2010

Academic Paper Series

On Korea

Volume 3

Contents:

Korea Economic Institute

Table of Contents

Global Financial Crisis and Systemic Risks in the Korean Banking Sector

by Myung-koo Kang

Introduction

Financial crises are more common than people usually expect. In fact, 139 financial crises from 1973 to 1997 have been identified by Eichengreen and Bordo,[1] and they concluded that the frequency of the crises is increasing although these crises are not necessarily becoming more severe. Recently, Laeven and Valencia filed a data set covering 124 systemic banking crises from 1970 to 2007,[2] and Reinhart and Rogoff also convincingly showed, based on a long-term historical database for the past eight centuries, that international debt and banking crises, currency crises, and defaults have been a very common, historical phenomena.[3] Most countries have passed through various types of external debt crises as their financial sectors become more liberalized and integrated into the global financial markets.[4]

Since World War II, however, the current global financial crisis has been unmatched in its scope and depth of negative impacts on the global economy.[5] Advanced economies are going through the deepest recession since World War II, and the crisis is spilling over to emerging and developing countries.[6] The International Monetary Fund (IMF) estimates that the global economy will shrink for the first time since World War II during the coming year.[7] In particular, accelerated financial deleveraging[8] has had immediate impacts on global demand, and it is posing serious challenges to the global economy, regardless of the soundness or "fundamentals" of each national economy. Currently, deleveraging is posing a serious challenge to the export-driven East Asian economies,[9] and the Korean economy is no exception.

Various ominous economic indicators have created a sense of foreboding: if the crisis is not managed well, the current Korean economic situation could escalate into a much more serious crisis than the financial crisis Korea had to go through a decade ago during the Asian financial crisis. Since the last quarter of 2008, when the financial turmoil originating from the subprime mortgage problem in the United States came to be a full-blown global crisis after the bankruptcy of Lehman Brothers on 15 September, both exports from and imports to Korea have rapidly decreased, while macro financial

---

Dr. Kang is an assistant professor in the Government Department of Claremont McKenna College.

instability has been increasing. The gross domestic product (GDP) growth rate of Korea—one the lowest growth rates among OECD countries—shrank to –5.6 percent from the preceding quarter.[10]

The Korean financial markets are suffering from massive financial deleveraging by foreign investors as well. As a symptom of this financial deleveraging, the Korean currency has sharply depreciated—one of the highest depreciation rates among major currencies—and is fluctuating against the U.S. dollar. Among others, two factors currently pose a concern for the potential for a systemic banking crisis in Korea: (1) a remarkably increasing short-term foreign debt,[11] especially from 2006 onward; and (2) the highly leveraged banking sector joined by household debt that rose to 158 percent of disposable household income by the end of 2008, which is above the U.S. level (142 percent) and close to that in the United Kingdom (185 percent).[12] What, then, went wrong in the Korean case?

The above question may be unfair if the intention is to find a political scapegoat responsible for the current situation because the current global financial crisis originated not from Korea but from the epicenter of the global financial markets, the U.S. financial markets, owing to the credit and asset bubble accelerated through the securitization of various financial derivatives.[13] We may also reasonably claim that the Korean economy, including other emerging markets, is suffering regardless of the soundness of its economic fundamentals. Furthermore, policy measures by the Korean government against the current economic downturns are constrained by the pace of restoring stability in the global financial markets and the upturn swing of the business cycle of the global economy. Questions on this issue are, however, reasonably raised in order to learn policy lessons to prevent or at least minimize the cost of systemic banking crises in the future.

In this paper, I argue that, despite the Korean government's tremendous achievement in transforming the country's depressed financial markets into more globalized and open ones, the financial deregulation measures pursued by the government for the past decade have increased the vulnerability of the Korean banking sector to external shocks. Specifically, the Korean government has aggressively attempted to deregulate foreign exchange, both inward and outward capital flows, while the Korean currency has not been fully internationalized; and the government has allowed the reckless practices of short-term foreign borrowing by domestic branches of foreign banks without establishing an appropriate monitoring system. The current situation demands a new regulatory framework that can prudentially supervise the financial system, not only for promoting efficient financial intermediation of cross-border capital flows and the soundness of individual financial institutions but also for managing the systemic risks of the entire

financial system. This regulatory reform will certainly be a challenging task under the increasingly globalized financial intermediation, not only for the Korean government but also for other governments in the world. Moreover, the current financial crisis highlights that the highly leveraged, external borrowing model of economic growth cannot be sustained as before.

Discussion will proceed, first, by reviewing the sharp currency depreciation and the outflow of foreign investors' portfolio investment from the Korean stock market especially. We will then explore the reasons for the increasing short-term foreign debt and household debt in the banking sector by reviewing the financial deregulation measures adopted by the Korean government in regard to foreign exchange and banking activities. Last, some lessons and policy implications will be discussed.

Immediate Impacts of Global Financial Crisis on Korea

Sharp Currency Depreciation

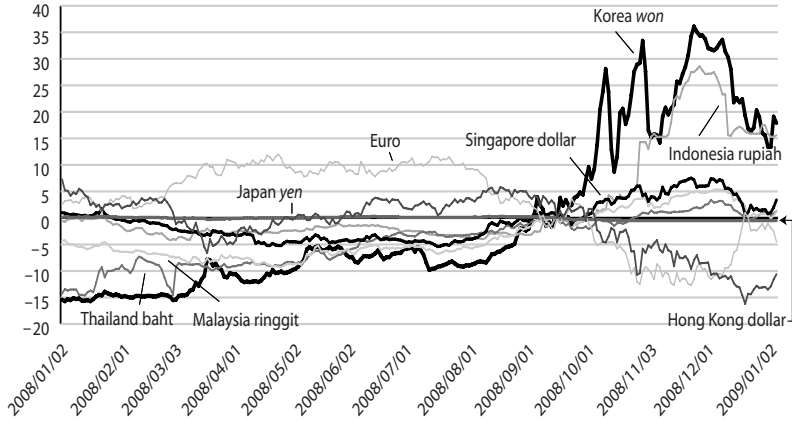
One of the most immediate impacts of the current global financial crisis on Korea has been reflected in the sharp depreciation of the Korean currency. The real effective foreign exchange rate of the Korean won depreciated much more sharply than the currency of any other OECD country in 2008.[19] The Japanese yen has been the most appreciated currency against U.S. dollar for the past year, and it has appreciated approximately 20 percent. Half of the currencies of OECD countries have appreciated and half depreciated. In the case of the Korean won, it depreciated about 28 percent in 2008. Except for Iceland, which has declared national default during the current global financial crisis, the Korean won depreciated the most among the currencies of OECD countries.

Even when we compare the degree of currency fluctuation among Asian currencies, specifically before and after the bankruptcy of Lehman Brothers on 15 September 2008, we can observe a similar pattern: the Korean exchange rate has depreciated more sharply than any other Asian currency (***Figure 1***). The Hong Kong dollar and Singapore dollar have depreciated, but their range of fluctuation was minimal. The Malaysian ringgit and Thai baht depreciated as well, but both these currencies depreciated less than 10 percent compared with their previous levels. The Indonesian case is much worse, and the rupiah has depreciated more than 20 percent. But the Korean won has depreciated more sharply than the Indonesian rupiah.

Why has the Korean won been so vulnerable during the current global financial crisis?[20] An immediate conventional answer to this question is the high degree of trade dependency of the Korean economy. In fact, the

Korean economy in 2008 suffered on account of the aggravating terms of trade, and both exports and imports have decelerated, in particular, since the fourth quarter of 2008. But, because imports have decelerated more rapidly than exports, the current account balance did not severely worsen earlier. Instead, the overall size of Korea's trade volume has rapidly decreased in accordance with the declining global demand (***Table 1***).

Figure 1. **Comparison of Fluctuation of Currencies of Selected Countries January 2008–January 2009 Range (% of currency fluctuation)**



Source: Bank of Korea. http://ecos.bok.or.kr/.

It is true that Korea achieved rapid economic growth in the past by promoting exports. In 1961, exports totaled only $40 million, but exports reached more than $375 billion in 2007. Thus, Korea's exports have increased more than 9,000-fold during the past 46 years. The country's export growth has been amazing, but the growth has become a structurally vulnerable aspect of the Korean economy as well. Owing to the current global financial crisis, external demand has sharply decreased, and the Korean economy is suffering. More specifically, the Chinese market has emerged as Korea's single largest export market since 2002, replacing the U.S. market, and Korean exports to the European Union (EU) have been greater than its exports to the U.S. market since 2005. In 2007 about $100 billion in goods and services were exported by Korea to Hong Kong and mainland China. In total, exports to four major regions and countries—China, Japan, the EU, and the United States—make up more than 60 percent of Korean exports. Therefore, if these economies suffer, Korean exports will decrease, and the Korean economy will suffer.

Export dependency or an export-oriented economic structure, however, cannot explain the exceptionally vulnerable situation of the Korean economy

Table 1: **Korea's Imports and Exports, January 2008–January 2009 in billions of U.S. dollars**

		2008 /01	2008 /02	2008 /03	2008 /04	2008 /05	2008 /06	2008 /07	2008 /08	2008 /09	2008 /10	2008 /11	2008 /12	2009 /01
Current account balance		–2.75	–2.35	–0.11	–1.58	–0.37	1.82	–2.53	–4.69	–1.35	4.75	1.90	0.86	–1.63
Imports (by use)	Total	36.3	32.6	37.1	38.3	38.7	37.8	42.9	40.4	39.5	36.1	28.8	26.6	24.7
	For domestic	21.6	19.5	22.1	23.1	22.6	21.6	24.4	22.9	22.0	21.9	18.0	17.8	15.9
	For export	14.7	13.1	15.0	15.2	16.1	16.2	18.5	17.5	17.5	14.2	10.8	8.8	8.8
Exports	Total	32.3	31.2	36.0	37.8	39.4	37.3	40.9	36.6	37.4	37.1	28.8	27.1	21.3
	United States	3.65	3.35	4.08	4.23	3.87	4.21	4.14	3.54	3.83	4.43	3.49	3.49	2.63
	Japan	2.33	2.25	2.41	2.49	2.52	2.59	2.61	2.20	2.29	2.44	2.07	1.99	1.53
	China	7.26	6.43	8.33	8.64	8.91	8.71	8.96	8.53	8.09	7.46	5.29	4.71	4.46
	Hong Kong	1.36	1.32	1.67	1.82	1.74	1.78	2.20	1.73	1.81	1.70	1.53	1.07	1.11

Source: Bank of Korea. http://ecos.bok.or.kr/.

under the current global financial crisis. If we compare the trade-to-GDP ratio among OECD countries in 2006, for example, trade's contribution to Korea's GDP is about 85 percent, a middle range of trade dependency. Other small- or medium-size European countries such as Finland, Sweden, Poland, Switzerland, and Denmark also have a similar or high trade dependency ratio. But these countries have not suffered like Korea, at least so far. In Asia, the exports-to-GDP ratios of Taiwan, Malaysia, and Thailand (Indonesia is not addressed here) are higher than that of Korea.[21] Therefore, trade dependency cannot explain entirely why the Korean economy is suffering more than other economies during the current global financial crisis. We need to find more direct reasons from the financial sector, and one plausible answer to the sharp currency depreciation lies in the ongoing massive financial deleveraging in the Korean financial markets.

Deleveraging in Foreigners' Portfolio Investment

Financial deleveraging is going on at the global level.[22] It began with the subprime mortgage problem in the United States in mid-2007 and then accelerated, especially after the bankruptcy of Lehman Brothers in mid-September of 2008. It first spread to advanced economies in which the financial markets are more closely integrated to the U.S. financial markets. Banks in advanced economies have cut overseas lending to emerging and

developing countries.[23] Korean financial markets have also been heavily hit by foreign investors' retreating from their portfolio investment to Korea.

Table 2 shows the overall trend of inflow and outflow of capital in Korea from 1998 to 2008. As the table shows, in 2008 more than $50 billion of investment flowed outward from Korea. This massive withdrawal occurred in every type of foreign investment: foreign direct investment (FDI), portfolio investment, financial derivatives, and in the category of other investments. A notable aspect is that the balance of portfolio investment started to decrease beginning in 2005, even before the current global financial crisis. In 2006, the balance of portfolio investment (inflow minus outflow) was $23.2 billion in deficit, and the deficit was larger in 2007—$26.0 billion. During the past three years, the deficit of portfolio investment has increased more than $64 billion in total. The balance of FDI has remained in the minus column since 2006 as well.

***Table 2*: Balance of Financial Account in Korea, 1998–2008 in billions of U.S. dollars**

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Financial account total	–3.368	2.430	12.725	–2.660	7.338	15.308	9.352	7.097	21.098	9.516	–50.895
Balance of foreign direct investment	0.673	5.136	4.285	1.108	–0.224	0.100	4.588	2.010	–4.540	–13.836	–10.595
Balance of portfolio investment	–1.224	9.190	12.177	6.706	0.346	17.287	6.599	–3.518	–23.230	–26.058	–15.367
Balance of financial derivatives	–0.654	–0.513	–0.179	–0.123	0.362	0.619	2.020	1.790	0.484	5.445	–14.333
Balance of other investment*	–2.162	–11.382	–3.557	–10.351	6.854	–2.699	–3.856	6.815	48.384	43.965	–10.600
Loans from abroad	–1.508	–13.455	–4.858	–13.208	1.934	–5.032	–0.935	1.022	44.180	41.968	–19.582

Source: Bank of Korea. http://ecos.bok.or.kr/.

* This category is mostly composed of foreign borrowing: the banking sector played a major role in foreign borrowing.

Despite the sharp increase of deficits in these categories, the overall balance of financial account was in surplus before 2008. The deficits in portfolio investment and FDI were offset by the remarkable surplus in the balance of the category of other investments, which is mostly composed of banks' overseas short-term borrowing. We can see the remarkable increase in the category of other investment between 2006 and 2007—$48.3 billion and $43.9 billion, respectively—and then the sharp downturn in 2008—$10.6 billion deficit. The majority of the inward surge of foreign capital was mediated by loans from abroad, as Table 2 shows; and banks—in particular,

branches of foreign banks—have played a pivotal role in such financial intermediation since 2006.

What happened in 2006? As we will see in a later section, starting in 2006, overseas bank borrowing was stimulated in Korea in part by rising interest rate differentials relative to other countries, notably Japan. In addition, forward sales of dollars to local banks by Korean shipbuilders with long-term contracts reportedly prompted overseas borrowing by those banks to cover their exchange rate risk. This increasingly freer inflow and outflow of foreign capital has become possible because of the aggressive liberalization measures on foreign exchange by the Korean government.

This balance of financial account, however, does not show the scale of ongoing financial deleveraging originating from the decrease in investment by foreign investors. We need to specifically explore the trend of inward foreign investment for that purpose. ***Table 3*** shows the overall trend of the stock of foreigners' investment in Korea from 2001 to 2008. We can observe that the stock of foreign investment rapidly increased—$248.8 billion to $826.3 billion—from the end of 2001 to the end of 2007. Since then it has decreased rapidly. In 2008, $225.0 billion was withdrawn from the Korean financial markets. In particular, we can see that foreigners' portfolio investment was the major driving force of this withdrawal trend. The stock of portfolio investment increased more than fourfold from $106.4 billion in

***Table 3*: Foreign Investment into Korea, 2001–08, Outstanding Claims of non-residents, in billions of U.S. dollars**

	2001	2002	2003	2004	2005	2006	2007	2008
Total volume	248.8	277.2	337.8	413.5	539.4	652.3	826.3	601.3
Foreign direct investment	53.2	62.7	66.1	87.8	104.9	115.8	122.0	85.3
Portfolio investment	106.4	116.2	165.0	210.3	310.5	352.4	456.7	251.7
Equity securities (stocks)	70.0	75.7	116.8	156.4	249.5	276.4	320.1	124.7
Debt securities (bonds)	36.4	40.5	48.3	53.9	61.0	76.0	136.6	127.1
Financial derivatives	0.4	0.9	0.9	0.9	1.3	2.4	4.9	14.3
Other investment	88.8	97.4	105.8	114.5	122.8	181.7	242.8	250.0
Loans	67.3	73.2	73.8	74.0	75.6	122.8	162.9	145.8
Banks	34.2	41.3	46.1	47.0	51.2	96.2	135.4	115.0

Source: Bank of Korea. http://ecos.bok.or.kr/.

2001 to $456.7 billion by the end of 2007. It then started to decrease rapidly in 2008, as the subprime mortgage problem in the United States became more aggravated. About $205.0 billion of foreigners' portfolio investment has been drained from the Korean financial markets; reduction of foreigners' investment in equity securities (stocks) was the major portion of the withdrawal, about $195.4 billion.

For the past decade, owing to the increase in foreigners' portfolio investment, the total value of the Korean stock market grew by approximately 450 percent from 2001 to the end of 2007. In 2001, the total value was about 246 trillion won, and it reached its peak in October 2007 at approximately 1,126 trillion won. During this period, foreign investment in the Korean stock market also rapidly increased. At the peak in 2005, foreign ownership was more than 42 percent. Since then, the ratio of foreign ownership has decreased gradually.

A notable aspect is the origin of foreigners' portfolio investment. The investment proportion of U.S. and EU investors in total portfolio investment by foreigners has exceeded 70 percent since 2002. Currently, the U.S. and the European economies are suffering greatly on account of the ongoing financial crisis, and major foreign investors from the United States and Europe have withdrawn their investments from emerging and developing markets. The Korean financial markets have been one of the main sources of such withdrawals (***Table 4***).

This surge of portfolio investment can be interpreted as a positive process of financial deepening in which the overall size of capital markets has been rapidly expanded and more integrated into the global financial markets. A

***Table 4*: Origins of Foreigners' Portfolio Investment in Korea, 2002–08 in billions of U.S. dollars**

		2002	2003	2004	2005	2006	2007	2008
Total (A)		116.2	165.0	210.3	310.5	352.4	456.7	252.3
United States + European Union (B)	United States	59.6	76.4	96.6	142.2	146.0	162.3	71.5
	European Union	30.9	47.1	58.2	91.8	115.1	173.2	94.1
	Subtotal (B)	90.49	123.48	154.79	234.03	261.07	335.51	165.58
	Ratio (B)/(A)	78%	75%	74%	75%	74%	73%	66%
Japan (C)	Amount	4.2	5.2	6.9	6.9	8.5	12.6	9.7
	Ratio (C)/(A)	3.6%	3.1%	3.3%	2.2%	2.4%	2.8%	3.8%

Source: Bank of Korea, http://ecos.bok.or.kr/.

decade ago, when the Asian financial crisis occurred, a main source of inward foreign capital flow was a loan type of capital flow. The volume of inward portfolio investment by foreign investors was at a minimal level owing to the long history of Korean government regulations on foreign exchange. By February 1997, for example, when the revised Foreign Capital Inducement Law came into effect, FDI projects had to be declared to the government and get its approval. Therefore, the fact that Korea exceeded more than $800 billion of inward foreign capital within a decade means that there has been a drastic change—a "quantum jump"—in the Korean financial markets. It is also true, however, that the Korean financial markets have suffered more under the current global financial crisis because of the speedy deregulation on foreign exchange.

Financial Vulnerability in the Banking Sector

Various factors have contributed to the current massive deleveraging by foreigners from the Korean financial markets, but two aspects of the financial vulnerability of the Korean banking sector are notable: one is the rapid increase of short-term foreign debt beginning in 2006, and the other is the increasing household debt.

Sharp Increase of Short-term Foreign Debt

For the past decade, gross foreign debt has increased about 2.3 times—from $163.8 billion to $380.5 billion in 2008 (***Table 5***). During the same period, short-term foreign debt has increased from $39.5 billion to $151.0 billion, and its proportion in the gross external debt has also increased. However, foreign currency reserves increased rapidly as well—from $51.9 billion in 1998 to $200.4 billion at the end of 2008. Currently, foreign currency reserves exceed short-term foreign debt.

The recent rise of short-term foreign debt differs considerably from the pre-crisis rapid increase of short-term foreign debt Korea experienced before the Asian financial crisis. First of all, foreign exchange reserves are still larger than the total short-term foreign debt. At the end of 1997, short-term foreign debt amounted to $70 billion—three times as much as the country's total international reserves—and the ratio of short-term debt accounted for 67 percent of total foreign debt.[24] The current situation is much better than the situation a decade ago. Second, a large portion of foreign debt is attributable to loans extended against future foreign currency revenues, so-called bridge financing. For example, exporters such as shipbuilders hedge the related exchange rate risks by selling forward exchange contracts. It is estimated that about 36 percent of foreign debt has been incurred by shipbuilders' currency hedging or other types of bridge financing, which are free of re-

payment burdens, or other types of bridge financing to minimize the future risks of the foreign exchange rate.[25] Third, the Korean government made $30 billion worth of currency swaps with the U.S. government at the end October of 2008,[26] and it has also expanded the currency swap amounts with Japan and China.[27] Considering these factors, we can reasonably claim that the risk of maturity mismatch between foreign currency assets and liabilities remains not as serious as most people worry about, and an immediate currency crisis is not expected.

Of note, however, is the pattern of increasing short-term foreign debt. Short-term foreign debt increased abruptly after 2006. From Table 5, we can observe that short-term foreign debt increased sharply during 2006 and 2007—from $65.9 billion to $160.2 billion. Out of this short-term foreign debt, foreign loans made up the major portion. Banks have played a pivotal role in channeling short-term-oriented loan types of foreign borrowing. As Table 5 shows, immediately after the Asian financial crisis in 1998, short-term foreign loans decreased more than $20 billion. Since then, short-term foreign loans have not substantially increased at all. But, they sharply increased in 2006 and 2007. During these two years, banks borrowed about $74.4 billion at short-term—$41.3 billion in 2006 and $33.1 billion in 2007. Then, short-term foreign loans started to decrease in 2008.

***Table 5*: Gross External Debt, Annual Foreign Borrowing, and Foreign Currency Reserves in Korea, 1998–2008, in billions of U.S. dollars**

		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Gross external debt	Total	163.807	152.936	148.119	128.687	141.471	157.394	172.259	187.882	260.061	383.152	380.495
	Short term[a]	39.580 (24.2%)	43.058 (28.2%)	49.657 (33.5%)	40.293 (31.3%)	48.179 (34.1%)	50.805 (32.3%)	56.348 (32.7%)	65.911 (35.1%)	113.748 (43.7%)	160.249 (41.8%)	151.056 (39.7%)
	Long term	124.227	109.879	98.462	88.394	93.291	106.589	115.912	121.971	146.312	222.903	229.439
Annual Increase of Foreign Borrowing (Loan Type)	Total	-1.508	-13.455	-4.858	-13.208	1.934	-5.032	-0.935	1.022	44.180	41.968	-19.582
	Long-term	19.107	-16.093	-3.899	-9.005	-3.147	-5.099	-4.230	-4.702	1.739	7.507	2.438
	Short-term	-20.615	2.638	-0.959	-4.203	5.082	0.067	3.295	5.724	42.440	34.461	-22.020
	Banks	-12.250	5.528	-1.804	-3.193	6.162	0.226	4.071	5.728	41.316	33.137	-22.418
Foreign currency reserves[b]		51.972 (32.2)	73.700 (21.7)	95.855 (22.1)	102.48 (6.6)	120.814 (18.3)	154.508 (33.6)	198.175 (43.6)	209.967 (11.7)	238.387 (28.4)	261.770 (23.3)	200.479 (–61.2)

Source: Bank of Korea (http://ecos.bok.or.kr/)
a.Percentages in this row show the ratio of short-term debt compared with the total gross external debt.
b. Percentages in this row show the annual change of foreign currency reserves.

Who, then, accumulated all those short-term foreign loans? It was not banks in general, but the branches of foreign banks that played a significant role in channeling short-term foreign borrowing. As ***Table 6*** clearly shows, outstanding short-term foreign borrowing mediated by domestic branches of foreign banks more than doubled from end 2005 to end 2006—$23.3 billion to $51.8 billion—and the gross amount of short-term foreign borrowing through the branches of foreign banks started to exceed that of domestic banks beginning in 2006. It reached almost $80 billion by the end of 2007 and started to decrease in 2008 (see ***Table 6***).

***Table 6*: Gross External Debt of the Banking Sector in Korea, 1998–2008, in billions of U.S. dollars**

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Banks **Total (A) + (B)**	72.506	67.627	61.464	51.300	58.471	67.728	74.491	83.429	136.536	192.880	171.720
Domestic banks **(A)**	53.638	49.867	45.168	37.440	39.244	45.339	50.574	58.388	82.113	108.959	99.394
Short-term	15.052	18.633	22.910	17.807	21.012	21.083	23.454	27.969	44.259	54.642	45.243
Long-term	38.586	31.233	22.259	19.632	18.232	24.256	27.120	30.419	37.854	54.317	54.151
Domestic branches of foreign banks **(B)**	18.868	17.760	16.295	13.860	19.227	22.389	23.918	25.041	54.422	83.921	72.325
Short-term	16.063	15.124	14.430	12.410	17.142	19.692	20.996	23.307	51.835	79.345	67.736
Long-term	2.805	2.636	1.865	1.450	2.085	2.697	2.922	1.734	2.588	4.576	4.590

Source: Bank of Korea, http://ecos.bok.or.kr/.

The Korean government has claimed that this foreign borrowing by domestic branches of foreign banks cannot be regarded as a genuine foreign debt; instead it can be regarded as transactions within the foreign banks, between the mother bank in a foreign country and the subsidiary branch bank in Korea. But all that borrowed money from foreign financial institutions must have been provided to domestic economic actors (banks, firms, and individuals); and, if domestic branches of foreign banks want to withdraw their loans from the Korean markets, those borrowers in Korea should pay back the debt. It may have a significant impact on the economy. Therefore, regardless of the channels of foreign borrowing, this huge amount of short-term debt must be a burden to the Korean economy at the moment.

This trend highlights that there exists a widening gap between increasing cross-border financial transactions and the financial regulatory frameworks

that have been consolidated according to national boundaries. This phenomenon demands new financial regulatory frameworks at both the global and national levels. Such frameworks might have to be constructed through a painful "muddling through" process of political bargaining and coordination in the current Group of Twenty summits and other global meetings.

Leveraged Banks and Household Debt

During the past decade, the Korean banking sector grew rapidly, not only in total asset size but also in financial intermediation.[29] Accordingly, Korean banks have increased their money supply about fivefold, from approximately 200 trillion won in 1998 to more than 917 trillion won by the end of 2008.[30] A notable recent feature, however, is that Korean banks have rapidly increased loan provision by borrowing. Starting in 2004, the total loans provided by banks exceeded the total deposits of banks—deposit-to-loan ratio—and this gap has widened very rapidly since 2004. At the end of 2008, the gap was more than 240 trillion won (***Table 7***).

Banks have issued bonds to mobilize additional money for lending. For example, the total amount of bank bonds issued up until January 2001 was approximately 51 trillion won, but the amount doubled by mid-2005, and

***Table 7*: Loans and Discounts by All Banks in Korea, 1998–2008 in trillions of Korean won**

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total loans and Discounts (A)	200.289	250.240	310.804	357.384	471.684	538.261	565.655	613.923	699.430	803.724	917.110
All industry	144.768	171.114	201.859	199.773	249.353	284.504	289.329	308.409	353.208	440.043	528.537
Manu-facturing	69.201	78.076	87.801	86.061	99.192	105.591	109.838	117.703	127.471	149.837	187.251
Household (C)	55.522	79.126	108.945	157.611	222.331	253.757	276.327	305.514	346.222	363.681	388.573
(C)/(A)	27.7%	31.6%	35.1%	44.1%	47.1%	47.1%	48.9%	49.8%	49.5%	45.2%	42.4%
Total deposits (B)	251.794	323.411	404.660	455.630	512.419	548.098	540.726	561.945	592.720	593.171	675.204
Ratio (A)/(B)	79.5%	77.4%	76.8%	78.4%	92.1%	98.2%	104.6%	109.2%	118.0%	135.5%	135.8%

Source: Bank of Korea, http://ecos.bok.or.kr/.
Note: All banks comprises commercial banks and specialized banks.

then it doubled again between mid-2005 and 2008, reaching about 227 billion won.[31] This increasing amount corresponds with the widening gap between total deposits and total loans in the banking sector. This is a very significant change in modern Korean banking history because, since the beginning of Korea's modern banking in 1909, Korean banks have never before provided more loans than the total amount of deposits.[32]

These rapidly increasing loans have been channeled more to households, in particular to housing-related sectors. Total loans provided to the household sector by financial institutions have increased almost fourfold during the past decade, from 165.8 trillion won in 1998 to 648.3 trillion won; in particular, loans provided by commercial and specialized banks have increased more rapidly—from 55.5 trillion won to 388.5 trillion won during the same period. As ***Table 8*** shows, commercial and specialized banks have played a pivotal role in providing loans to the household sector. By the end of 2008, the total amount of household loans surpassed by more than two times the entire amount of lending provided to the manufacturing sector. Around 2005 and 2006, almost half of all bank loans were provided to the household sector. Simply put, we can say that retail banking has been much strengthened during the past decade.

Table 8. **Credit to Households in Korea, 1998–2008 in trillions of Korean won**

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total loans to households (A)	165.8	191.9	241.0	303.5	391.1	420.9	449.3	493.4	550.4	595.3	648.3
Depository corporations (B)	115.1	133.4	157.6	206.0	276.9	322.0	355.5	393.2	443.3	474.0	515.9
(B)/(A)	69.4%	69.5%	65.4%	67.9%	70.8%	76.5%	79.1%	79.7%	80.5%	79.6%	79.6%
Commercial and specialized banks (C)	52.9	76.3	107.2	156.7	222.0	253.7	276.3	305.5	346.2	363.6	388.5
(C)/(A)	31.9%	39.8%	44.5%	51.6%	56.8%	60.3%	61.5%	61.9%	62.9%	61.1%	59.9%
Housing-related loans	—	—	—	—	—	—	—	208.4	240.9	245.7	254.7
Security against housing (D)	—	—	—	—	—	152.5	169.2	190.2	217.1	221.6	239.6
(D)/(C)	—	—	—	—	—	60.1%	61.2%	62.3%	62.7%	60.9%	61.7%
Loans and discounts to the manufacturing sector (by commercial and specialized banks)	69.2	78.0	87.8	86.0	99.1	105.5	109.8	117.7	127.4	149.8	187.2

Source: Bank of Korea, http://ecos.bok.or.kr/.

Why, then, have households borrowed more from banks? Rising debt reflects a number of factors, including falling real interest rates on loans to households and the expanded use of credit cards. In addition, the decline in borrowing by large Korean conglomerates (*chaebol*) as they reduced debt levels following the 1997 crisis prompted banks to expand lending to households as well as to small- and medium-size enterprises (SMEs). However, one of the most important reasons lies in the fact that people borrowed more money to purchase houses and then used houses as collateral to receive additional loans from banks. In fact, as Table 8 shows, more than half of household loans were secured by houses as collateral. The percentage of housing-related loans has constantly exceeded more than 65 percent of total bank loans, and the percentage of security against housing has generally been exceeding more than 60 percent.

This high ratio of housing-related loans was closely linked with the housing bubble from 2001 to 2006. In 2002, for example, the annual change in the purchase price of apartments was more than 22 percent. Under the circumstances, if people—as rational economic actors—could borrow money with far lower interest rates from banks, they would have borrowed money and invested in the housing markets. The Korean government noticed the risk of increased household loans in the banking sector, housing-related loans in particular: "During 2005–07, the Korean government introduced five policy packages that imposed price ceilings on new apartments, reduced the price of publicly built housing, raised taxes on capital gains and property holding, and limited bank lending for mortgages."[33] The government introduced various restrictions to channel loans less to the household sector and more to the corporate sector, especially to SMEs. In consequence, banks have provided more loans to SMEs, and SME borrowing increased from 317.6 trillion won in the first quarter of 2007 to 421.7 trillion *won* by the end of 2008—increased more than 22 percent. Meanwhile, real estate prices have stabilized since 2007. As of 2008, mortgages account for 40 percent of household liabilities in Korea, much lower compared with the U.S. and UK shares of around 75 percent, and it makes Korean households and banks less vulnerable to a decline in housing prices. But, because of the preemptive government intervention to restrain the housing bubble, the stock of unsold homes reached a record high in 2008. In the first half of 2008, new housing starts fell more than 50 percent from a year earlier.

Currently, Korean individuals are vulnerable to credit tightening as they have a low savings rate and high leverage—a debt-to-income ratio of 142.5 percent. ***Table 9*** shows that total financial assets in the individual sector substantially decreased in 2008. Net financial transaction flow, which includes the volume of financial assets resulting from stock price changes or exchange rate changes, has decreased more than 167 trillion in 2008. In

consequence, individuals' financial debts have much increased while their net financial assets have greatly shrunk. The high level of debt has already made a significantly negative impact on private consumption, and it poses a downside risk, as it is affecting private consumption.[34] Household interest payments climbed from 6 percent of disposable income in 2004 to 9 percent in 2007, despite declining interest rates. Most financial debt is at variable rates, shifting risk from financial institutions to households. The high leveraging of the household sector makes it more vulnerable to the global credit crunch. What makes the situation worse is that simultaneously the household savings rate has plunged. It declined from an average rate of 20 percent during the 1990s to only 2.2 percent in 2002 although it has rebounded modestly since the collapse of the credit card bubble in 2002 and 2003.

***Table 9*: Trend of Net Financial Assets of the Individual Sector, 2004–08 in trillions of Korean won**

	2004	2005	2006	2007	2008
Financial assets[a] (A)	1,234.2	1,400.9	1,521.8	1,712.8	1,677.4
Flows[b]	78.4	166.7	120.8	191.0	–35.4
Transaction flows	67.4	91.2	126.7	123.2	131.6
Net transaction flows[c]	11.0	75.5	–5.9	67.9	–167.1
Financial debts[c] (B)	542.4	601.4	670.1	743.0	802.0
Net financial assets (A–B)	691.8 (8.8)[d]	799.5 (15.6)	851.7 (6.5)	969.8 (13.9)	875.3 (–9.7)

Source: "Flow of Funds during 2008 (preliminary)," Bank of Korea, March 2009.
a. Excluding commercial trade credits and miscellaneous financial assets (debts).
b. Changes in volume during the year.
c. Changes in volume of financial assets resulting from stock price changes or exchange rate changes.
d. Figures in parentheses respresent changing ratio from the preceding year-end.

Eventually, deleveraging in the household and the corporate sector will weaken household consumption and corporate investment. In particular, economically weak actors such as SMEs and low-income households will be much more vulnerable to the economic downturn than large firms—the *chaebol*—which have accumulated internal funds in case of hostile merger and acquisition activity since the Asian financial crisis. The longer the current credit crunch lasts, the longer the SMEs and low-income households can expect to experience severe trouble. Accordingly, the Korean government needs to take bold and decisive supportive measures to encourage banks to extend credit to individuals and SMEs. Up to now, the Korean government has responded to the economic slowdown with a broad range of policy measures, including macroeconomic stimulus packages[35] and monetary easing measures,[36] similar

to what most governments have adopted since the full-blown escalation of the current global financial crisis in the last quarter of 2008.

Post-crisis Financial Liberalization and Government Failure

All these systemic risks in the banking sector have originated from not only external shocks but also the regulatory failure of the government. While liberalizing the inward and outward capital flows, the Korean government has not fully recognized the potential risks that foreign bank branches will pose as cross-border financial intermediation is fully liberalized. Systemic regulatory measures have not been introduced appropriately to supervise the financial intermediation activities of branches of foreign banks. In addition, the Korean government was in a rush to increase the size of foreign exchange markets by liberalizing the capital account and the outmoded way of defending the foreign exchange rate, but the Korean currency has not yet been fully internationalized. This situation has promoted speculative attacks on the Korean currency and increased financial vulnerability to the current global financial shock.

Regulatory Failure on Domestic Branches of Foreign Banks

Since the financial crisis in 1997, the Korean government has ambitiously tried to transform the Korean financial markets into the "hub" of Northeast Asia by 2011. The government has liberalized foreign exchange transactions aggressively. Major measures include internationalizing the *won*, liberalizing overseas investment, easing restrictions on capital transactions, developing the foreign currency market, and relaxing the obligation to prove external credits. These measures have made a significant impact on the rapid rise of short-term foreign debt, mostly channeled by domestic branches of foreign banks since 2006, and the increasing deficit in the balance of portfolio investment since 2004.

Immediately after the financial crisis in late 1997, the Korean government accepted IMF conditionality in return for receiving a $57 billion package of support from the IMF. Following the conditionality, the newly inaugurated Kim Dae-jung administration (1998–2002) launched a two-stage liberalization plan for all foreign exchange transactions in June 1998. The first stage of liberalization lasted from April of 1999[37] to the end of 2000, and during this initial liberalization the government shifted regulations on capital account transactions from a positive system into a negative one. The permission requirement was lifted except in the cases of transactions for which permission was stipulated by law or decree. Domestic corporations were allowed to borrow money with maturities of less than one year directly from foreign financial institutions. Foreigners were allowed to make deposits

and open trust accounts denominated in Korean *won* if such transactions had maturities of more than one year. Notably, a long-held principle of "real demand" for forward and derivatives transactions was abolished.

The second stage of liberalization took effect in January 2001. It further accelerated capital account liberalization, mostly lifting the regulations on currency account transactions by both domestic individuals and foreigners. In particular, the obligation of repatriation of overseas claims was eased. In April 2002, the Korean government announced the Plan for the Development of the Korean Foreign Exchange Market, which includes the full liberalization of regulations on foreign exchange. As a first step toward implementing the plan, the Korean government eased the procedural regulations concerned with individuals' external payments, permitted securities companies and insurance companies to participate in the interbank foreign exchange market, and liberalized the export of the Korean won beginning 2 July 2002.

The succeeding Roh Moo-hyun administration (2003–07) accelerated this ongoing liberalization under the ambitious plan of transforming Korea into a financial hub for Northeast Asia by 2009, two years ahead of the initial plan of the Kim Dae-jung administration. In June 2005, the government announced an Overseas Investment Activation Plan in order to solve the problem of excess foreign exchange supply and promote corporate expansion overseas. Accordingly, the government abolished the ceiling on overseas finance or insurance business investment by nonfinancial institutions and increased the limits on real estate acquisition abroad and overseas direct investment by individuals. The turning point was the year of 2006. In 2006, the government changed the remaining permission requirements for capital transactions, according to a Foreign Exchange Liberalization Plan, to declaration requirements and enacted additional measures to promote overseas investment. Consequently, outward FDI and portfolio investment increased greatly, causing capital flight (see Table 2). Under the circumstances, branches of foreign banks have expanded their cross-border financial intermediation, targeting interest rate differentials, by borrowing short-term loans from the global financial markets and providing them to domestic economic actors that might have limited access to foreign borrowing (Table 6).

The problem was, however, that the government did not introduce an appropriate supervisory framework for the activities of the branches of the foreign banks. Instead, loose regulatory rules have been applied to those branches. In contrast, the Korean government has applied strict regulations on liquidity risk management and internal management to domestic financial institutions participating in foreign exchange markets. For instance, Article 64 of the Regulation on Supervision of Banking Business, enacted in April 1998 for the first time and amended most recently in May 2007, stipulated that

domestic financial institutions have to maintain a liquidity ratio in foreign currency following certain specific standards.[38] In addition, Articles 65 and 67 stipulated the rules for management funding resources for medium- and long-term loans in foreign currency and internal management standards to cope with risks—such as country risk, large credit risk, financial derivatives transaction risk, market risk—arising from foreign exchange transactions. However, Article 68 of the regulation explicitly stipulates that these provisions shall not be applied to domestic branches of foreign banks. Instead, the regulation stipulates in detail about the operating funds of foreign bank branches: for example, Article 10, Item 7, stipulates that "Foreign bank branch shall submit to the Governor relevant documents such as details of funding and refunding, contracts, and confirmation letter of fund transfer with respect to Interoffice Long-term Borrowing."[39]

There are no regulations on short-term foreign borrowing. In addition, foreign bank branches are required to report their operating funds monthly (Article 10, Item 5). Furthermore, the Banking Act, wholly amended in January 1998, stipulates in Articles 58 to 63 the relevant rules for domestic branches of foreign financial institutions, but there are no specific regulations on the operations of these branches except the application of provisions on capital stock, which shall be governed by presidential decree (Article 63). In short, there are no specific rules or regulations that can properly monitor and supervise the real-time, short-term capital flow by domestic branches of foreign banks in Korea.

Foreign Exchange Rate Policy: A Leaning-against-the-Wind Strategy

With the successive liberalization measures on foreign exchange, the average amount of daily trading in the foreign exchange markets has expanded. For example, the daily average turnover of total foreign exchange transactions including interest and currency derivatives in the Korean foreign exchange market increased from $9.1 billion in 2002 to $46.5 billion in 2007.[40] In particular, forward trading has increased 43 percent per year on average since 2002. This increase has largely resulted from the fact that export-related companies and asset management companies, dealing with foreign securities investment, have increased their forward selling to hedge foreign exchange rate risks.[41]

Note, however, that the Korean won is mainly traded in the nondeliverable forward (NDF)[42] markets. The Korean won NDF market was "the largest and most liquid NDF market globally" in the period 2003–04.[43] The reason has been generally attributed to the fact that the Korean government, unlike most other Asian governments, allows domestic banks to operate in the NDF market. As a part of foreign exchange control, access to onshore

forward markets by nonresidents is not allowed in China and Taiwan.[44] By April 2006, the interdealer market daily trading volume of the Korean won amounted to $2 billion, which was the largest trading volume in the Asian NDF markets (***Table 10***).

***Table 10*: Turnover and Liquidity in Asian Nondeliverable Forward Markets**

Country	Contract tenures	Asian interdealer market daily trading volume (millions of U.S. dollars)	Trade size (millions of U.S. dollars)	Bid-ask spread (basis points)
Korea	Liquid to 2 years, limited liquidity 3–5 years	2,000	10	2
Taiwan, ROC	Liquid to 12 months, limited liquidity up to 5 years	1,000	5–10	2–4
China	Liquid to 12 months, limited liquidity 3–5 years	700	10	3–5
India	Liquid to 12 months, limited liquidity up to 5 years	500	5–10	3–5
Malaysia	Moderate liquidity up to 12 months, illiquid beyond	450	5	10–12
Indonesia	Moderate liquidity up to 12 months, illiquid beyond	250	3–5	10–20
Philippines	Moderate liquidity to 12 months, limited liquidity 3–5 years	250	3–5	7–9

Source: Jacob Gyntelberg, Guy Debelle, and Michael Plumb, "Forward Currency Markets in Asia: Lessons from the Australian Experience," BIS Quarterly Review (September 2006): 59.

Note that Asian NDF contracts are traded in over-the-counter (OTC)[45] and offshore markets. As NDF markets are OTC, it is difficult to gauge the volume of contracts traded and learn who trades. This nature of the NDF markets implies that speculative demands are strongly present, in addition to real hedging demand, in the Asian NDF markets. According to a survey by the Committee on the Global Financial System work group under the Bank for International Settlements (BIS), as much as 60 to 80 percent of NDF volume is generated by speculative interest, reflecting growing participation from international hedge funds.[46] Specifically, more than three-quarters of all trades in the Asian NDF markets are traded through the interdealer network, unlike the markets for major currencies, which are traded mostly through interbank transactions.[47] Moreover, trading of the Asian NDF markets predominantly take place in Singapore and Hong Kong, followed by London and Tokyo.[48] These markets are beyond the regulatory control of certain governments. Therefore, there exist two risks for those countries seeking to keep short-term capital movements under control while relying on NDF markets: "One risk is that pressures for appreciation or depreciation

may flow from the NDF market to the spot market by making capital flows larger and more volatile. A second risk is that NDF markets may make it easier for sizeable speculative positions to build up."[49]

NDF transactions had been on the increase since they were liberalized in April 1999 as part of foreign exchange liberalization. The outstanding amount of net NDF purchases by nonresidents reached $10.8 billion by the end of 2006.[50] However, this volume is much smaller than the increasing volume of foreign exchange derivatives in Singapore and Hong Kong. From 2004 to 2007, for example, average daily turnover of OTC foreign exchange derivatives in Singapore increased from $91 billion to $153 billion, and in Hong Kong during the same period it increased from $70 billion to $143 billion.[51] Moreover, the overall size of the Korean foreign exchange market is only a very small part of the global foreign exchange markets. As ***Table 11*** shows, the daily average turnover on the Korean exchange market is very small. Its share in the global foreign exchange market was about 0.8

***Table 11*: Distribution of Foreign Exchange Market Turnover in billions of U.S. dollars and percentage**

	1998		2001		2004		2007	
	Amount	% share	Amount	% share	Amount	% share	Amount	% share
United Kingdom	637	32.5	504	31.2	753	31.0	1,359	34.1
United States	351	17.9	254	15.7	461	19.2	664	16.6
Japan	136	6.9	147	9.1	199	8.2	238	6.0
Singapore	139	7.1	101	6.2	125	5.2	231	5.8
Hong Kong SAR	79	4.0	67	4.1	102	4.2	175	4.4
France	72	3.7	48	3.0	64	2.6	120	3.0
Germany	94	4.8	88	5.5	118	4.8	99	2.5
Korea	4	0.2	10	0.6	20	0.8	33	0.8
Taiwan, ROC	5	0.3	4	0.3	8	0.3	15	0.4
China*	0	0.0	0	0.0	1	0.0	9	0.2
Thailand	3	0.2	2	0.1	3	0.1	6	0.2
Malaysia	1	0.1	1	0.1	2	0.1	3	0.1
Philippines	1	0.1	1	0.1	1	0.0	2	0.1
Total	1,969	100	1,616	100	2,429	100	3,988	100

Source: Triennial Central Bank Survey 2007 (Basel: Bank for International Settlements, December 2007), table B.2, www.bis.org/publ/rpfxf07t.pdf?noframes=1.
Note: Distribution of foreign exchange market turnover is shown for daily average in April 2007.
* For 1998, 2001, and 2004, spot transactions only.

percent in April 2007, surveyed by the Bank for International Settlements, although the absolute volume of daily turnover increased very rapidly from $4 billion 1998 to $33 billion in 2007. Nonetheless, the volume is much smaller compared with the volumes of Singapore and Hong Kong.

Under the circumstances, the new Lee Myung-bak administration has adopted a leaning-against-the-wind strategy in managing Korea's foreign exchange rate.[52] Initially the new administration preferred a weak *won* for export promotion while oil prices were skyrocketing and terms of trade were being aggravated in the first half of 2008. Then the Korean government switched its foreign exchange rate policy to defend the *won* at approximately 1,000 won to the U.S. dollar while depreciation pressures were going up on account of the escalating global financial crisis. Because of this inconsistent policy position, speculative attacks on the Korean currency in the offshore NDF markets seem to have been rampant. After only 10 months of the establishment of Lee Myong-bak adminitration in February of 2008, foreign exchange reserves decreased more than $61 billion (Table 5). A majority portion of the decreased foreign exchange reserves seems to have been spent uselessly for defending Korea's foreign exchange rate from speculative attacks.

Concluding Remarks

Financial crises are endemic to financial liberalization, but they also lead to reforms to address problems. The current global financial crisis originated from—and at the same time revealed—the structural vulnerabilities of globalizing financial transactions in both their internal and external dimensions. From a broader historical point of view, the current financial crisis challenges the relevance of the past financial liberalization model, in which appropriate supervisory functions of the government have not kept pace with the speed of development of new financial derivatives in the financial markets. Predicting the consequences of an unfinished crisis is perilous, but it is already clear that, even in the absence of a calamity, the direction of financial globalization and financial regulation will change.

Those systemic risks in the Korean banking sector have not developed into a systemic banking crisis due to both government's preventive bold measures and relatively less turbulent foreign market conditions. But it is evident that the Korean banking sector, and the Korean economy more broadly, is still placed in a difficult position owing to declining global demand and increasing financial instability. The timing of the substantial economic rebound depends on an improvement in the world economy, which is almost beyond the capacity of the Korean government. Nonetheless, the current situation demands that the government needs to sustain

its bold and swift actions to minimize financial vulnerability and an exit strategy should be implemented in a gradual and prudent way. Of course, the mounting public debt can be a burden to the economy, but Korea is not the only case suffering from mounting public debt. In fact, the Korean case is still relatively moderate in terms of public debt. For instance, the IMF projects that the gross public debt of the ten richest countries of the Group of 20 will reach 106% of GDP by the end of 2011, up from 78% in 2007. It means that more than $9 trillion of extra debt will be accumulated in three years. The IMF also predicts that the government debt of the rich ten countries will hit 114% of GDP by 2014.[53]

The current global financial crisis demonstrates that an abrupt withdrawal of government regulation from markets is not an appropriate way of coping with financial globalization and liberalization. To date, the Korea financial sector is still far behind the financial sectors of advanced economies, not only in scale but also in the quality of financial services. Nonetheless, the Korean government needs to take a gradual and cautious approach in de-regulating foreign exchange and other financial practices; it needs especially to strengthen the prudential monitoring functions of the government over the activities of foreign banks in Korea. The current financial instability in Korea's foreign exchange highlights that matching the sequence and speed of deregulation is of crucial importance in the institutional design of financial liberalization. Moreover, the systemic risks in the Korean banking sector demonstrate that a preexisting regulatory framework focusing on the soundness of individual financial institutions needs to be shifted to manage the systemic risks of the entire financial system. Furthermore, the current global financial crisis highlights that the highly leveraged, external borrowing model of economic growth cannot be sustained as before.

Last, the current crisis raises an issue of how far the balance between the government and markets should shift. The remarkable economic growth in Korea for the past decades, along with other economic growth in East Asia, has provided a development model: the state can engineer high economic growth with equity. In particular, the current crisis will inevitably intensify political and social conflicts in regard to the cost sharing of the economic downturns. It will likely be a thorny political issue and, therefore, will demand decisive and compassionate political leadership. But a more genuine challenge that the Korean society is facing is to develop an alternative model of development that fosters reasonable levels of social cohesion and communal values in accordance with more market-oriented reforms to dismantle the past state-driven economic system. We need to pay attention to not only economic recovery from the current crisis but also the social, political, cultural—and ultimately human—dislocations that will result from the current financial meltdown.

Endnotes

1. M. Bordo and B. Eichengreen, "Is Our Current International Economic Environment Unusually Crisis Prone?" in David Gruen and Luke Gower (eds.) *Capital Flows and the International Financial System* (Economic Group Reserve Bank of Australia 1999): 18-74; M. Bordo, B. Eichengreen, et al., "Is the Crisis Problem Growing More Severe?" *Economic Policy* 16, no.32 (2001): 51-82.

2. Luc Laeven and Fabian Valencia, "Systemic Banking Crises: A New Database" (working paper WP/08/224, International Monetary Fund, Washington, D.C., November 2008). A systemic banking crisis can be defined a situation in which bad debts soar and the banking sector is insolvent owing to a large number of defaults.

3. C. M. Reinhart and K. S. Rogoff, "Is the 2007 U.S. Subprime Financial Crisis So Different? An International Historical Comparison." *American Economic Review* 98, no. 2 (2008): 339–44.

4. L. H. Summers, "International Financial Crises: Causes, Prevention, and Cures," *American Economic Review* 90, no. 2 (2000): 1–16; H. J. Edison et al., "International Financial Integration and Economic Growth," *Journal of International Money and Finance* 21, no. 6 (2002): 749–76; M. Bordo, A. Taylor, et al., *Globalization in Historical Perspective,* (Chicago, Il.: University of Chicago Press 2003).

5. *World Economic Outlook: Financial Stress, Downturns, and Recoveries* (Washington, D.C.: International Monetary Fund, October 2008). There are two different views on the nature of the current global financial crisis: one group of scholars characterizes it as "what is different" from past financial crises and the other group as "what is the same"; see W. R. White, "Past financial crises, the current financial turmoil, and the need for a new macrofinancial stability framework." *Journal of Financial Stability* 4(4) (2008): 307-312.

6. *World Economic Outlook Update*: *Global Economic Slump Challenges Policies* (Washington, D.C.: International Monetary Fund, January 2009).

7. "Global Economic Policies and Prospects," note by the staff of the International Monetary Fund (Washington, D.C.: International Monetary Fund, 19 March 2009).

8. Deleveraging is the process of banks' paying off any existing debt on their balance sheets and closing credit lines.

9. *Regional Economic Outlook: Asia and Pacific* (Washington, D.C.: International Monetary Fund, November 2008).

10. More than other OECD countries, Germany and Japan also suffered with GDP growth rates in the last quarter of 2008, with growth rates of –2.10 percent and –3.34 percent, respectively.

11. Debt with a maturity of less than one year.

12. Data on household debt is from the IMF.

13. George Cooper, *The Origin of Financial Crises: Central Banks, Credit Bubbles, and the Efficient Market Fallacy* (New York: Vintage Books, 2008); William B. Gwinner and Anthony Sanders, "The Sub Prime Crisis; Implications for Emerging Markets" (Policy Research Working Paper 4726, World Bank, Washington, D.C., 1 September 2008), 1–44.

14. Asli Demirgüç-Kunt and Enrica Detragiache, "Financial Liberalization and Financial Fragility" (paper prepared for the annual World Bank conference on development economics, 20–21 April 1998, Washington, D.C.); Joseph E. Stiglitz, *Globalization and Its Discontents* (New York: Norton, 2002); Gerard Caprio, Patrick Honohan, and Joseph E. Stiglitz, eds., *Financial Liberalization: How Far, How Fast?* (New York: Cambridge University Press, 2001).

15. T. Hoshi and A. Kashyap, "The Japanese Banking Crisis: Where Did it Come from and How Will it End?" *NBER/ Macroeconomics Annual* 14 no. 1 (1999): 129-201; T. Hoshi and H. T. Patrick, *Crisis and Change in the Japanese Financial System* (Boston: Kluwer Academic Publishers, 2000); Steven K. Vogel, Freer Markets, *More Rules : Regulatory Reform in Advanced Industrial Countries,* (Ithaca, N.Y.: Cornell University Press, 1996).

16. Chang Ha-joon, Gabriel Palma, and D. Hugh Whittaker, eds. *Financial Liberalization and the Asian Crisis* (New York: Palgrave, 2001). Lee Chung H, *Financial Liberalization and the Economic Crisis in Asia* (London ; New York: Routledge Curzon, 2003).

17. Charles Wyplosz, "How risky is financial liberalization in the developing countries?", G-24 discussion paper series no. 14. (New York: United Nations, 2001).

18. B. Eichengreen, "Taming Capital Flows," *World Development* 28, no. 6 (2000): 1105–16.

19. OECD. Statistic Portal (http://stats.oecd.org/wbos/Index.aspx?querytype=view&queryname=168).

20. It is not yet known whether this is a temporary phenomenon or a deeply rooted structural problem of the Korean economy.

21. As of the end of 2007, exports of goods and services as percentage of GDP in Taiwan amounted to 69.8 percent, Malaysia 116.7 percent, Thailand 73.4 percent, and Indonesia 29.3 percent. Exports amounted to 45.5 percent in Korea; see Asian Development Bank database, https://sdbs.adb.org.

22. *Global Financial Stability Report: Responding to the Financial Crisis and Measuring Systemic Risks* (Washington, D.C.: International Monetary Fund, April 2009).

23. IMF, *Global Financial Stability Report: Responding to the Financial Crisis and Measuring Systemic Risks* (Washington D.C., April 2009).

24. This was the highest ratio among the crisis-hit Asian countries in 1997, when foreign liabilities accounted for about 55 percent of banks' total liabilities in Korea, 27 percent in Thailand, and 15 percent in Indonesia; see Asian Development Bank,

Asian Development Bank Outlook 1999. Oxford: Oxford University Press, 1999), p. 32, table 1.6.

25. Kyungsoo Kim, Byoung-ki Kim, and Young Kyung Suh, "Opening to Capital Flows and Implications from Korea" (working paper no. 363, Institute for Monetary and Economic Research, Bank of Korea, February 2009), 23, note 12, http://210.104.132.41/cms_data/issue/00026495_000a.pdf.

26. The Korean government has recently requested the extension of the currency swap period from the end of April of 2009 to October 2009.

27. The Korean government also made a $20 billion currency swap agreement with the Bank of Japan. Another currency swap agreement with China, worth about $26 billion, is essentially in local currency; the two sides are still discussing how this will be used. There are no guarantees on conversion into U.S. dollars.

28. This seems to be an official explanation of the Korean government. A high-ranking Korean government official of the Ministry of Strategy and Economy claimed that this is not a genuine foreign debt.

29. Thorsten Beck, Asli Demirgüç-Kunt, and Ross Levine, "A New Database on Financial Development and Structure," World Bank, Washington, D.C., November 2008, http://go.worldbank.org/X23UD9QUX0.

30. Mutual credits (financial institutions), usually targeting small businesses and individuals, have provided more than 150 trillion won to the capital market. Currently this sector is posing a systemic risk to the entire Korean financial system.

31. Database, Korea Information Service; in contrast, the size of the corporate bond market in Korea has not increased at all during the same period.

32. Compared with other Asian emerging markets, the loan-to-deposit ratio of Korean banks was much higher, according to the IMF in April 2008. See, IMF, *Regional Economic Outlook: Asia and Pacific* (Washington D.C., April 1998), Figure 1.20.

33. OECD, *OECD Economic Surveys: Korea* (OECD, December 2008), 22. See also OECD, OECD *Economic Surveys: Korea* (June 2007): 61-89.

34. OECD (December 2008): 19-43.

35. The government announced a 14 trillion *won* (1.4 percent of GDP) fiscal package, which includes 11 trillion won of additional public expenditure in 2009. The biggest increase in spending will be for public infrastructure (4.6 trillion *won*), with about 90 percent allocated to help regional economies. The expenditure package also contains 3.4 trillion won for SMEs, farmers, and fishermen; 1.1 trillion *won* for local governments; and 1 trillion *won* for low-income households. In addition, public enterprises will expand their investment by 1 trillion *won*.

36. The Monetary Policy Committee of the Bank of Korea reduced its policy interest rate by 25 basis points, from 4.25 percent to 4 percent, on 7 November 2008, the third cut in a period of one month. The Bank provides additional liquidity to financial institutions through open-market operations.

37. The new Foreign Exchange Transaction Act became effective on 1 April 1999.

38. Those standards are: (1) ratio of assets within three months of residual maturity to liabilities within three months of residual maturity—85/100 or above, (2) ratio of assets exceeding liabilities to total assets, when the residual maturity is due less than seven (7) days—0/100 or above, (3) ratio of liabilities exceeding assets to total assets, when the residual maturity is due less than one (1) month—10/100 or below.

39. This item was newly established on 2 July 2001.

40. Bank of Korea (http://www.bok.or.kr/broadcast.action?menuNaviId=689)

41. B. C. Ahn, "Capital Flows and Effects on Financial Markets in Korea: Developments and Policy Responses." *BIS Papers* 44, 2009.

42. Nondeliverable forward (NDF) transactions are a kind of forward transaction in which only the difference between the contracted rate and the spot exchange on the due date (the fixing rate) is settled in U.S. dollars, without delivery of the whole contracted principal. Currencies that have not yet been internationalized are mainly traded in NDF markets because in NDF markets it is possible to obtain exchange profit without directly handling noninternationalized local currencies.

43. G. Ma, C. Ho, et al, "The Markets for non-deliverable forwards in Asian Currencies." *BIS quarterly review* 6 (2004): 92.

44. Ibid. 82.

45. This refers to debt securities and other financial instruments such as derivatives that are traded through a dealer network.

46. Laura Lipscomb, "An Overview of Non-Deliverable Foreign Exchange Forward Markets," May 2005, http://www.bis.org/publ/cgfs22fedny5.pdf.

47. Jacob Gyntelberg, Guy Debelle, and Michael Plumb, "Forward Currency Markets in Asia: Lessons from the Australian Experience," *BIS Quarterly Review* (September 2006).

48. Ibid., 59, Box 2.

49. Ibid., 63.

50. Bank of Korea.

51. *Triennial Central Bank Survey 2007* (Basel: Bank for International Settlements, December 2007), table C.4, www.bis.org/publ/rpfxf07t.pdf?noframes=1. Turnover amounts are in U.S. dollars.

52. Thomas D. Willett, *Global Crisis and Korea's International Financial Policies* (KEI Study), chapter 8.

53. IMF, *The State of Public Finances: Outlook and Medium-term Policies after the 2008 Crisis* (March 2009).

On Korea was born in December 2006 with the initiation of KEI's Academic Paper Series.

KEI commissions roughly ten papers per year with diverse perspectives on original subjects of current interest to Korea watchers. Each paper is distributed individually as a KEI Academic Paper to over 2,000 government officials, think tank experts, and scholars around the United States and the world and subsequently collated into *On Korea*.

The third volume of *On Korea* includes nine papers written by some of the leading scholars working on Korea today. To learn more about submitting a paper proposal to KEI for the Academic Paper Series, visit www.keia.org.

Authors:

John Feffer

Myung-koo Kang

Thomas Cargill

Gilbert Rozman

Ki-sung Kwak

Keith Dinnie

Hyunjin Seo & Stuart Thorson

Bruce E. Bechtol, Jr.

Martyn de Bruyn & Sangmin Bae

Korea Economic Institute of America
1800 K St. NW, Suite 1010, Washington, DC 20006
Ph: 202.464.1982 Fx: 202.464.1987 www.keia.org