structure-performance hypothesis implies that there may exist a positive correlation between market concentration and performance. Bank lending rates are influenced by the market structure of the banking industry. According to Jacobs (1971) and Rhoades (1982), bank lending interest rates tend to rise when there is a rise in the market concentration ratio. Thus market concentration seems to have a significant influence on bank lending interest rates.

We apply the structure-performance hypothesis to the banking industry in Korea. We use the Herfindahl-Hirschman index (HHI), better known as the Herfindahl index, to measure the degree of concentration of output in banking markets in Korea. Because of the importance attached to market concentration as an indicator of competition and the relative ease of calculating the Herfindahl index, this index serves as an efficient screening tool for regulators. The guidelines of the U.S. Justice Department, as applied to the banking industry, specify that if a bank merger would result (1) in a postmerger HHI in a market of less than 1,800 or (2) in a change in the HHI of less than 200, it is likely that the market structure would not reach a concentration level high enough or the concentration would not increase enough to give firms in the market the power to maintain prices above the competitive level for a significant period (see Rhoades 1993, 188–89).

After interest rates were deregulated in November 1991, the market concentration ratio in the banking industry, measured by the HHI, steadily declined to 716 at the end of 1996 from 917 at the end of 1990 (table 9.7). The market share of the top five commercial banks also declined steadily to 49.0 percent from 59.7 percent in 1990. These developments seem to reflect the entry of four new banks into the banking market and the homo-

1. In general, foreign exchange can only be purchased for approved purposes, primarily current account operations and permitted capital transactions.

Table 9.7 Market Concentration of Commercial Banks in Korea

Measure and Bank Type	1990	1991	1992	1993	1994	1995	1996
Herfindahl-Hirschman index							
Nationwide commercial banks	863	803	777	736	684	678	675
Regional banks	55	56	49	52	50	43	41
All banks	917	859	826	788	735	722	716
Top five banks	725	667	629	581	541	511	512
Market share (%)							
Top five banks	59.7	57.3	55.7	53.4	51.7	49.1	49.0

Note: Based on all won-denominated deposits at the end of the period.

geneous competitive market structure. Commercial banks offer similar deposit instruments to firms and households.

Since the deregulation of interest rates, the strong traditional relationship between banks and large firms has weakened. The weight of bank loans in total funding by large firms has shown a substantial decline, as companies increased funding through the corporate bond and commercial paper markets. Bank loans to small and medium-size firms and households have risen sharply to account for a larger share of overall loans. Commercial banks have adopted a new policy in determining lending rates; bank customers who consolidated their financial affairs at one bank started being offered favorable terms for loans and various kinds of free services such as tax consulting. Banks also began to put more emphasis on private banking.

9.4 Financial Deregulation and Monetary Policy

9.4.1 Monetary Policy

The deregulation of financial markets and the modification of regulations governing financial instruments and financial institutions will require changes in the operation of monetary policy, which is based on the monetary targeting of the broadly defined money supply, M2. The complete deregulation of interest rates in financial markets will necessitate a monetary control system based on interest rates. The Bank of Korea (BOK) frequently used repurchase agreements and monetary stabilization bonds (MSBs) for its daily operations. Changes in the operating procedures for monetary policy in the 1990s have led to reliance on the market-based allocation mechanism for open market instruments. The BOK reintroduced a system of auctions for the issuance of MSBs to nonbank financial intermediaries in April 1993 and applied it to banks as well in December 1995. Though very limited in size and frequency, sales of MSBs by auction to the general public, including nonbank financial intermediar-

Table 9.8 **Open Market Operations of Monetary Stabilization Bonds (billion won)**

Operation	1988	1990	1992	1993	1994	1995	1996
Issuance	16,967	20,262	24,853	29,796	34,879	39,458	30,725
Direct sale	1,575	4,918	10,468	18,917	25,045	27,215	7,019
Auction and acceptance	15,392	15,344	14,385	10,879	9,834	12,243	23,706
Redemption	9,768	22,327	18,085	25,858	33,740	38,974	31,520
Outstanding	15,374	15,241	20,264	24,202	25,340	25,825	25,030
Outstanding/M2 (%)	31.4	22.2	21.1	21.6	17.0	16.8	14.0

Source: Bank of Korea, *Annual Report* (Seoul, various issues).

ies, were tried by the BOK in 1998 and 1989 (Kang 1993, 201–25). The rate on MSBs issued by competitive bidding applies equally to all successful bidders through the Dutch auction method as with repurchase agreements. The level of discount rates of MSBs is slightly below market interest rates, reflecting the standing of the BOK. The direct sale rate to sixty-four primary dealers is set at a slightly lower rate than the competitive bidding rate (J. Kim 1996, 29–57); see table 9.8. However, mandatory allocations continue to be used to a considerable degree, particularly on special occasions, such as the allocation of MSBs in April 1997 to offset the effects of a cut in the reserve requirement ratio in February 1997. In order to reduce high reserve requirements, bank deposit reserve ratios were lowered in three steps from 11.5 percent in 1990 to 2.0 percent and 5.0 percent for demand deposits and savings deposits, respectively, in 1997 (see IMF 1996, 74). Cuts in deposit reserve ratios also helped to correct the comparative disadvantage of banks relative to nonbank financial intermediaries.

Since 1989, the BOK has made greater use of the sale and purchase of government and public bonds under repurchase agreements in controlling the banks' short-term liquidity. In 1995, about 80 percent of repurchases were implemented using auction-determined rates, the remainder being allocated administratively at slightly lower interest rates. Repurchase operations involve some administrative allocations to banks (see OECD 1996, 70). In order to reduce the banks' access to the BOK's rediscount facility, an overall ceiling on refinancing was introduced in 1994. The outstanding amount of BOK rediscounts was reduced to sterilize the effects of a cut in the deposit reserve ratio in 1997.

In April 1996, the monetary authorities increased the statutory minimum maturity of bank trust accounts. Starting in May 1996, households and firms began to shift out of trust accounts and into bank savings deposits and savings instruments offered by nonbank financial institutions. The portfolio shifts led to a sharp increase in the growth rate of M2. They did not, however, influence MCT and M3.[2] The monetary authorities chose

2. MCT comprises M2 plus certificates of deposit and trust accounts.

to implement a monetary targeting policy based on MCT rather than M2 in 1997.

9.4.2 Interest Rate Deregulation and the Monetary Transmission Mechanism

The income velocity of M2 has fluctuated greatly due to changing regulations and improving transactions technology (fig. 9.4). In contrast, the income velocity of M3 has been more stable, with a standard deviation of 2.15 compared with a standard deviation of 2.64 for M2 during the 1987–96 period.

The money demand equation was specified as

$$(2) \qquad \ln(M/P)_t = a_0 + a_1 \ln r_t + a_2 \ln y_t + a_3 \ln(M/P)_{t-1} + u_t .$$

In the above equation, M/P represents real money stock, r the weighted average of savings and time deposit rates, y the industrial production index, and u the error term. The Kalman filter is applied to update the coefficient a_1. Figure 9.5 delineates movements of the coefficient a_1 for M2 and M3. The interest rate elasticity of demand for M2 seemed to increase remarkably from 1992 due to interest rate deregulation and financial liberalization.

We attempt to estimate the relations, among money supply, output, the inflation rate, and the interest rate to examine whether there has been a significant change in the role of the interest rate in the monetary transmission mechanism in Korea since interest deregulation in the early 1990s. Four variables are included in the vector autoregression (VAR) model:

$$(3) \qquad Y_t = C_0 + \sum_{j=1}^{n} \beta_j Y_{t-j} + U_t ,$$

where Y_t is a 4 × 1 vector of endogenous variables, C_0 is a 4 × 1 vector of constant terms, the βs are 12 × 4 matrices of coefficients, and U_t is a

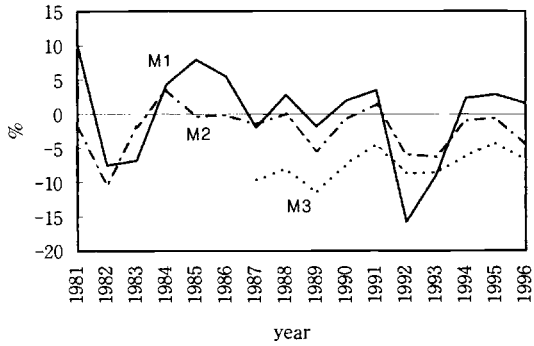

Fig. 9.4 Income velocity of money (percentage change)

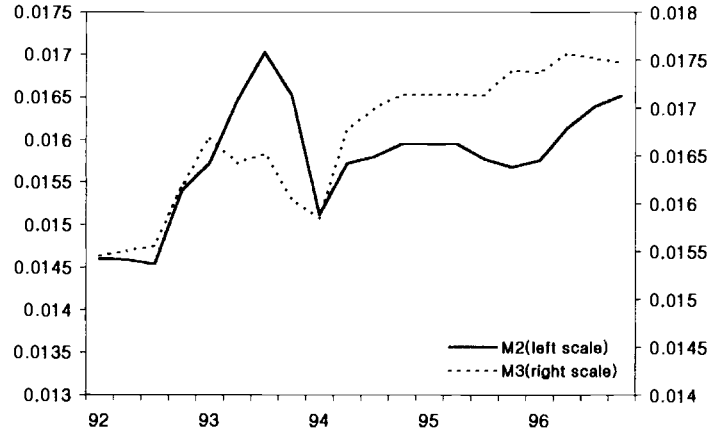

Fig. 9.5 Interest rate elasticity of demand for money

4 × 1 vector of disturbances. In this VAR model, twelve lags of each variable are included for estimation. Considering the endogeneity of money supply, we chose the following ordering among the four variables: the level of market interest rates, the CPI inflation rate, the industrial output growth rate, and the rate of increase in the money supply (M2; see Hahm and Lee 1997, 51–98).

Based on the estimated coefficients, an impulse response function was used to appraise how the interest rate responds to various kinds of shocks to the economy. In addition, we endeavor to examine whether there is any evidence of change in the monetary transmission mechanism in light of the interest rate deregulation in 1991 and financial liberalization in the 1990s. The sample was split at the end of 1991 (see IMF 1996). The specified VAR model was estimated using monthly, seasonally adjusted time series for two sample periods: 1980:1–96:12 and 1980:1–91:12. The three-year corporate bond yield was used as the market interest rate. The results were similar to those found by IMF studies (see IMF 1996).

Interest rate responses to shocks in the money supply, inflation, and output growth are presented in figure 9.6. The solid lines represent the impulse responses based on the 1980:1–96:12 sample, and the dashed lines represent those based on the 1980:1–91:12 subsample. The results for the two different sample periods are generally similar. The main findings are described below. First, in response to an increase in money supply growth, the nominal interest rate begins to fall steadily in the first three months, with a lag of about two months, and then rises to its original level for the subsample period. The response of the interest rate to an increase in money supply growth is weaker for the whole sample period than for the subsample period. Second, a rise in inflation leads to a significant rise in

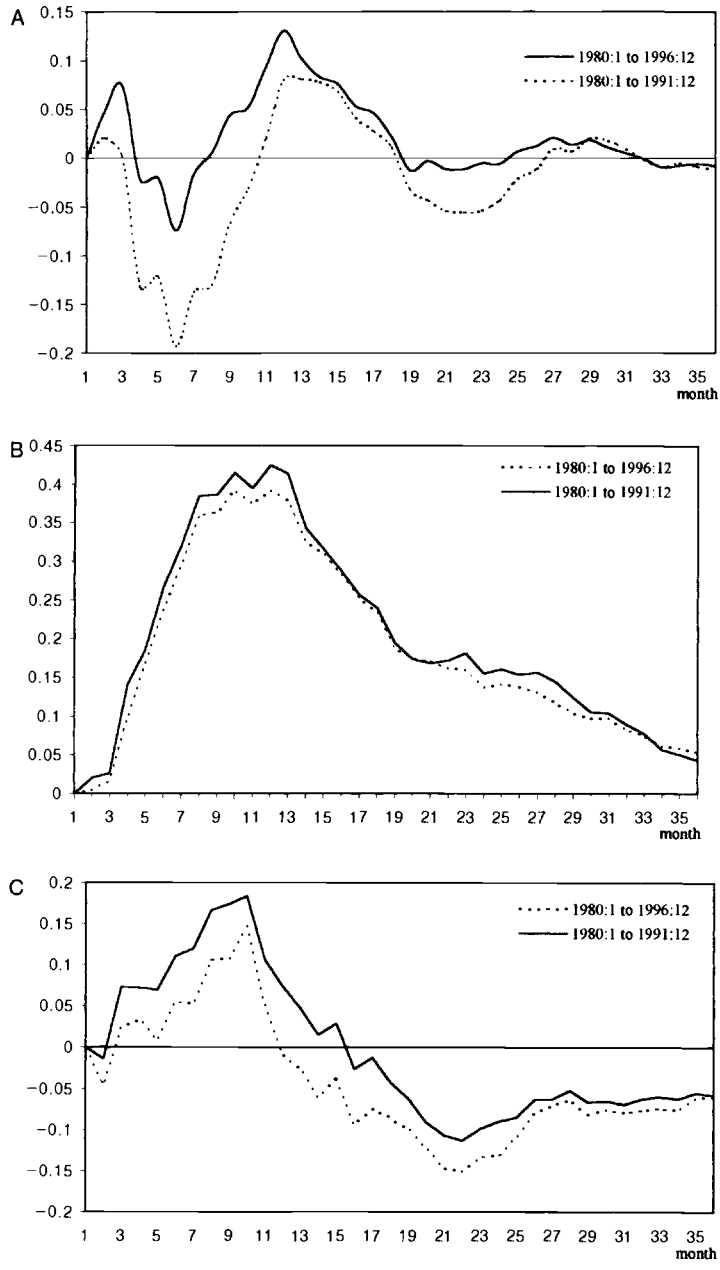

Fig. 9.6 Impulse response of corporate bond rate to contemporaneous shocks in economy

Note: Response to shocks in (*A*) money supply, (*B*) inflation rate, and (*C*) industrial output.

the nominal interest rate. Third, the response of the nominal interest rate to shocks in output growth shows a procyclical pattern.

As an indicator of the stance of monetary policy, the three-year corporate bond rate may not be a good proxy for a short-term interest rate that is directly affected by the BOK through operations in the money market. Therefore, the interbank call rate was used as the market interest rate in the next empirical study. Interbank call rate responses to shocks in money supply, inflation, and output growth are presented in figure 9.7. The sample was split at the end of 1993. The VAR model was estimated using monthly, seasonally adjusted time series for two sample periods: 1988:8–96:12 and 1988:8–93:12. In the second VAR model, six lags of each variable are included for estimation. In response to an increase in money supply growth, the interbank call rate rises in the next month and then declines to its original level for the subsample period. For the whole sample period, the interbank call rate rises steadily in the first four months and then declines to its original level in response to an increase in money supply growth. The puzzling phenomenon that the interbank call rate rises in response to an increase in money supply growth may reflect the expected tightening of liquidity in the money market. The BOK used to tighten monetary policy when M2 growth rates approached or exceeded the annual growth target.

9.5 Financial Deregulation and the Fragility of Banks

The rate of return on total assets of nationwide commercial banks continued to fall from 0.55 percent in 1990 to 0.23 percent in 1996 (table 9.9). The rate of return on total assets of regional banks also declined from 1.11 percent in 1990 to 0.47 percent in 1996. The sharp drop in bank profitability seems to have been due mainly to reduced interest rate margins and significant amounts of nonperforming loans held by commercial banks, some of which stem from recent credit card businesses. Furthermore, commercial banks considerably expanded write-offs of nonperforming loans as the bank supervision authorities suggested they do so.

The share of nonperforming loans of commercial banks steadily declined from 2.1 percent in 1990 to 0.8 percent in 1996 (table 9.10). Nonperforming loans, however, include only loans that are classified as "questionable loans" (Class III) and "estimated loss loans" (Class IV) by commercial banks.[3] The share of "unsound loans," which includes substandard loans (Class II, also commonly known as "fixed loans") and nonperforming loans, amounted to 5.1 percent at the end of 1996.[4] The share

3. Questionable loans are defined as those against which actions of collection or other measures are needed and that are not secured by collateral. Estimated loss loans are defined as bad loans that are judged to be uncollectable.

4. Fixed loans are defined as those against which actions or other measures are needed and that are secured by collateral.

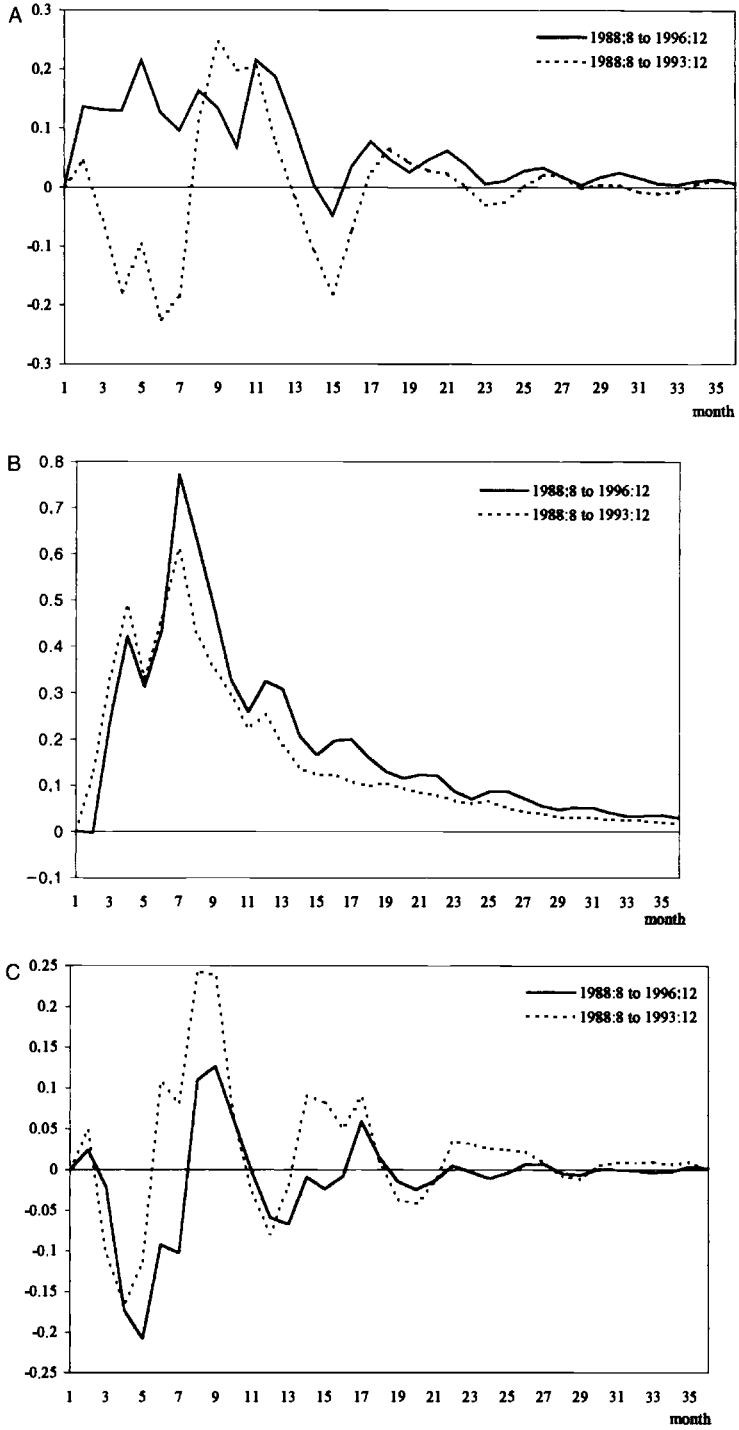

Fig. 9.7 Impulse response of interbank call rate to contemporaneous shocks in economy

Note: Response to shocks in (*A*) money supply, (*B*) inflation rate, and (*C*) industrial output.

Table 9.9 Rate of Return on Total Assets of Commercial Banks, Trust Accounts Included (percent)

Bank Type	1990	1991	1992	1993	1994	1995	1996
Top five nationwide commercial banks	0.54	0.49	0.49	0.36	0.38	0.22	0.08
All nationwide commercial banks	0.55	0.54	0.54	0.41	0.40	0.28	0.23
Regional banks	1.11	0.89	0.68	0.67	0.53	0.56	0.47
Commercial banks	0.63	0.59	0.56	0.45	0.42	0.32	0.26

Source: Bank of Korea (1996).

Table 9.10 Share of Nonperforming Loans (I) of Commercial Banks (percent)

Bank Type	1990	1991	1992	1993	1994	1995	1996
Nationwide commercial banks	2.2	1.9	1.8	1.9	1.0	0.9	0.8
Regional banks	1.4	1.0	0.9	1.0	0.9	1.0	0.9
Commercial banks	2.1	1.8	1.7	1.8	1.0	0.9	0.8

Source: Bank of Korea (1997).
Note: Nonperforming loans (I) (NPL(I)) = Estimated loss + Questionable.

Table 9.11 Capital Adequacy Ratios of Banks (percent)

Bank Type	1990	1991	1992	1993	1994	1995	1996
Five major banks	7.7	7.4	10.24	10.14	10.46	9.21	8.86
Nationwide commercial banks	8.5	8.2	10.40	10.40	10.19	8.97	8.97
Regional banks	13	11.6	16.34	14.86	13.11	11.44	10.15
Commercial banks	9.1	8.7	11.18	11.00	10.62	9.33	9.14

Source: Bank of Korea (various issues).
Note: Capital adequacy ratios are based on Bank for International Settlements criterion from 1992.

of "abnormal loans," which includes "caution-needed loans" (Class I) in addition to "unsound loans," was 14.3 percent at the end of 1996. The current average nonperforming loan ratio of the six major nationwide commercial banks is estimated at around 5 percent by international standards, according to the Presidential Commission for Financial Reform (1997, 2).

The recent economic downturn and the inadequate credit assessment by banks brought about new nonperforming loans and exacerbated the banks' bad-loan problems and pushed down their capital adequacy ratios (table 9.11). There was evidence of deterioration in the balance sheets of commercial banks. In 1997 nonperforming loans of banks increased substantially, as shown in table 9.12.

Table 9.12 **Share of Nonperforming Loans (II) of Commercial Banks (percent)**

	1990	1992	1994	1995	1996	1997	December 1998
NPL (II) ratio	7.5	6.7	5.6	5.2	3.9	5.8	7.4

Source: Financial Supervisory Commission, FSC press release, 3 March 1999.
Note: Nonperforming loans (II) (NPL(II)) = Substandard + Estimated loss + Questionable. Figures from the end of 1996 on include the Housing and Commercial Bank; those from the end of 1997 on include the Long-Term Credit Bank and not the five closed banks.

Rapid increases in nonperforming loans among banks and merchant banking corporations resulting from a series of large corporate bankruptcies have destabilized the financial market and quickly translated into a currency crisis. In order to deal with the increase in nonperforming loans, the government has established a special institution, the Korea Asset Management Corporation, modeled after the Resolution Trust Corporation in the United States, which deals with the resolution of bad loans of commercial banks. The government has also set up a special bad-loan resolution fund of 20 trillion won to finance the operation.

9.6 Concluding Remarks

The strengthening of the international competitiveness of financial markets and institutions has become a major financial policy objective in Korea as in other industrialized as well as in developing countries. The Presidential Commission for Financial Reform was established to accelerate and to broaden the process of financial liberalization and deregulation in early 1997. Priority will be placed on transforming the financial industry into a strategic core industry through competition and structural reorganization (Presidential Commission for Financial Reform 1997, 9).

Financial deregulation has led to an irreversible transformation of the domestic financial environment. Since interest rate deregulation, the difference between market interest rates and bank interest rates has been reduced. Commercial banks began to expand their branch networks in order to strengthen their retail businesses. Five major nationwide commercial banks emerged as market leaders in setting prime lending rates in the banking market. Smaller banks and regional banks have tended to follow the leaders in the banking market in major decisions, which includes setting prime lending rates and fees for services. A significant change occurred in bank loan portfolios. Commercial banks have expanded loans to small and medium-size firms and households since interest rate deregulation. Households are now able to obtain loans from financial institutions more easily than in the past. Interest rate margins of nationwide commercial banks came down strikingly between 1990 and 1994. After the interest

rate deregulation in 1991, the market concentration ratio in the banking industry steadily declined in the 1990s. Market concentration through mergers and acquisitions, however, has not occurred yet in the banking market.

Interest rate elasticity of demand for M2 seemed to increase remarkably from 1991 due to interest rate deregulation and financial liberalization. Changes in regulations governing financial instruments recently prompted portfolio shifts between savings instruments of banks and nonbank financial institutions. The portfolio shifts led to unstable demand for M2. Thus the monetary authorities decided to replace M2 with MCT, which comprises M2 plus certificates of deposit and trust accounts, as an intermediate target variable in 1997. Financial liberalization, however, is likely to make the demand for money increasingly unstable. Therefore, there may be advantages to moving the monetary objective away from rigid targeting of M2 or MCT. Deregulation may necessitate the relinquishment of earlier modes of policy implementation that provided some advantages of simplicity and control to the monetary authorities.

The recent economic downturn and the inadequate credit assessment by banks brought about new nonperforming loans and exacerbated the banks' bad-loan problems. Weaknesses in the structure and performance of the corporate governance of commercial banks have surfaced with the Hanbo loan scandal in 1997. The deregulation process may involve transitional risks and costs. Korea's financial system will not become internationally competitive without the presence of some financially and managerially strong banks and other financial institutions.

Restrictions on competition in fees and commissions among members of the stock exchange and insurance companies still limit the scope for price competition in this area of financial services. The government should continue to adopt policies that promote and provide more scope for competition in the financial service market. The government authorities may have to increasingly use the instrument of competition rules in order to dismantle all sorts of cartel agreements in the financial service industry.

The government authorities have pursued gradual deregulation and favor restructuring financial institutions in several steps to reduce the shocks and uncertainties to financial markets. On the other hand, the Presidential Commission for Financial Reform recommended a big-bang-type full liberalization in December 1997. The commission seems to think that such liberalization might solve many problems in Korea's financial markets in a single stroke. It is an open question which approach would offer a better solution in Korea. It remains to be seen whether the commission's recommendation can be implemented in the coming months before the presidential election in late 1997. If not, the recommendations might be handed over to the next government for implementation.

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Comment Shinji Takagi

Moon-Soo Kang discusses the effect of bank deregulation on (1) interest rate margins, (2) market concentration, and (3) the channel of monetary

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policy in Korea. The fundamental question here is this: how should we assess the quantitative effect of bank (or banking sector) deregulation? In addition to the three criteria the author examines in the text, one can also suggest, among others, (4) bank profitability, (5) consumer or depositor gains, and (6) arbitrage with market interest rates as additional criteria. I raise these issues because I see no logical necessity that bank deregulation must affect some of these quantitative indicators in a particular way. In fact, many of them are affected not only by deregulation but also by many other factors, including the risk factor, transactions costs, profitability, bank behavior, and general macroeconomic conditions. The findings of the paper, therefore, are probably specific to the macroeconomic, legal, and institutional environment within which Korea's deregulation policy took place.

On a more basic level, one is struck with a parallelism that exists between the experience of Korea and that of Japan. Both Korea and Japan took a slow and gradual approach to financial liberalization. Both are now contemplating a big bang approach to full liberalization. The parallelism, however, ends here. Japan was "forced" to liberalize its financial market because of the need to finance large issues of government bonds resulting from the widening fiscal deficits in the 1970s and because of the liberalization of cross-border capital flows prompted by sustained current account surpluses (and the associated accumulation of foreign assets and foreign pressure to open up the domestic capital markets) in the 1980s. In other words, necessity was the driving force behind Japan's financial liberalization. Likewise for the recently announced big bang (in which the financial system is to be fully deregulated by the year 2001), the government was forced to react to the declining international status of Japanese financial markets and the awareness that Japan's financial industry would be in danger of losing international competitiveness entirely. But what is the driving force for change in Korea?

The Japanese experience has been reasonably explainable in terms of political economy considerations. Government authorities are reluctant to deregulate the financial markets because financial regulation is a significant source of power and authority. Thus deregulation and other institutional change generally occur only as necessity dictates. In the case of Korea, however, there is no such clear picture of forces driving the government authorities to pursue the policy of financial liberalization. Are the Korean authorities driven by their awareness that a deregulated financial system is inherently superior in terms of resource allocation and other efficiency considerations? If so, unlike the Japanese authorities they are driven not by necessity but by reason. Reason *should* be the principle of action in all intelligent beings, but experience tells us that it is often not sufficient to effect a significant institutional change. Was the first attempt at interest rate deregulation abandoned in 1989 precisely because it was

conceived by reason and not driven by necessity? If Korea is following the dictates of reason or simply the lead of Japan, one cannot help but be a little skeptical about the future success of the Korean big bang.

Comment Sang-Woo Nam

Financial deregulation in Korea has indeed been very cautious and slow, as Moon-Soo Kang states in the paper's introduction. Kang assesses that this policy of gradualism has been pursued in order to give less competitive financial institutions enough time to adjust to a more competitive environment in the financial market. The less competitive financial institutions include nationwide commercial banks with a heavy burden of nonperforming loans, which have been the major victims of government industrial policy since the early 1970s. To a large extent, the accumulated nonperforming loans represent a deadweight loss due to broad government intervention in resource allocation. Unlike in the 1970s, most of these nonperforming loans may have resulted from the moral hazard behavior of major *chaebols* and financial institutions rather than direct government intervention. However, if the government's promotion of industry and the way the government has handled corporate financial distress and defaults in the past have induced *chaebols* and financial institutions to believe that they are "too big to die," the government should be held responsible. The neglect of credit evaluation and the moral hazard behavior of banks was also due to the weak governance of the nationwide commercial banks in the midst of continued government intervention in the management of these privatized banks.

The question is how to deal efficiently with this deadweight loss of nonperforming loans. More specifically, we have to ask whether gradualism has been a cost-effective way of dealing with the deterioration of bank loans. Politically, it must have been the most inexpensive way. As the financial sector keeps growing in terms of total credit, the share of nonperforming loans in total credit is supposed to be declining as long as the size of nonperforming loans remains more or less constant. In this way, it was hoped that the problem would ease and, in time, disappear without any attention or criticism from the public. The government would then not need to admit the failure of past policies because the failures would not be exposed explicitly.

This approach, however, seems to have been fairly expensive economically. It has resulted in delays in dealing with insolvent corporations and

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in continued resource flows to these firms in distress. The practice of loan repayment guarantees among the subsidiaries of *chaebols* has also contributed to this phenomenon. More important, the delayed and slow process of financial liberalization must have cost the economy a lot. Lack of competition in the financial sector means inefficiencies in the operation of intermediaries and in the allocation of resources among different uses and industries. Stronger governance of commercial banks would have eased the problem of moral hazard on the part of these banks and *chaebols* as well. Cleaning the balance sheet of banks—in other words, separating the nonperforming loans from banks—would have been more cost-effective economically. Freed from the legacies of the past, the banking sector could have been forced to compete rigorously with nonbank financial institutions as well as foreign intermediaries on an equal footing. It is indeed surprising that there has been little serious discussion about how to deal with the deterioration of bank loan portfolios and the potential cost of gradualism in (domestic) financial deregulation. Kang mentions this issue in both the introduction and the conclusion of the paper but leaves out any serious discussion of this important subject.

The paper seems to evaluate the impact of Korea's financial deregulation rather positively in spite of the cautious and slow process of liberalization. The findings include the expansion of commercial bank branch networks, increased loans to small and medium-size firms and consumers, reduced interest margins, and a declining market concentration ratio in the banking industry. Of these, the expansion of commercial bank branch networks may not be desirable if it is simply the result of costly, zero-sum efforts to attract deposits when there is no lack of deposit outlets even in remote areas with agricultural cooperatives, post offices, and other small community-based financial intermediaries.

The evidence of reduced interest margins after interest rate deregulation is not very convincing either. As Kang notes, lending rates have been deregulated faster than deposit rates. This sequence was mainly due to the relatively weak impact of lending rate deregulation on the market, rather than to its expected effect on fund allocation. As is well known, banks generally have ways of circumventing lending rate regulations. For instance, by requiring borrowers to put a portion of what they borrow in deposits (compensating deposit balance), banks can keep their effective lending rates close to market rates. Starting in 1991 there seems to have been a change in the method of calculating the average balance of checking accounts that made the average deposit interest rate much higher. It was only in November 1991 that the first stage of interest rate deregulation went into effect, and only interest rates on time deposits with a maturity of three years and over were deregulated. Thus it is hard to believe that the higher average deposit interest rate in 1991 was due to interest rate deregulation and the consequent increase in competitive pressure for

banks. Between 1991 and 1995, the interest margin actually widened from 2.2 to 3.0 percentage points.

Similarly, Kang ascribes the declining rate of return on bank assets to the narrowing of interest margins and the reduced share of nonperforming loans. The real picture seems to be that interest margins widened rather than narrowed, and the reduced share of nonperforming loans might simply reflect increased write-offs of these loans. In the situation where banks were forced to write off large amounts of nonperforming loans and profits were squeezed, they might have no other option than widening interest margins in order to minimize profit deterioration.

Finally, the measured interest rate elasticity of demand for money shows opposite movements for M2 and M3. This may be due to a deficiency in the specification of the money demand equation. As an interest rate variable, the bank deposit interest rate could also be tried in addition to the corporate bond yield for the M2 demand equation. The inflation rate might also be important, as it represents the cost of holding money. Specification of the equation might be improved when the interest rate (and cost) variables are tried in the form $\ln(100 + r)$ (rather than $\ln r$), $\ln[(100 + r)/(100 + r_d)]$, or $\ln(100 + r_p)$, where r_d is the representative bank deposit interest rate and r_p is the inflation rate.