Recovery from a Financial Crisis: The Case of South Korea

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A desirable financial-crisis model should give policy suggestions for handling a downward spiral as well as an explanation for the causes of a financial crisis.

Financial turbulence and distress characterized much of the 1990s. The decade began with Europe's exchange-rate crisis of 1992–93 and by 2000 had witnessed two more major financial crises. The unexpected financial meltdown of Mexico, known as the Tequila Crisis, began with the peso devaluation in December 1994. This crisis quickly spread to other Latin American countries. The Asian crisis started with Thailand devaluing its currency in July 1997, reached neighboring countries (Malaysia, Indonesia, Philippines, and South Korea) by the end of the year, then spread to Russia in 1998 and to Brazil in 1999. Even though the causes of the crises varied in each country, the Tequila Crisis and the Asian crisis have a commonality defined by Kaminsky and Reinhart (1999) as a twin crisis —a case when currency and banking woes are linked together. A twin crisis is far more severe than when currency and banking problems occur separately.

These unexpected and severe crises prompted much research that focused mainly on their sources.[1] By identifying the sources, researchers hoped to identify long-term solutions as well as to predict financial meltdowns.[2] In the endeavor to find the root causes of the Asian crisis, two hypotheses surfaced: the weak-fundamentals view and the financial-panic view, which are not necessarily mutually exclusive.[3] Each hypothesis has policy implications for the management as well as the prevention of future crises.[4]

According to the weak-fundamentals view, a country's weakness in macroeconomic or financial fundamentals, or both, causes the sudden reversal of capital flows, and major structural reforms and commitment to continue those reforms are necessary to solve the problems.[5] The weak-fundamentals view predicts a slow recovery, because it takes time to recognize bank and corporate losses and to allocate the losses among creditors (Dooley 1999).

The financial-panic view considers a crisis as no more than the reaction of nervous markets (Radelet and Sachs 1998, Marshall 1998, and Chang and Velasco 1999). The eruption of a crisis is a shift from one equilibrium to another, and the recovery process is a shift back to the original equilibrium in a model with multiple equilibria. Reducing the cost of coordination failure among lenders is of utmost importance. To restore market confidence, countries need orderly rescheduling of debt and international cooperation. The financial-panic view expects a fast return to the precrisis economy after market confidence is restored.

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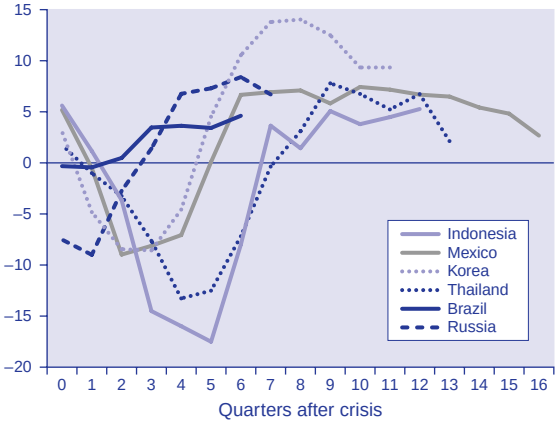
The recovery process of the Asian crisis countries shows, however, that neither of these theories has effectively addressed the recovery process, especially crisis management. When examining the weak-fundamentals view, it is striking that the recoveries started before the implementation of major structural reforms. The financial-panic view cannot explain the scale of nonperforming loans that still make the countries vulnerable to shocks. According to this view, a short-term debt rescheduling and an injection of ample capital by the International Monetary Fund (IMF), even without huge structural reform, would drive an economy back to the original equilibrium. This has not been the case because the economies have not returned to their original equilibria.

It is important to note that these theories do not provide systematic guidance in blocking a self-reinforcing downward spiral, which occurs after a country is hit by a twin crisis.[6] Rather than providing insight into the recovery process, these theories seem better suited for suggesting ways of putting the economy into a sustainable economic growth track or building a stable international financial system for the long run. As we see from the experience of Thailand and Indonesia in the wake of the Asian crisis, solutions to restore market confidence for the long run, such as closing troubled financial institutions and abruptly cutting back government expenditure on food subsidies, can exacerbate the economic and political conditions and deepen the banking crisis.

A desirable financial-crisis model should give policy suggestions for handling a downward spiral as well as an explanation for the causes of a financial crisis. In this article, we investigate the determinants of the recovery by focusing on market reactions and government policy in the hope that it will formulate a better financial-crisis model. The recovery process, however, differs country by country, depending on the country's economic fundamentals, institutional factors, and the world economic conditions at the time of the crisis. Even though countries may have similar GDP growth rates during the recovery period, other economic variables such as domestic credit growth, inflation, and real-wage growth rate may vary. The study of recovery requires careful investigation of each country's experience before theorizing the process in general. We chose South Korea (referred to as Korea hereafter) as our first country to research because it has demonstrated the fastest recovery among the Asian countries by blocking its downward spiral (*Figure 1*).

Figure 1
Real GDP Growth after Financial Crises
Four-quarter percent change



NOTE: Dates of financial crises: Mexico, December 1994; Thailand, June 1997; Indonesia, August 1997; Korea, October 1997; Russia, August 1998; Brazil, January 1999.

SOURCES: Mexico: Instituto Nacional de Estadística, Geografia e Informática; Brazil: Instituto Brasileiro de Geografia e Estatística; Thailand: Bank of Thailand; Korea: Korea National Statistical Office; Indonesia: Biro Pusat Statistic; authors' calculations.

BRIEF REVIEW OF THE EVENTS IN 1997 AND EARLY 1998

In hindsight, the Korean economy had problems, which we may identify as the sources of the crisis. For four decades before the crisis, the Korean government managed economic growth by allocating capital among big conglomerates, called chaebols,[7] and small and medium-size companies. The government controlled the allocation of financial resources by managing both the commercial banks and the state-owned special banks. The bond and equity markets were relatively underdeveloped, so the banking system generally carried out financial intermediation.

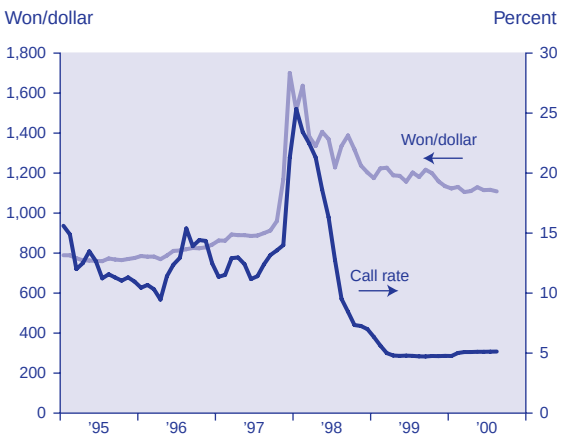
The collusive link among the Korean government, chaebols and the banking industry resulted in inadequate financial supervision and regulations and inefficient use of capital.[8] The merchant banks, some of which were owned by chaebols, had less regulation than the commercial banks.[9] As a result of the chaebols' aggressive expansion and lax financial supervision, the debt/equity ratio of the thirty major chaebols was 500 percent.[10] In January 1997, Korea's second largest steelmaker, Hanbo Iron and Steel, was unable to honor its promissory notes, thus forcing it into bankruptcy. The collapse of other mid-size chaebols, such as Kia Motor, Jinro, and Haitai, followed in early 1997. The weakness of

the Korean financial and corporate sector had become obvious.

The revealed weakness of the Korean economy along with the speculative attack on the Thai baht exposed the merchant banks' liquidity problems. Since early 1997, Korean merchant banks were having difficulty rolling over their short-term dollar loans. This difficulty was more profound in Korea than in any other Asian country (Ito 1999). Korea's ratio of short-term foreign borrowing to foreign exchange reserves was 285 percent, far above the ratios of other Asian countries. For example, Thailand had a 135 percent ratio and the Philippines, 105 percent. The Korean government offered incentives to domestic banks and large private companies to borrow in foreign currencies for industrial development. The result was severe maturity and currency mismatches: The foreign borrowings were short-term, while the domestic loans were for long-term investments, and the foreign borrowings were in foreign currencies.[11]

The merchant banks' difficulties penetrated the commercial banks as a crisis erupted in Thailand. The Japanese banks, which were suffering from their lending in Southeast Asia and their growing nonperforming domestic loans, were major players in a widespread withdrawal of loans.[12] Foreign loans to Korea by Japanese financial institutions dropped from $21.9 billion at the end of 1996 to $8.8 billion by the end of 1997. In response, the Korean government announced on August 25, 1997, that it was committed to providing financial support to commercial and merchant banks and would ensure repayment of all Korean financial institutions' foreign debt liabilities. The markets, however, did not respond to the commitment of a foreign debt guarantee. The inability to roll over short-term loans triggered runs in the Korean currency markets. The Korean won began a free fall and depreciated 25 percent in late November from its precrisis level against the U.S. dollar (*Figure 2*). Currency market intervention left less than $6 billion in usable foreign exchange reserves when the IMF intervened.

Figure 2
Won/Dollar Rate and Call Rate



SOURCE: The Bank of Korea.

On December 4, 1997, the IMF approved a $58.4 billion standby arrangement to build foreign exchange reserves. This rescue plan included a range of structural reforms in the financial and corporate sectors to address what the IMF believed to be the causes of the crisis. President-elect Dae-jung Kim approved the IMF reform package, and a tight monetary policy followed immediately. As a result, the overnight call rate shot up to 25 percent (*Figure 2*).

The currency market turbulence quickly crushed the banking sector. By early 1998, most commercial banks and other financial institutions were in technical default due to the severe depreciation and high interest rates. Damage to the economy by the twin crisis and the tight monetary policy was substantial. Real GDP shrank 8.1 percent in the third quarter of 1998 compared with the previous year (*Table 1*).

CRISIS MANAGEMENT POLICIES AND MARKETS

Currency Markets

In managing a twin crisis, stabilization of the currency market has highest priority because banking sector turmoil cannot be controlled without currency market stabilization. At 13 percent of Korea's GDP, the size of the IMF standby loan to stop a self-reinforcing cycle of capital outflow was unprecedented in the IMF's history.[13] However, the announcement of the IMF program on December 4, 1997, had a minimal immediate effect on the currency market. The won depreciated further (50 percent of the precrisis level) after the announcement. Since the short-term private debt was so large—about $70 billion, twice that of the official foreign reserves in mid-1997—the fear was that relying only on the market for a solution was simply too risky. The currency market started to stabilize only after a temporary agreement to maintain exposure was reached with private bank creditors and discussions on voluntary rescheduling of short-term debt were initiated in late December 1997. The U.S. Treasury's role in attaining this nonmarket solution was significant. As Radelet and Sachs (1998) point out, the coordination of creditors by the U.S. government represented a change in the IMF policy. In Indonesia and Thailand, the IMF had used a loan package together with

Table 1
Real Domestic Product and Related Measures

		GDP growth	Inflation	Private consumption growth	Gross fixed capital formation growth	Exports growth	Imports growth
1996	1Q	7.1	5.9	7.6	6.1	20.3	16.8
	2Q	6.8	4.4	7.7	5.5	3.5	6.7
	3Q	6.5	2.9	6.0	9.3	−7.8	7.7
	4Q	6.7	2.8	7.1	8.2	2.1	14.4
1997	1Q	4.9	1.8	4.5	.8	−5.6	3.9
	2Q	6.2	1.6	4.4	2.2	7.1	.8
	3Q	5.5	2.4	5.3	−3.6	15.6	−3.8
	4Q	3.6	6.2	−1.0	−7.2	3.6	−14.8
1998	1Q	−4.6	11.9	−11.9	−19.9	8.4	−36.2
	2Q	−8.0	6.3	−13.3	−23.9	−1.8	−37.0
	3Q	−8.1	4.1	−12.5	−22.4	−10.8	−39.9
	4Q	−5.9	−.5	−9.2	−18.3	−5.5	−28.7
1999	1Q	5.4	−5.6	7.9	−4.6	−6.1	8.1
	2Q	10.8	−3.5	10.9	4.2	2.5	22.2
	3Q	12.8	−.4	12.4	6.7	15.1	38.7
	4Q	13.0	1.2	12.8	7.2	22.7	44.8
2000	1Q	12.8	−.5	10.8	21.9	29.8	51.9
	2Q	9.7	−.9	8.9	13.2	21.5	38.4
	3Q	9.2	−2.4	5.7	10.5	26.5	35.8
	4Q	4.6	−2.1	3.2	1.6	6.1	16.2

NOTE: Year-over-year percentage change.

SOURCE: Statistics-Korea.

economic reforms in the hope of returning market confidence without using nonmarket solutions. In January 1998, the Korean government converted $24 billion of short-term private debt (mostly by commercial and merchant banks) into claims of one- to three-year maturities with government guarantees. The new arrangements halted the won's fall.

To limit capital flight in the wake of the currency crisis, the IMF plan supported a tight monetary policy. The plan assumed that the resultant high interest rates would increase the cost of capital flight and reduce the pressure on the foreign exchange market. The belief was that if left unchecked, exchange rate overshooting would trigger a depreciation–inflation spiral. The continued depreciation could impose substantial burdens on both the corporate and banking sectors, which were already suffering from overexposure to foreign-currency-denominated liabilities. This more traditional way of handling exchange market overshooting kept interest rates high for several months until the tight monetary policy was eased following stabilization of the foreign exchange market (*Figure 2*).

The tight monetary policy severely reduced economic activity. In the third quarter of 1998, private consumption dropped 12.5 percent and private investment decreased 22.4 percent from the previous year. The change in real GDP, −8.1 percent in the third quarter, was considerably larger than the IMF's initial estimate of 2 to 3 percent in 1998 (*Table 1*). Many economists questioned the appropriateness of a tight monetary policy. The IMF argued that vulnerabilities of the Korean corporate and banking sectors to either an interest rate shock or an exchange rate shock were so great that either could have seriously damaged the real economy (Lissakers 1999). There was a growing sentiment among critics of the IMF plan that in the short run, tightening money was not effective in stabilizing the foreign exchange market. They argued that since the Korean government controlled capital outflow reasonably well and the Korean bond market had negligible foreign investment, a tight monetary policy would have a minimal positive effect.[14]

An empirical study by Cho and West (1999) shows that a 1 percent increase in interest rates

Table 2
Change of Lending by Commercial Banks to the Korean Private Sector

	Percent change				
	'95/'94	'96/'95	'97/'96	'98/'97	'99/'98
Total	4.7	11.8	9.6	−4.8	26.9
Firms	4.6	10.1	8.3	−2.9	20.1
Households	5.2	16.4	12.9	−9.7	44.8

SOURCE: The Bank of Korea.

results in a 1 percent increase in the won/dollar rate. They point out that the 20 percent increase in interest rates was not enough to offset the 80 percent increase in the won/dollar rate. Park and Choi (1999) show that the effect of interest rates on exchange rates is small and statistically insignificant.

Korea's foreign liquidity position rose as its domestic demand collapsed (*Table 1*), resulting in a 1998 current account surplus of $50 billion (12 percent of GDP). This surplus helped reduce the net foreign debt (foreign debt minus foreign loans) from $54.1 billion in December 1997 to $20.2 billion in December 1998.[15] Even though high interest rates were not the only reason for the collapse of domestic demand, they did dramatically reduce domestic investment and personal consumption. Tight monetary policy and capital market liberalization, which allowed foreigners to buy Korean securities, did not greatly increase foreign ownership of Korean equity and corporate bonds. In 1998, net foreign capital inflow to the Korean equity market was $4.7 billion. Net foreign ownership of Korean government and commercial bonds was $0.8 billion.

In summary, the short-term debt rescheduling, the IMF bailout, and the collapse of import demand following a tight monetary policy stabilized the currency market. The tight monetary policy stabilized the market primarily by severely reducing domestic economic activity.

Credit Markets

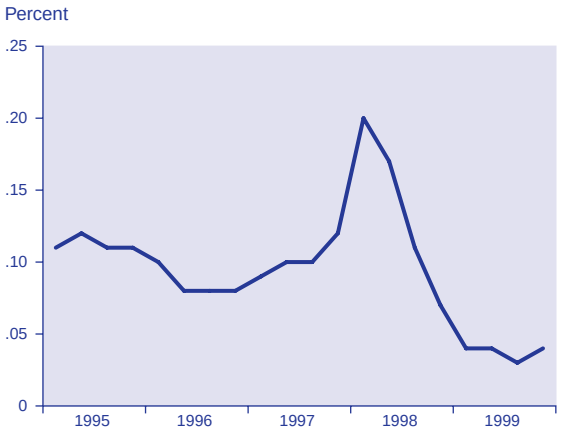
Crisis economies tend to have downward spirals. These spirals begin with defaults in the banking sector and subsequent increases in nonperforming loans, thus making loans to corporations more unlikely and deepening the recession overall. Therefore, after stabilizing the currency market, blocking the downward spiral becomes a major policy objective of twin crisis management. To achieve this, the private sector must have access to credit markets, and individual companies must reduce their financial stress by cutting costs.

Bank Loans. Since bank loans are the major source of private credit in most non-Western economies, the trend in private bank credit is a key indicator of the credit conditions in these economies. The spiral of corporate defaults and decreasing loans lasted less than a year in Korea (*Figure 3* and *Table 2*). In 1998, real lending by commercial banks to the private sector declined 9.7 percent to households and 2.9 percent to firms. In 1999, overall lending by commercial banks to the private sector jumped 26.9 percent in real terms. Korea was able to contain its downward spiral by effectively sustaining bank credits to the private sector. This feature of recovery is notable when we compare bank lending in crisis countries (*Figure 4*).[16]

Korea's ability to contain its downward spiral has a lot to do with the government's traditional role as a moderator in the financial market. Shortly after the beginning of the IMF program, two major commercial banks—Korea First Bank and Seoul Bank—were nationalized rather than closed. They required a large capital injection of about 5 percent of GDP. While capital flight was occurring in 1997, the government announced full deposit guarantees for all financial institutions.[17] This policy, together with the nationalization of commercial banks and Korea's fiscal health, prevented runs in the financial sector. Precrisis Korea had a low government debt/GDP ratio of less than 20 percent. Even though the IMF program emphasized the role of private funds in the recapitalization and restructuring of financial institutions, public funds constituted a majority of the money used for these purposes.

About half of the first round of public

Figure 3
Percentage of Commercial Bill Defaults

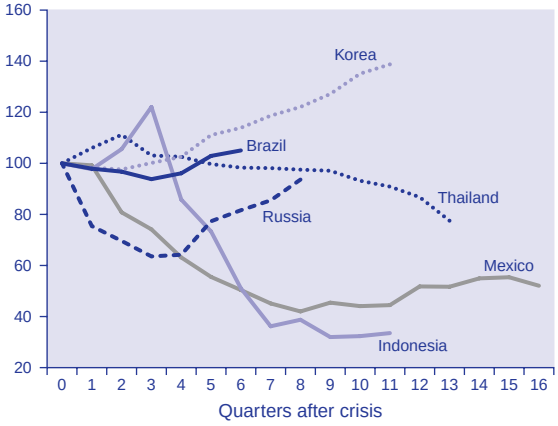


NOTE: Number of defaulted commercial bills/total amount issued.
SOURCE: The Bank of Korea.

Figure 4

Real Commercial Bank Lending to the Private Sector

Index, quarter of crisis = 100



SOURCES: *International Financial Statistics*, International Monetary Fund; authors' calculations.

funds, 32.5 trillion won ($25 billion, 7.2 percent of 1997 GDP) was used to purchase nonperforming loans. Korea Asset Management Corporation (KAMCO) played a central role in loan consolidation. Deposit payment, recapitalization, and loss coverage had cost 31.5 trillion won ($24 billion, 7.0 percent of 1997 GDP).

The nationalization of commercial banks and centralized purchasing of nonperforming loans enabled the government to control most of the financial institutions' decisionmaking process. Through its administrative powers, the Financial Supervisory Commission pressured the commercial banks to roll over all existing debt of small and medium-size firms until the end of 1998. From July to November 1998, 89.3 percent of loans to small and medium-size firms were rolled over, accounting for 52 trillion won ($40 billion), or 36 percent of total loans to firms. Furthermore, the government "encouraged" the banks to lower loan rates to small and medium-size firms and to relax conditions on bank loans. The banks' progress in supporting small and medium-size firms was regularly monitored and reported. As a result, the ratio of loans to small and medium-size firms to total loans to firms increased from 62.6 percent (December 1997) to 64.7 percent (December 1998) and 66.4 percent (October 1999). Considering that credit to small firms generally contracts relative to large firms during recessions and periods of tight monetary conditions (Gertler and Gilchrist 1994), the increased ratio in Korea is notable. The average nominal loan rate to small and medium-size companies dropped below precrisis level (from 13.27 percent in November 1997 to 12.43 percent in November 1998).[18]

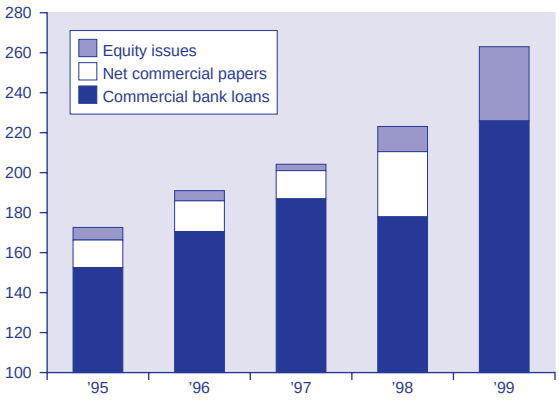
Capital Markets. Development of diversified funding sources can soften the shock of a credit crunch. Federal Reserve Chairman Alan Greenspan noted: "Downward spirals can be contained with less damage when corporations find alternative funding sources outside the weakened financial sector. When American banks seized up in 1990 as a consequence of a collapse in the value of real estate collateral, the capital market, largely unaffected by the decline in values, was able to substitute for the loss of bank financial intermediation. Likewise, when public capital markets in the United States dried up following the Russian default of August 1998, dramatic restoration was possible because commercial banks replaced the intermediation function of the public capital markets" (Greenspan 1999).

Korea's credit crunch was mild compared with those in other crisis-struck countries partly because Korea did not remain solely dependent on its banking sector. In 1998, it countered the reduction of bank loans with commercial bond issues. As a result, the overall direct financing of corporations and lending did not decline (*Figure 5*). However, Korea's alternative funding sources did not stem from sound economic fundamentals. Commercial paper composes a minor portion of corporate financing in Korea. But as fresh loans dried up, the conglomerates issued commercial papers extensively to avoid defaults. In 1998, net commercial paper issues jumped 154 percent from the year before and outpaced the decrease in bank loans (*Figure 5*).

Figure 5

Bank Loans, Commercial Papers, and Equity Issues

Unit = trillion won in 1995 price



SOURCE: Financial Supervisory Service, Korea.

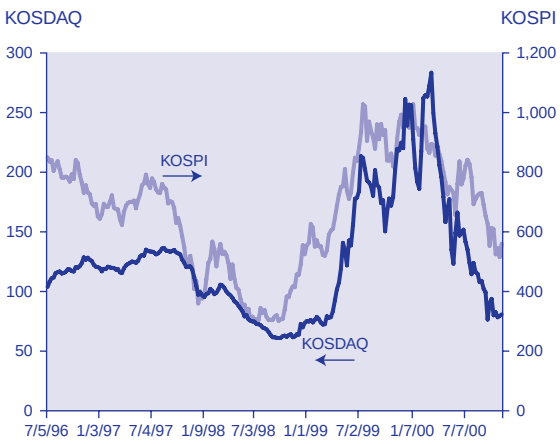
With a too-big-to-fail mentality, the investment trust firms, which were under competitive pressure and lax supervision, bought the conglomerates' commercial papers, of which Daewoo was the major issuer. The government was slow in supervising the excessive issuance until the end of 1998.

The technical default of Daewoo triggered the 1999 crisis of investment trust firms. This crisis involved the classic elements of a financial crisis: liberalization, lax financial supervision, and moral hazards.[19] As a consequence, the commercial paper market collapsed and new commercial paper issues dried up. By 1999, the net issue of commercial paper was negative.[20] In the fall of 2000, as the due date for the commercial papers issued in 1998 and 1999 neared, the government organized a 20 trillion won ($15.4 billion, 4.1 percent of 1999 GDP) capital-market stabilization fund to bail out the medium-size conglomerates that did not have credit to roll over their commercial papers.

Equity Markets. In 1999, after the collapse of the commercial paper markets sparked by Daewoo's default, firms achieved access to financing through yet another source: the equity market. With 1999 interest rates the lowest in recent history, equity investment gained tremendous momentum. Labor cost reductions increased expectations of company profits. The government deregulated foreign ownership of Korean equities and simplified stock market transactions. Foreign ownership of Korean equities reached 76.6 trillion won ($58.9 billion, 21.9 percent of total market value) in December 1999 and increased to 87.7 trillion won ($67.5 billion, 29.7 percent of total market value) by June 2000. Various types of new mutual funds were allowed. Government funding to venture capital companies, together with the global high-tech boom, boosted stock prices (*Figure 6*). Patriotic slogans were used to stimulate involvement in the stock market, and some chaebols manipulated their stock prices.[21] In 1999, the Mathew Korea Fund was the best-performing mutual fund in the United States.

In 1999, capital raised by Korean corporations through equity issues reached 39.1 trillion won ($30.1 billion), which was 23 percent of commercial bank loans outstanding to firms. Private firms' total credit outstanding (bank loans plus net commercial paper issues plus equity issues) increased 19 percent. The rich credit conditions of the private sector, together with a household consumption boom following the stock market boom, led Korea's GDP to grow a spectacular 10.6 percent. By the end of 1999, no one was talking about the downward spiral of the economy.

Figure 6
Stock Market Indexes in Korea



SOURCE: Statistics-Korea.

Labor Markets

During a financial crisis, high nominal wages have a depressing effect on output mainly through greater financial pressures on firms rather than through the conventional labor channel (Bernanke and Carey 1996).[22] An inflexible labor market can increase the probability of bankruptcy for cash-poor firms and, in so doing, deepen the downward spiral. Cole and Ohanian (1999) show how rigid nominal wages delayed the U.S. recovery from the Great Depression. During the Great Depression, working hours were not increased and the real wage of labor was not reduced. U.S. institutional factors permitted monopolies and actually raised wages, which in turn led to depressed employment, output, and investment—thus, a slow recovery.

Korean labor markets responded drastically to the financial crisis and subsequent legal and institutional changes. In February 1998, government, business, and workers reached the Tripartite Agreement that facilitated employment adjustment in the Korean labor market. At this time, layoffs were officially codified under the amended Labor Standard Act. The Legislation of the Manpower Lease Act legalized the use of temporary workers. Layoffs immediately following enactment of the codes of the new Labor Standard Act were minimal but signaled the weakened power of the labor unions and the advent of an easier employment adjustment.

Employment adjustments, including layoffs and wage cuts, spread throughout the economy. The unemployment rate shot up to 8.6 percent

by early 1999 (*Figure 7*). Temporary positions replaced many permanent ones. In May 1998, workers with permanent jobs were 53.1 percent of the total work force. By May 1999, they had dropped to 47.5 percent.

Real employment cost per worker in the manufacturing sector dropped 6.8 percent in 1998, or 2.1 percent in nominal terms (*Figure 8*). The reduction of the employment cost per worker reflects the nominal wage cuts, replacement of permanent positions with temporary ones, and decreased working hours (*Table 3*). In the meantime, real value added per worker increased 6.4 percent. As wage growth fell behind productivity growth, the unit labor costs—the ratio of hourly compensation to labor productivity in manufacturing—dropped 20 percent (28 percent in real terms) from 1997 to 2000. A comparison with the U.S. unit labor cost in manufacturing for the same period illustrates the magnitude of Korea's drop. The United States had a 7.3 percent drop in real terms compared with Korea's 28 percent.

The reduction of labor costs helped the companies with heavy debt survive while commercial banks, which were traditionally the main source of finance, were in trouble. Furthermore, once the companies survived the crisis, their higher profits as a result of lower labor costs helped vitalize the equity market. The companies were then able to finance directly through equities. In short, reduction of labor costs led more private firms to survive during the period of financial stress, resulting in a faster than expected recovery.

What does this labor adjustment tell us about the Korean labor market and the recovery process? If we follow the financial-panic view, we derive the hypothesis that the Korean labor market was quite flexible before the financial crisis, and the labor market adjustment was the endogenous response of factor markets regaining original equilibrium. However, if we use the weak-fundamentals view, our hypothesis is that the Korean labor markets were not flexible at the onset of the financial crisis, but they became more flexible and efficient due to legal and institutional changes.

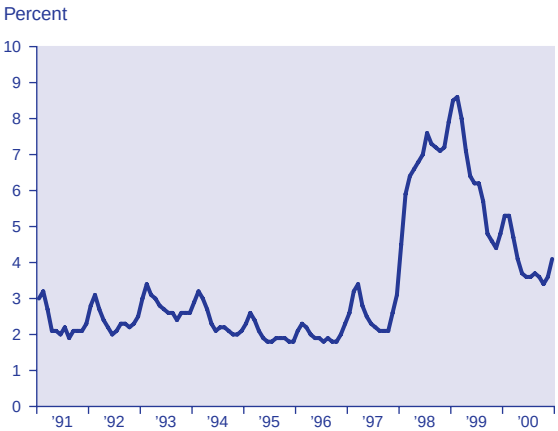
A flexible labor market enables a fast convergence of wages and the marginal product of labor when a shock causes a gap between the two. Using this criterion, the hypothesis based on the financial-panic view is easily negated.

Table 3
Working Hours Index in Manufacturing

		Working Hours Index	Year-over-year growth rate
1997	1Q	94.5	–2.2
	2Q	98.7	–1.0
	3Q	95.6	–.8
	4Q	99.8	–.8
1998	1Q	89.4	–5.4
	2Q	94.8	–4.0
	3Q	94.5	–1.2
	4Q	96.2	–3.7
1999	1Q	96.9	8.3
	2Q	103.0	8.7
	3Q	101.1	7.0
	4Q	105.7	9.9
2000	1Q	100.3	3.5
	2Q	99.9	–3.0
	3Q	98.6	–2.4
	4Q	102.2	–3.3

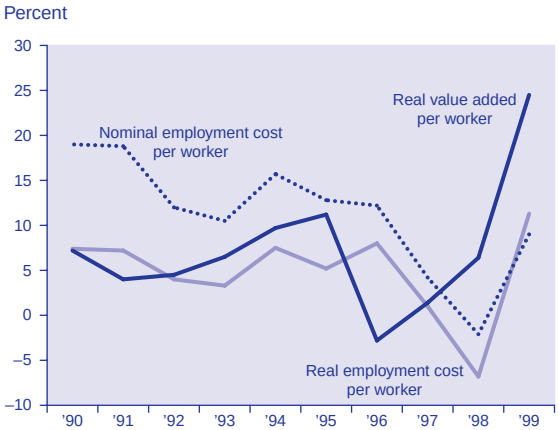
SOURCE: Korea Productivity Center.

Figure 7
Unemployment Rate



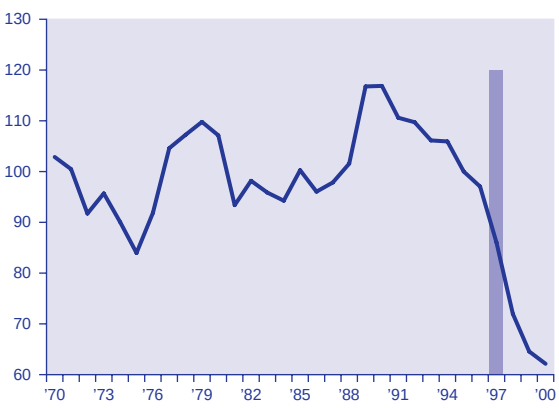
SOURCE: Statistics-Korea.

Figure 8
Growth of Productivity and Employment Cost Measures in Manufacturing



SOURCE: Financial Statement Analysis, The Bank of Korea.

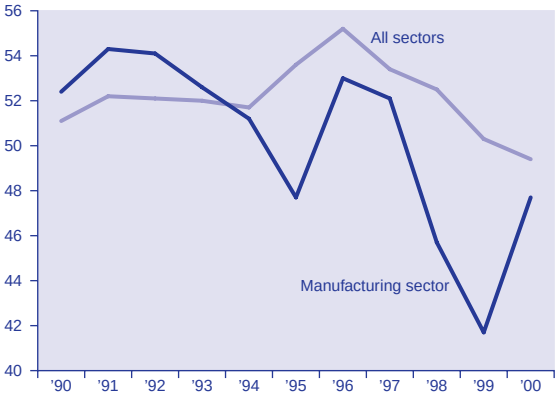
Figure 9
Real Unit Labor Cost in Manufacturing



NOTE: Real unit labor cost = unit labor cost/CPI = (hourly wage index/labor productivity)/CPI.

SOURCE: Korea Productivity Center.

Figure 10
Labor Shares



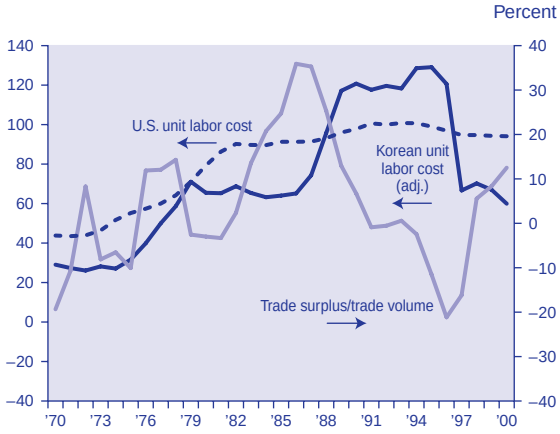
SOURCES: Financial Statement Analysis and National Income Account, The Bank of Korea.

The unit labor cost dropped 28 percent in real terms and has not risen significantly since the financial crisis (*Figure 9*).[23] The decline is evidence that either Korean labor earned more than it produced before the crisis or labor now earns less than it produces, or both. None of these interpretations support the financial-panic view hypothesis. Even more evidence negates the hypothesis: The ratio of employee compensation to manufacturing sector income dropped from 52.1 percent in 1997 to 41.7 percent in 1999. The National Income Account reveals this labor-share trend. The overall labor share declined from 53.4 percent in 1997 to 50.3 percent in 1999 and 49.4 percent in 2000 (*Figure 10*). A flexible labor market mechanism does not solely explain this significant procyclical behavior of labor shares. Because profit is more volatile than wage to business cycles, it is natural to expect the labor share to be countercyclical.

To examine the second hypothesis, based on the weak-fundamentals view, we compare the dollar-valued Korean unit labor cost and the U.S. unit labor cost (*Figure 11*). We use the ratio of trade surplus to trade volume between Korea and the United States and set the base year so that the trade surplus is close to zero when the unit labor costs are the same in both countries. The results show that Korean unit labor cost in manufacturing increased dramatically after the 1987 citizens' uprising and resulted in a trade deficit against the United States. When we use the number as a benchmark, it appears that the Korean labor was paid more than it produced during the 1990s until the financial crisis erupted. This supports the weak-fundamentals hypothesis that the Korean labor market was not flexible or efficient before the crisis. However, the second hypothesis alone cannot explain why Korea's unit labor cost is far lower than that of the United States after the crisis.

We need to research further the overshooting of labor cost reductions. However, for now we may consider the following two views in explaining the phenomenon. First, the Korean economy may have experienced a significant structural change, which fundamentally shifted its production function parameters after the crisis. This change is reflected in the shift in labor share. Legal and institutional changes after the financial crisis, an investment boom in the information technology industry, and a rapid change in the composition of Korean export goods due

Figure 11
Korean and U.S. Dollar-Basis Unit Labor Costs, and Ratio of Trade Surplus/Trade Volume



SOURCES: Statistics-Korea; Korea Productivity Center; Bureau of Labor Statistics.

to China's export growth may have all contributed to the structural change. Second, an implicit social contract among laborers, conglomerates, and government may have caused stagnating wages. In 1998, government employees returned 10 percent of their salary to the government for the establishment of funds aiding the unemployed. Private companies also cut wages. When nominal wages are rigid, an implicit social contract can increase the probability of a firm's survival during a crisis period and can improve the employees' welfare if the contract is reasonably well honored after the crisis is over. The 1998 wage cuts were accomplished without serious social conflicts in a nation with a history of notoriously militant labor unions. Korean laborers could have possibly believed that the prolabor government of Dae-jung Kim would guarantee the implementation of the implicit social contract after the crisis was over.

AFTER THE RECOVERY

Korea recovered from its currency market panic after only a year as a result of the IMF bailout, payment reprogramming, a tight monetary policy, and the collapse of import demand. The downward spiral of a credit crunch and corporate defaults was contained remarkably as companies faced lower labor costs and alternative financing sources. Having been the major source of corporate funding, commercial bank lending bounced back, thus helping to contain the downward spiral. The recovery of bank lending to the private sector was a result of capital injection by the government, unlimited deposit insurance, and administrative intervention to promote rollovers to ailing companies. The government's role was not limited to maintaining commercial bank loans. It also fine-tuned capital and equity markets.

The significant role of payment reprogramming, labor adjustment, and government intervention in the markets leads us to wonder whether the Korean recovery process addressed the possible sources of the crisis as the crisis theories do.

After the crisis, the IMF strongly recommended a floating exchange rate. Many economists believed that to prevent future currency crises, there were only two exchange rate regime choices, a floating exchange rate or a fixed exchange rate (currency board or dollarization). But as the currency market panic subsided, Korea returned to a crawling peg system in the hope of keeping a trade surplus and a foreign reserve surplus. In September 2000, the Bank of Korea had $92 billion of foreign reserves. Foreign exchange intervention had become a frequent government tool. Bond issues to sterilize the intervention increased to 64 trillion won (13.2 percent of GDP) in 2000 from 22 trillion won (4.8 percent of GDP) in 1997.

Even after the remarkable recovery, which was in part accelerated by low labor and financial costs, the majority of Korean chaebols are still not profitable. In 1999, eighteen of the twenty-seven largest chaebols had financial expenses that exceeded operating profits, and seven of those had not been profitable for three years.[24]

The accumulated loss in the corporate sector eventually is transferred to the financial sector in the form of nonperforming loans. The government's injection of more than 60 trillion won (12 percent of 1999 GDP) into the financial sector did not reduce the ratio of nonperforming loans to total loans to a comfortable level. When applying forward-looking standards, nonperforming loans in all financial institutions were 14 percent in June 2000. It is expected that the burden of government will continue to grow unless the chaebols' profitability improves dramatically.

Major Events Related to the Crisis

January 1997	Hanbo Steel defaults on its loans, the first of a string of major corporate failures in 1997.
May 1997	Speculators attack Thailand's baht.
July 1997	The Bank of Thailand announces a managed float of the baht and asks the IMF for technical assistance.
August 1997	Indonesia abandons its managed exchange-rate regime.
October 1997	The Korean won begins to rapidly depreciate.
December 1997	The IMF approves a $21 billion loan for South Korea, part of a bailout package that will total $58.4 billion.
	Dae-jung Kim is elected president of South Korea.
January 1998	International creditor banks and the South Korean government agree to exchange $24 billion of short-term debt for new loans with staggered one- to three-year maturity dates.
	The Korean government shuts down a third of its thirty merchant banks.
February 1998	Layoffs are officially codified under the amended Labor Standard Act following the Tripartite Agreement reached by the government and the business community. The Legislation of the Manpower Lease Act legalizes the use of temporary workers.
August 1999	The South Korean government begins dismantling the second biggest conglomerate in the country, Daewoo, which is in technical default.
September 1999	To avoid financial market seizure due to the collapse of the Daewoo group, the Korean government organizes a commercial paper market stabilization fund and raises $24 billion.
December 1999	President Dae-jung Kim announces the end of the currency crisis.
August 2001	Korea repays its $19.5 billion IMF loan.

Problems with fiscal debt are also surfacing. In precrisis days, the government had no problems issuing bonds to inject money into the financial sector and to provide unemployment insurance. However, the crisis pushed up the government debt to 40 percent of GDP in 2000. With financial and corporate restructuring still in progress, the debt will rise.

CONCLUDING REMARKS

What matters most in management of a twin crisis is stabilizing the currency market and containing the downward spiral. Korea was able to manage the twin crisis, and Korea's macro variables—such as GDP growth, unemployment rate, inflation rate, and current account deficit—improved tremendously shortly after the crisis broke out.[25] However, corporate profitability and nonperforming loans have not adequately improved, and the precrisis foreign exchange regime has returned. These were the very conditions that were blamed for the crisis.

The Korean government did not wait for market confidence to stabilize the financial markets. Instead, it aggressively controlled the financial institutions to keep the country's credit system intact while pursuing gradual structural reform. In this regard, the Korean government did not thoroughly follow the policy implications of the weak-fundamentals view that focus on prompt structural reform and recapitalization of the financial sector. Companies were able to survive the crisis partly because real wages did not increase as much as labor productivity. The labor market dynamics and fast recovery, however, do not necessarily support the recovery feature of the financial-panic view. Korean labor markets were not flexible and efficient before the crisis, and labor adjustment overshot after the financial crisis.

Korea's recovery was only possible after it gained control of its currency crisis. Interestingly, the recovery process affirms neither the weak-fundamentals view nor the financial-panic view. Although some weak fundamentals were addressed after the crisis, the recovery was in motion before the fundamental problems were secured, and Korea continues to struggle with structural weaknesses that were present before the crisis. The financial-panic view also does not adequately explain what took place in Korea. Calming nervous investors so that conditions would stabilize and return to precrisis levels isn't what happened. Conditions stabilized, but they did not return to precrisis levels. A combination of factors in crisis management contained the downward spiral. Korea can attribute much of its recovery to the creation of alternative funding sources and labor adjustments.

NOTES

The authors would like to thank Gon-yung Park, Erwan Quintin, Mark Wynne, and Carlos Zarazaga for their insightful comments and suggestions.

1 Innumerable papers deal with the causes of the Asian crisis, many of which can be found on Nouriel Roubini's home page, http://www.stern.nyu.edu/~nroubini/asia/AsiaHomepage.html.

2 Eichengreen (1999), for example, argues, "Proposals for reforming the international financial architecture make sense only if they address the fundamental causes of financial crises."

3 Glick (1999) shows that a financial panic can occur as a result of weak financial fundamentals. We also can construct a model illustrating that financial panic leads to a collapse of the financial system. While recognizing the possibility of "observational equivalence," we interpret each view as arguing that weak fundamentals or financial panic, respectively, can explain the majority of damage the economy suffered.

4 Zarazaga (1999) asks whether these theories are examples of Monday morning quarterbacking, especially in the sense that the theories may not be useful in forecasting future crises.

5 Goldstein (1998) and Krugman (1998) point out that implicit guarantee of deposits in financial institutions of emerging market economies invited too much capital inflow. The crisis, or massive capital outflow, they argue, happened when foreign investors suddenly realized that their lending to local financial institutions was not actually guaranteed. Burnside, Eichenbaum, and Rebelo (2000) argue that large prospective deficits stemming from guarantees to failing financial sectors tend to cause twin crises.

6 A downward spiral occurs when a recession forces corporations to delay or default on their bank payments. As the amount of nonperforming loans rises, banks' cash flows are squeezed, forcing them to halt new lending to illiquid corporations and to call in even good loans to raise cash, all of which further deepen the recession.

7 See Hunter (1999) on the history of chaebols, large family-controlled industrial conglomerates, and the role of capital allocation.

8 Borensztein and Lee (1999) empirically show that bank and foreign loans were not directed to the relatively more profitable industries in Korea (1970–1996).

9 Korea's merchant banks specialize in short-term corporate lending and have different regulations and structures than commercial banks. Korean chaebols typically financed their capital expenditures by borrowing from commercial banks. However, they often

financed their working capital by issuing promissory notes. When suppliers needed paying, they turned to merchant banks, which discounted the note and gave them funds. Precrisis, the merchant banks generated easy profits with their aggressive investments in Southeast Asia, Russia, and other emerging markets. However, these risky investments turned into a $3 billion loss by late 1997.

[10] The debt/equity ratio in Taiwan is about 120 percent, and the norm for industrial countries is below 200 percent.

[11] The maturity mismatches by Korean merchant banks were riskier than the mismatch of other deposit institutions because the number of depositors (foreign lenders) was smaller than in other types of deposit institutions, such as commercial banks.

[12] Japan's response supports the premise that Korea's liquidity problem was triggered by the contagion from Southeast Asian countries rather than by intrinsic problems within its economic structure.

[13] The standby loan, $58.4 billion, was financed as follows: IMF ($21.1 billion), Asian Development Bank and World Bank ($14.2 billion), and others ($23.1 billion). The $23.1 billion was a "second line of defense" from individual donor governments such as the United States, Japan, and Europe, a small portion of which was eventually delivered. See Lane et al. (1999).

[14] Furman and Stiglitz (1998) argue that during a period of high interest rates, exchange rate movement depends on the strength of the offsetting movements in the promised rate of return, the probability of bankruptcy, and an increase in the risk premium. If high interest rates bring about investor confidence in the monetary authority, they can help stabilize the exchange market. However, if the reverse takes place, the exchange rate could be permanently weakened. Goldfajn and Gupta (1999) analyze eighty countries and show that high interest rates stabilize the exchange rate following a currency crisis. However, they find in their sample that the relationship between high interest rates and exchange rate stability is insignificant when a banking crisis follows a currency crisis.

[15] The IMF money was not used to pay back private foreign loans. Most of it was set aside as foreign reserves and returned to the IMF by the end of 1999.

[16] For example, the Korean case is strikingly different from the case of Mexico. Mexico has experienced a continued reduction of bank loans to the private sector since the economy was struck by the crisis at the end of 1994. The Mexican economy bounced back because of the extension of foreign credit to the export industry. Mexico's GDP fell 6.2 percent during 1995, but the GDP grew 5.2 percent in 1996 and 7 percent in 1997. (See Krueger and Tornell 1999 regarding the role of export to the recovery of Mexico's economy.) As fresh loans dried up, nontradable sector companies and households suffered severe credit deficiencies. The downward spiral continued more than five years in the nontradable sector while export industries flourished. The result was an asymmetric recovery with a huge gap between the tradable and nontradable sectors.

[17] The Korean government reduced the guarantee to a maximum of 50 million won per person beginning in 2001.

[18] Source: Financial Supervisory Service, Korea.

[19] Gruben, Koo, and Moore (1999) show how financial liberalization can lead to supracompetition and risky behavior in commercial banking sectors when sound supervision does not exist.

[20] Net commercial paper issue is equal to the value of new issues minus the value of the redemption of previously issued paper.

[21] Hyundai Securities was eventually indicted for this type of operation. It boosted its affiliates' stock prices by manipulating its mutual fund, the Buy Korea Fund.

[22] In the conventional labor channel, high real wages decrease equilibrium output as firms decide production at the point where real wages equal the value of the marginal product of labor.

[23] The won unit labor cost has declined since 1991. The 1987 citizens' uprising greatly strengthened the bargaining power of Korea's labor unions. As a result, the unit labor cost accelerated. The decline of the labor cost before the financial crisis can be attributed to the slow adjustment process of labor markets to the political shock of the uprising. It is also worth noting that Korea's dollar unit labor cost did not decline before the crisis (*Figure 11*).

[24] Source: Financial Supervisory Service.

[25] Mild decline of the GDP deflator in 1999 and 2000 (*Table 1*) partly comes from the stabilization of the Korean currency. The consumer price index does not show deflation during the period.

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