An Assessment of Structural Reforms in Korea: Implications for Economic Revival in Japan

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Prior to the economic crisis, realestate prices, wage rates, interest rates, and the exchange rate had been derailed on a large scale from the levels reflective of Korea's economic fundamentals. This distortion was the ultimate source of Korea's economic crisis but was remedied only partially during the last five years, leaving the task of economic reform as incomplete. Although a consensus view about the fundamental source of Japan's economic problems has not yet emerged, a chronology of Japan's lost decade casts doubts about the popular view that financial reform is the sufficient condition for a durable recovery in Japan. We suggest that Japan's effort should be directed to improving productivity of nontradable service sector and to solving the problem of population aging.

Keywords: Korean economic crisis, Japan's lost decades, Economic reform

JEL Classification: E60, O53

I. Introduction

This essay seeks lessons from the Korean experience in structural reform that could be of benefit to Japan in reviving its economy. Korea has been congratulated for overcoming macroeconomic catastrophe in one year. This spectacular achievement is

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looked upon as representing the benefits of structural reform, thereby drawing attention from economists interested in the challenging issue of how to resuscitate Japanese economy.

The origin of Korea's economic crisis resided in a distorted price system which forced national income to be allocated out of corporate operating surplus into labor compensation. This pattern of disproportionate income allocation had persisted consistently for a very long time and caused the corporate sector to accumulate a huge amount of debt and, consequently, a staggering amount of non-performing loan in the financial sector. The structural reform in Korea during the last five years could rectify the distorted price system to the extent that a startling recovery ensued right after the crisis. In retrospect, however, the distortions which drove the nation into the economic crisis were remedied only partially, leaving the task of economic reform as incomplete. This experience highlights that chief sources of economic problems should be identified correctly in the first place and then determined efforts should be made to tackle the identified problems.

The process of Japanese chronic recession is very different from and more complicated than that of Korea's economic crisis. It seems to us that a consensus view about the fundamental source of Japan's prolonged slump has not yet emerged either. Various diagnoses and prescriptions have been suggested by foreign academics, foreign government officials, and staff members of international economic organizations. We believe, however, that only the Japanese are in a position to ascertain the ultimate causes of their recession and prescribe the right solutions for it because no other country in the world has ever suffered the same kind of recession as Japan has. We propose, however, that Japan's economic reforms should be directed to improving productivity of nontradable service sector. We also suggest that the problem of population aging is one of the ultimate sources of Japan's lost decade.

In Section II, we start with describing the origin of Korea's economic crisis, *i.e.* the distorted price system. We then proceed in Section III to evaluate to what extent the distortions were corrected during the last five years. In Section IV, we summarise a chronology of Japan's lost decade and elicit some lessons which may be useful for reviving the Japanese economy. Concluding remarks are included in Section IV.

II. Origin of Korean Economic Crisis

During the economic crisis in 1998, Korea's macroeconomic performance changed dramatically in a disastrous way; much more disastrous than anyone could have imagined. Its annual real growth rate in 1998 plunged to −6.7 percent, its lowest since the Korean War (1950-3). In 1999, however, the real GDP growth rate recorded 10.9 percent, a remarkable 17.6 percentage points improvement from −6.7 percent in the previous year. Such a sudden and abrupt recovery from recession is unprecedented in the world history of economics since the World War II. The economic recovery was spectacular indeed, but the overall adjustment process can be characterized as an 'adjustment at the cost of growth.'

Numerous explanations have been put forth for Korea's currency and financial crises using different approaches.[1] However, the ultimate cause must have been the low profitability of the corporate sector, which was under a crushing burden of financial debt. It is ironic that, instead of being flush with cash, the corporate sector of a country which had been praised for splendid achievements in economic growth should have suffered such deep and extensive indebtedness. At the heart of the low profitability was a deeply entrenched incentive system which directed an excessive amount of corporate revenue into labor compensation. The bulk of whatever income generated at any point during the business cycle was distributed outside the corporate sector through the traditional income allocation patterns. The corporate sector inevitably piled up more and more of debt and the financial sector, in turn, was saddled with an excessive burden of non-performing loans until the economy became extremely vulnerable to external shocks.

A. Disproportionate Income Allocation Pattern

For the last three decades, the Korean economy has expanded vigorously. The nominal GDP has increased by 219 times, from 2.7 trillion won in 1970 to 596.4 trillion won in 2002. The dollar-

[1]References are abundant. To name a few, Calomiris (1998), Corsetti, Pesenti, and Roubini (1999), Dooley (1997, 2000), Feldstein (1999a, 1999b), Frankel and Roubini (2001), Furman and Stiglitz (1998), Krueger (1997), Krugman (1998), Lane and Phillips (2000), Radelet and Sachs (1998), Summers (2000).

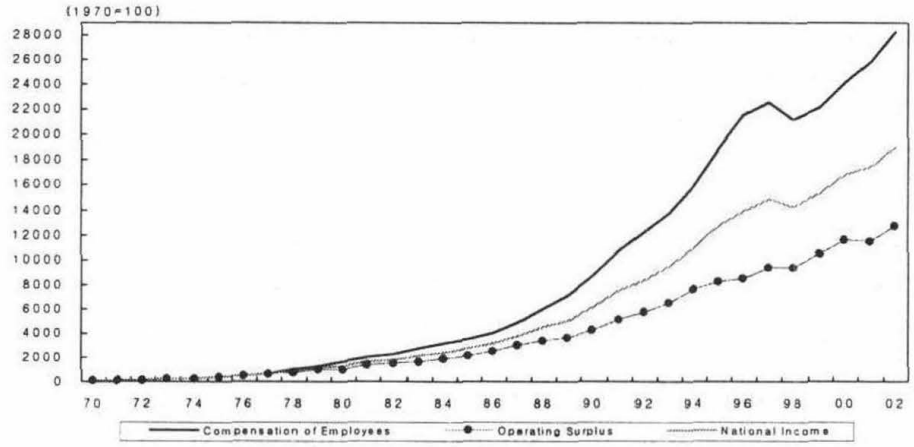


FIGURE 1

TRADITIONAL PATTERN OF ALLOCATION OF NATIONAL INCOME (I)

denominated per capita GDP amounted to 10,006.2 dollars in 2002, 37 times as big as that in 1970. The national income, defined as the sum of labor compensation and operating surplus,[2] has increased by 191 times when aggregated at 1995 constant prices.

While the economy had developed enormously, the qualitative pattern of income allocation has not changed at all during this period. Figure 1 displays the traditional allocation of the national income between compensation of employee and operating surplus. It shows that labor compensation has increased at a much higher rate than the operating surplus. More specifically, labor compensation increased 282 times from 1970 to 2002, while operating surplus increased 127 times. Clearly, the Korean economy had allocated consistently a much higher percentage of corporate profits into labor compensation during this entire period.

Figure 2 redraws Figure 1 putting all of national income, operating surplus and labor compensation at a baseline of 100 at 1970, 1980, and 1990, the first years of each decade. Figure 2 reveals an interesting fact that the growth in labor compensation has exceeded that of the operating surplus by large margins at specific times during the following three sub-periods. The first was

[2]Equivalently, the national income can be obtained by adding subsidies to GDP and then subtracting from it, indirect taxes, depreciation and net factor incomes from abroad.

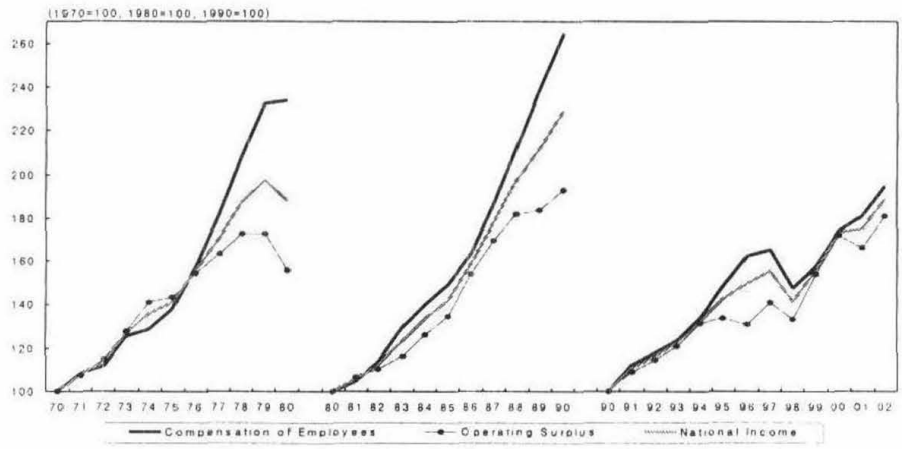


FIGURE 2

TRADITIONAL PATTERN OF ALLOCATION OF NATIONAL INCOME (II)

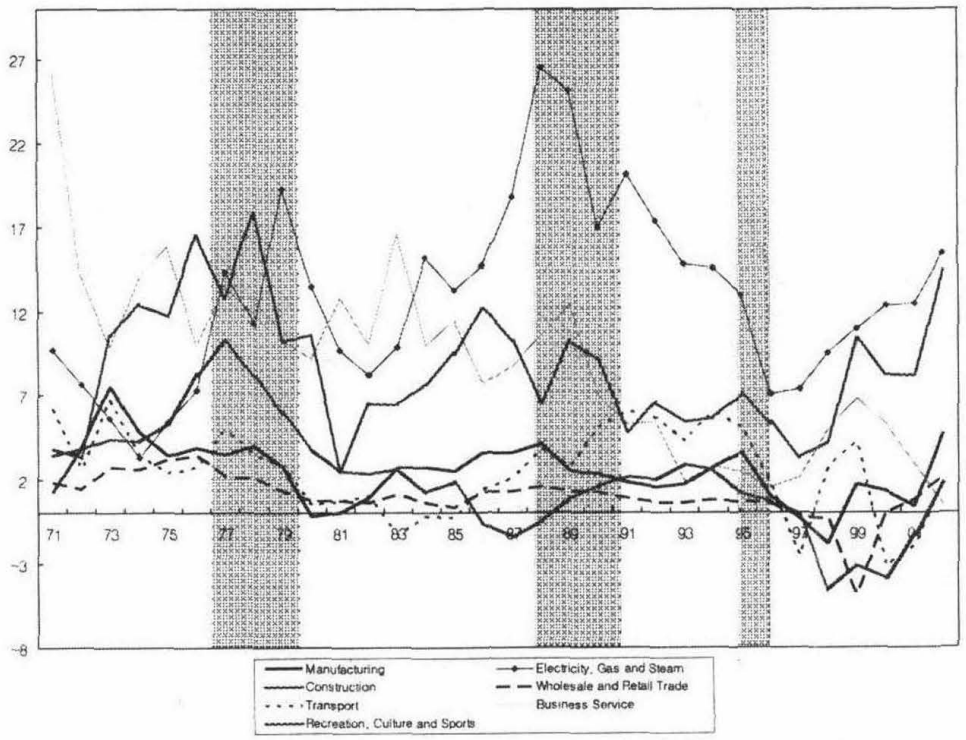
late 1970s, which includes the second oil shock (1977-80); the second was late 1980s and early 1990s, when increases in real wages were explosive and the realestate bubble had emerged and expanded vigorously (1988-91); and the third was mid 1990s, which overlaps the cyclical recession after the expansion of the semiconductor industry (1995-6).

If labor compensation increases at an excessive rate with respect to operating surplus, it can be looked upon as a profit squeeze (Sachs 1979). Figure 3 shows the ordinary income to sales of each industry and indicates by means of shaded area the three periods of profit squeeze, *i.e.* 1977-80, 1988-91, and 1995-6. The ordinary income to sales declined markedly during the periods of profit squeeze with only minor exceptions.[3]

The periods of profit squeeze are closely related with cyclical recessions. The period from 1977 to 1980 includes the contractionary phase of the second business cycle[4] (February 1979-

[3]The exceptions are electricity · gas · steam industry in 1977-80 reflecting high energy prices, and construction industry, realestate service industry, and transportation · warehouse · communication industry in 1988-91 affected mostly by severe realestate bubble and expanded consumption of automobiles.

[4]The official dating of business cycle expansions and contractions published by the Korea National Statistical Office starts from the year of



Source: *Financial Statement Analysis* (Various Issues).

FIGURE 3

ORDINARY INCOME TO SALES AND PERIODS OF PROFIT SQUEEZE

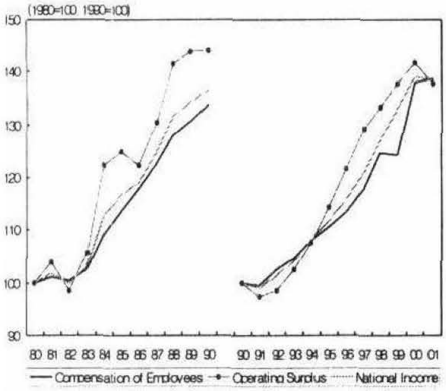
September 1980), which was triggered by the second oil shock. The period from 1988 to 1991 covers the fourth contractionary phase (January 1988-July 1989), which followed a spectacular export boom.[5] The period from 1995 to 1996 overlaps the sixth contractionary phase (March 1996-August 1998), which started when the terms of trade suddenly plummeted.

It is natural that operating surplus of corporate firms declines in cyclical recessions. So the question is how could labor payment have continued to rise in those recessions at about the same rate

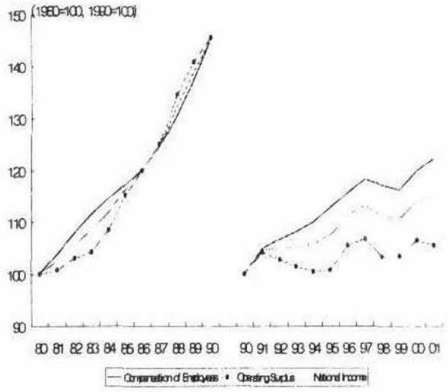
1970.

[5]It is called "three-low boom" meaning international interest rates, oil prices, and the value of domestic currency were low enough to warrant competitiveness of Korean export products.

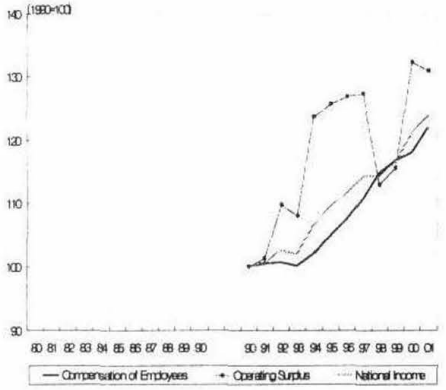
U.S.A.



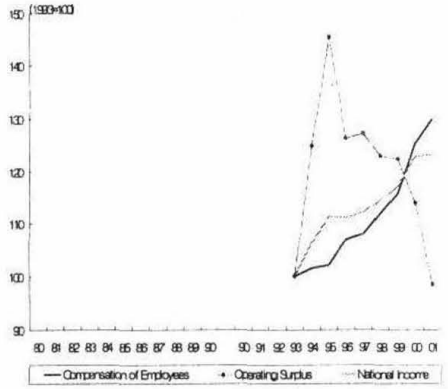
Japan



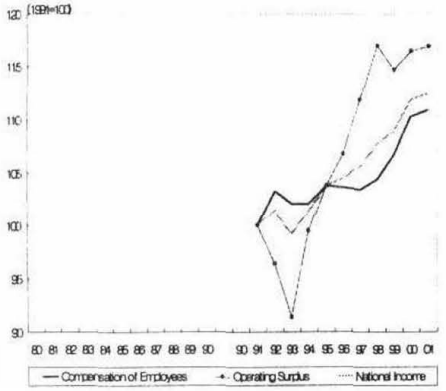
Denmark



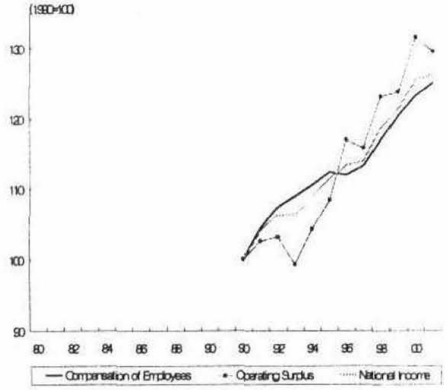
Sweden



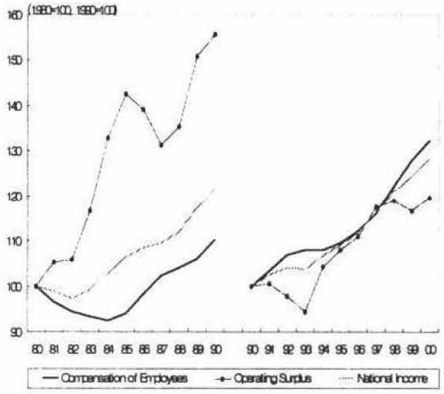
Germany



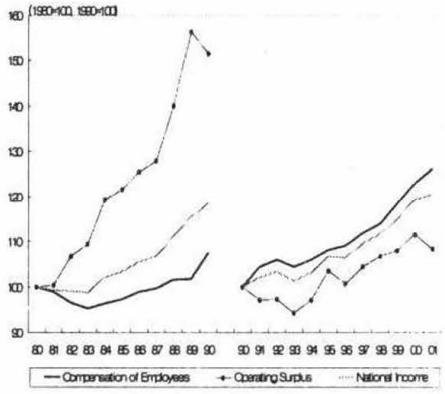
Austria



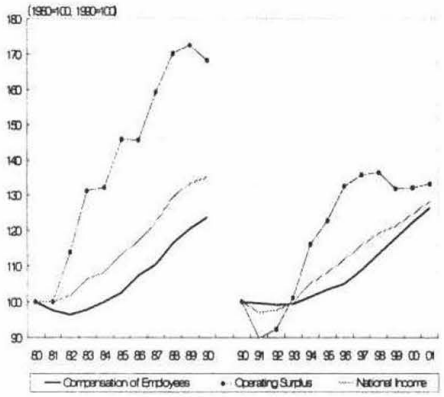
Netherlands



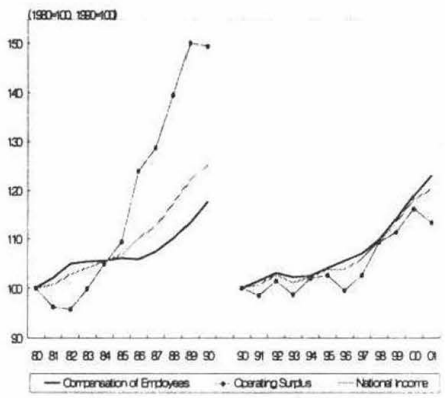
Belgium



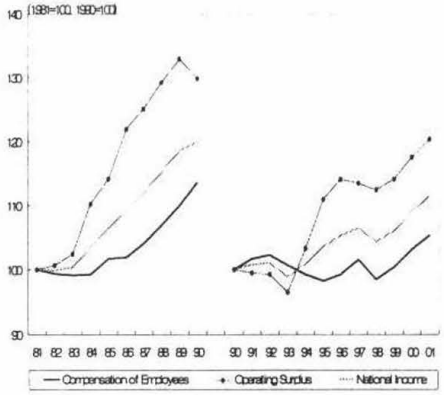
United Kingdom



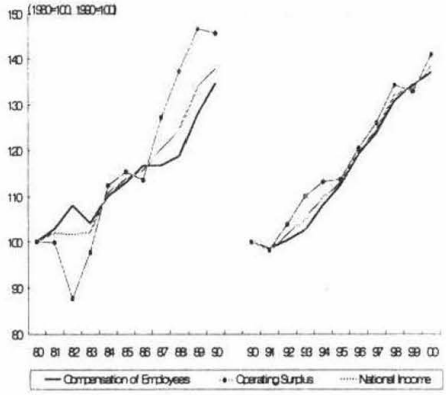
France



Italy



Australia



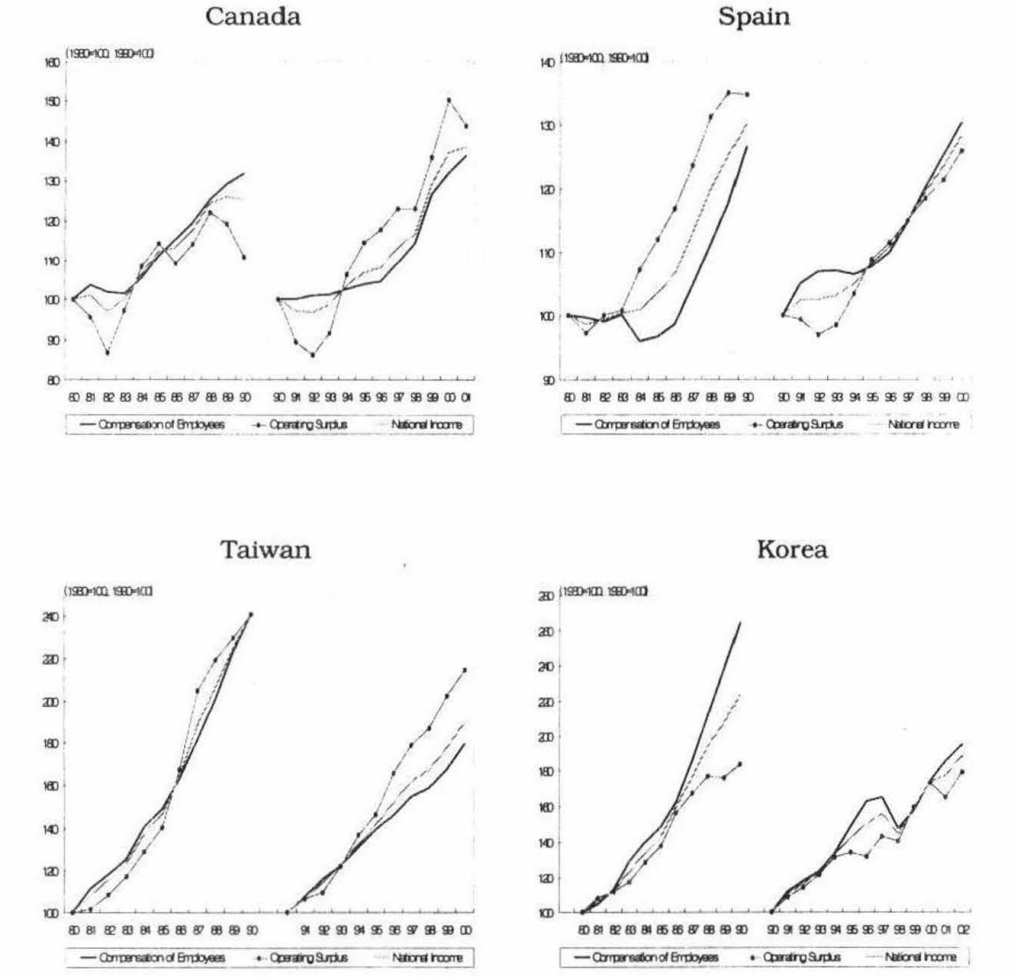


FIGURE 4

PATTERN OF NATIONAL INCOME ALLOCATION IN OTHER COUNTRIES

as during boom years? Another question is how come operating surplus could have never exceeded labor payment for more than twenty years during which the profit squeeze was not observed, except in 1974? When the economy is sluggish, operating surplus is squeezed by recession itself and additionally by steady increase of labor payment. When the economy is in a good shape, operating surplus growth cannot exceed that of labor compensation. As a matter of course, labor compensation has grown up at a faster rate than operating surplus for the last three decades.

Figure 4 shows the pattern of national income allocation of sixteen major industrial countries following the same method used in Figure 2. It turns out that Korea is the only country that has exhibited the singular pattern of disproportionate income allocation. Japan, the Netherlands, Belgium, France and Spain allocated more income to labor compensation in the 1990s, but unlike Korea, their operating surplus in the 1980s had increased as fast as (Japan) or much faster (the Netherlands, Belgium, France and Spain) than their labor compensation.

By allocating more income to the labor sector all the times, the profitability of Korean corporations had been consistently damaged, leading to the accumulation of an enormous volume of corporate debts and non-performing loans.

B. Distorted Price System As the Source of the Mis-Allocation of Income

There must be a strong and deeply entrenched incentive structure which had brought about the singular pattern of income mis-allocation. From a macroeconomic perspective, in Korea, real estate prices, wage rates, interest rates, and the exchange rate comprise the system of core prices (Park and Cho 2002). Prior to the economic crisis, these core prices in Korean economy had been derailed on a large scale from the levels reflective of Korea's economic fundamentals (Cho 1997). This kind of distortion in the price system is responsible for the disproportionate income allocation, or equivalently, the traditional profit squeeze. Households had enjoyed incomes that were artificially high at the cost of corporate profits, while deepening corporate indebtedness. Furthermore, the market forces to correct the inadequacy of the price system had been paralyzed, allowing the distortions to persist until the crisis broke out. Although it is hard to present quantifiable evidences, there are several facts that can be put forth in proof of our arguments.

Among other things, the ever-increasing realestate prices were the primary factor of the distortion of the price system. Higher real-estate prices induced higher rents, higher service costs, higher housing expenses and higher living costs. Since Korean people have a characteristic inclination toward realestate ownership (Kim and Park 2001), higher realestate prices raised target levels of saving

from the so-called 'down-payment motive.' In order to meet the higher target saving levels and the higher living costs, workers had to demand higher nominal wages because household loans were not readily accessible under a strictly regulatory regime. In this way, increases in realestate prices caused real wages to grow faster than the labor productivity.

On the other hand, corporations were preoccupied with expanding sales and were not very concerned about profitability. They were able to obtain loans from financial institutions only if they had sufficient realestate assets as collateral. Owing to the lack of global standards of operation in the capital market and the unreliability of corporate financial statements, even troubled firms were not discriminated in the capital market and their executive officers didn't have to worry about being ousted. Regardless of the profitability of projects, investment for expanding the size of the company continued unabated, leading to a chronic and excessive demand for labor and funds. The natural result of this was that real wages increased faster than labor productivity and interest rates were higher than the rate of return on investment.

Korean economy was, after all, a risk-free economy. Until the outbreak of the economic crisis, for example, financial companies preferred corporate bonds to the government bonds because they could not find any practical reason to hold safe assets. The ever-increasing realestate prices were the single most important buttress propping up the risk-free economy. Stripped of cosmetics, the Korean economy prior to the economic crisis was a bubble economy in the sense that it could operate only if realestate prices continued to rise.

Realestate prices suddenly stopped rising and began to decline moderately in the second half of 1991 (Figure 5). The most important engine of the bubble economy was out of service. Firms could no longer expect to see their operating losses offset by increases in value of their assets. Nevertheless, they continued to expand as a matter of common practice from behavioral inertia. Their excessive demand for labor and funds remained unchanged, maintaining rent, real wage, interest rate at excessively high levels until the end of 1997.

Along with the cease of the realestate bubble expansion, fundamental factors of Korean economy such as the manner of resource allocation, the pattern of consumers' consumption-leisure

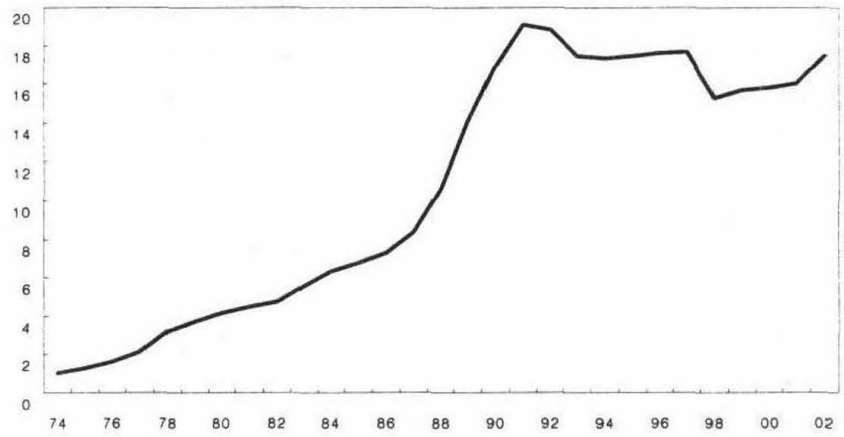


FIGURE 5
ANNUAL LAND PRICE INDEX

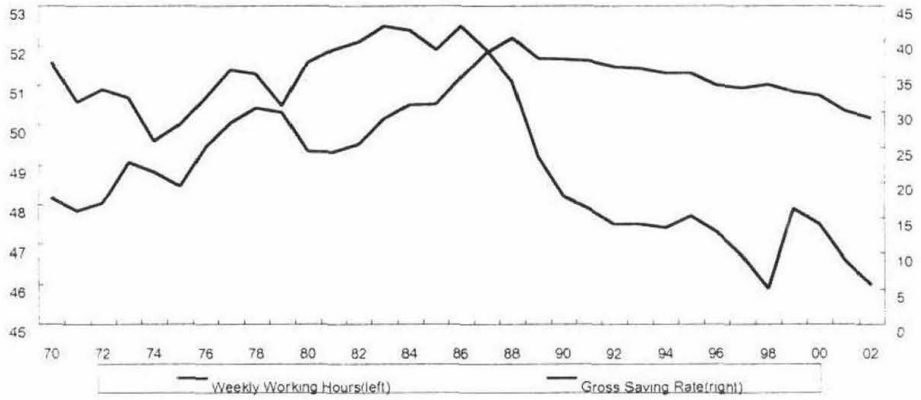


FIGURE 6
GROSS SAVING RATE AND WEEKLY WORKING HOURS

choice, the composition of household expenditure, and birth rate etc., went through important structural changes in the early 1990s (Figure 6). Looking back, with these dramatic changes in economic fundamentals, the early 1990s was the era in which Korea should have started extensive structural reforms in search of a new growth strategy. But it was also at this time that the massive volume of foreign capital started to flow into Asian countries, including Korea,

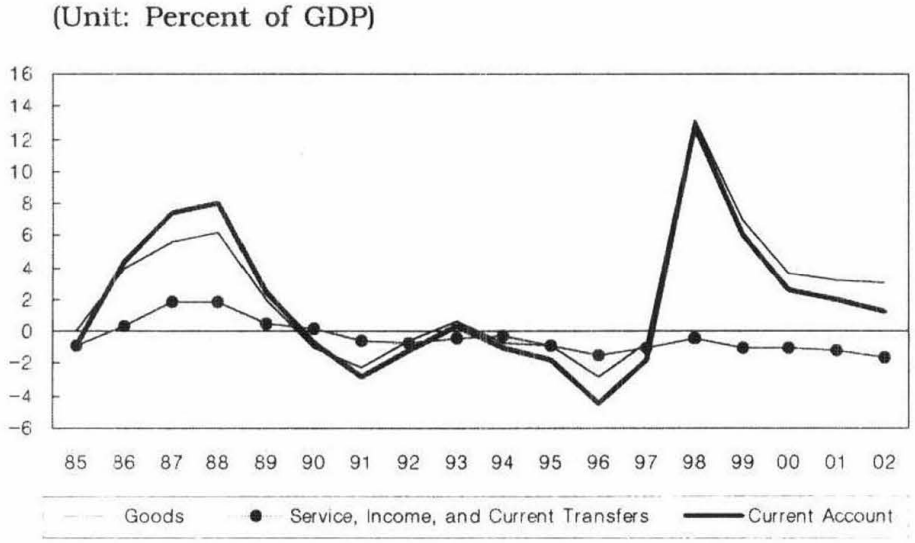


FIGURE 7
BALANCE OF PAYMENT

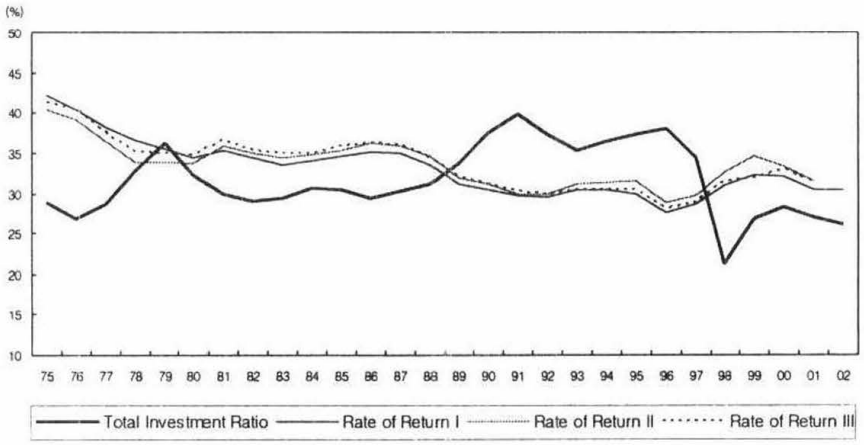


FIGURE 8
INVESTMENT RATIO AND RATE OF RETURN TO INVESTMENT

giving rise to an over-confidence in Korean economy and over-valuation of the exchange rate. Although they became aware of the rising competitive threat from China and Southeast Asian countries, instead of searching desperately for the ways to upgrade national competitiveness, the Korean people whiled away their time in

euphoria at their recent economic achievements.

Meanwhile, distortions in price system became more serious and symptoms of macroeconomic disequilibrium began to stand out. The acceleration in the current account deficit in 1996 is one of salient manifestation (see Figure 7). Another important one was the over-investment that emerged in the late 1980s. Figure 8 presents Korea's total investment ratio and three different estimates of the rate of return to total investment (Park 2003). It can be seen that Korean economy had been loosing dynamic efficiency since 1989, meaning that the return to investment was less than the investment expenditure. The excessive investment lasted for nine years without any interruption and was only put to an end by the economic crisis.

III. Distortions in the Price System Before and After the Economic Reforms

Prior to the currency crisis, every one of the core prices, which are realestate prices, wage rate, interest rate, and exchange rate, had deviated greatly from their equilibrium levels. After the economic crisis, the exchange rate has returned successfully to a realistic level. In our judgement, the single most important factor of the rapid and solid recovery since 1999 was the sizable depreciation in the won per dollar exchange rate. The cut in interest rates also contributed to the rapid macroeconomic recovery and financial and corporate sector reforms were indispensible for the adjustment in the interest rates. But in recent years the interest rates were lowered too far and have been held down for too long, disturbing the adjustment in realestate prices. A new realestate bubble emerged in late 2001 and then expanded vigorously until recently. Finally, notwithstanding the labor market reforms, we could not find any solid evidence of the adjustment in wage rate. Wage rigidity in the labor market became aggravated in the post-crisis years.

A. Realestate Prices Before and After the Economic Reforms

A change in realestate prices effectively redistributes wealth between generations and social classes, either directly or indirectly.

TABLE 1
RATIO OF TOTAL LAND VALUE TO NOMINAL GDP

	Korea	Japan	U.K.	U.S.A.
1985	-	2.9	1.2	1.1
1986	-	3.7	1.3	1.0
1987	-	4.7	1.5	1.0
1988	-	4.8	1.9	1.0
1989	9.03	5.3	1.9	1.0
1990	9.03	5.4	1.6	0.9
1991	8.41	4.7	1.5	0.8
1992	7.32	4.1	1.3	0.7
1993	6.00	3.9	1.3	0.7
1994	5.07	3.8	1.1	0.6
1995	4.37	3.7	1.1	0.6
1996	3.97	-	-	-
1997	3.68	-	-	-
1998	3.24	-	-	-
1999	3.07	-	-	-

Sources: Data for Japan, U.K. and U.S.A.; Korea Appraisal Board (1998), Data for Korea; Kim and Park (2001)

In a country where the pension system is not fully developed, increases in realestate prices could contribute to social stability by securing for home owners and landlords adequate wealth to see them through their retirement years. However, higher realestate prices can also impose a huge potential economic burden on the young generation.

At the peak of the realestate bubble in the early 1990s, total land value was slightly more than nine times nominal GDP (see Table 1). For a comparison, at the peak of realestate bubble in 1990, the ratio of total land value to nominal GDP in Japan was 'just' 5.4. Even Japan, then the foremost leader in manufacturing productivity in the world, could not endure that much high land prices and the bubble went bust! This tells us that Korean realestate bubble back in the early 1990s was truly monstrous.[6]

[6]Readers should be reminded that the land price of Korea in Table 1 was

TABLE 2

OFFICE RENTS AND OCCUPANCY COSTS

Market	rent[1] (2003.1)	ranking (2003.1)	ranking (2002.7)	ranking (2002.1)	ranking (2001.7)	ranking (2001.1)	ranking (2000.7)	ranking (2000.1)
London (West End)	150.86	1	1	1	1	1	3	2
Tokyo (Inner Central)	118.04	2	2	2	2	2	1	1
London (City)	112.91	3	4	3	3	4	4	4
Tokyo (Outer Central)	92.74	4	3	4	4	3	2	3
Paris, France	81.91	5	5	5	6	8	8	9
Moscow, Russia	64.49	6	6	7	11	12	11	7
Birmingham, England	63.26	7	12	16	16	19	17	13
Edinburgh, Scotland	62.86	8	9	10	15	13	10	11
Dublin, Ireland	60.23	9	11	13	17	18	19	17
Manchester, England	60.06	10	14	15	19	16	18	14
Zurich, Switzerland	59.14	11	15	14	n.a.	n.a.	n.a.	21
Midtown Manhattan	57.13	12	8	8	10	12	12	12
Frankfurt, Germany	57.07	13	13	9	12	14	14	10
Glasgow, Scotland	56.05	14	16	18	20	21	n.a.	15
Mumbai(Bombay)	53.04	15	10	11	7	6	6	5
Geneva, Switzerland	52.49	16	20	24	31	n.a.	n.a.	25
Hong Kong	52.38	17	7	6	5	5	5	6
Milan, Italy	51.74	18	22	36	40	43	n.a.	37
Seoul, South Korea	***51.56***	***19***	***19***	***20***	***13***	***11***	***7***	***8***
Madrid, Spain	51.13	20	17	17	18	25	n.a.	35
Luxembourg City, Luxembourg	49.57	21	24	30	34	38	34	26

Source: CB Richard Ellis Global Research and Consulting, *Global Market Rents* (Various Issues).

Note: 1) U.S. Dollars, Per Square Feet, Annual.

aggregated according to publicly appraised land prices which were not higher than 60-70 percent of market prices in 1990s. Allowing for the underestimation in official appraisal, the total land value, evaluated at market prices, would have amounted to far more than 10 times of nominal GDP.

The ratio of total land value to nominal GDP started to decline in 1991 both in Japan (Okina *et al.* 2001) and in Korea. In Korea, the ratio had fallen back to 3.68 by 1997 from 9.03 in 1990. During this time the nominal GDP increased 2.5 times, while the total land value remained almost unchanged. In Japan, the ratio fell to 3.7 by 1995 from 5.4 in 1990 as total land value dropped by 22.8 percent while the nominal GDP increased by 12.6 percent. In light of the fact that Japan is still suffering from the aftermath of the bust, it may seem at first that Korea's adjustment to its much more severe realestate bubble had been much smoother and more successful than that of Japan. In Korea, after all, the bubble did not bust.

The harmful side-effects of the realestate bubble, however, did not magically disappear in Korea. Instead, the bubble exercised a very unfavorable influence on the Korean economy in a roundabout way. By the mid-1990s, the annual interest obligation of leasing a house in metropolitan areas was much higher than half of the industry-wide average annual salary. In an economy characterized by such exorbitant housing expenses, workers will naturally demand higher labor payment. The realestate bubble also led to extremely high office rents and occupancy costs. Immediately before the currency crisis, Seoul was 4th or 5th most expensive city in the world with regard to renting office space (see Table 2). Furthermore, the high land prices discouraged the government from purchasing land for development of the social infrastructure, and as a result, transportation and delivery costs and warehouse charges *etc.* rose sharply.

During the economic crisis, realestate prices went down for the first time in modern Korea. The economic contraction was so much appalling that the government did everything in its power to prevent further decline in realestate prices, fearing that a vicious circle of negative growth and declining realestate prices would be set in motion. A number of revisions to the tax laws and to rules of policy administration were made in order to encourage investments in realestate assets and to promote construction of residential buildings. The problem was that these policy measures were not withdrawn even after the economy had achieved a remarkable recovery in 1999 and 2000. Real economic growth was 10.9 percent and 9.3 percent during these two years, respectively. Policy measures which served to sustain realestate prices were maintained until the second half of 2002.

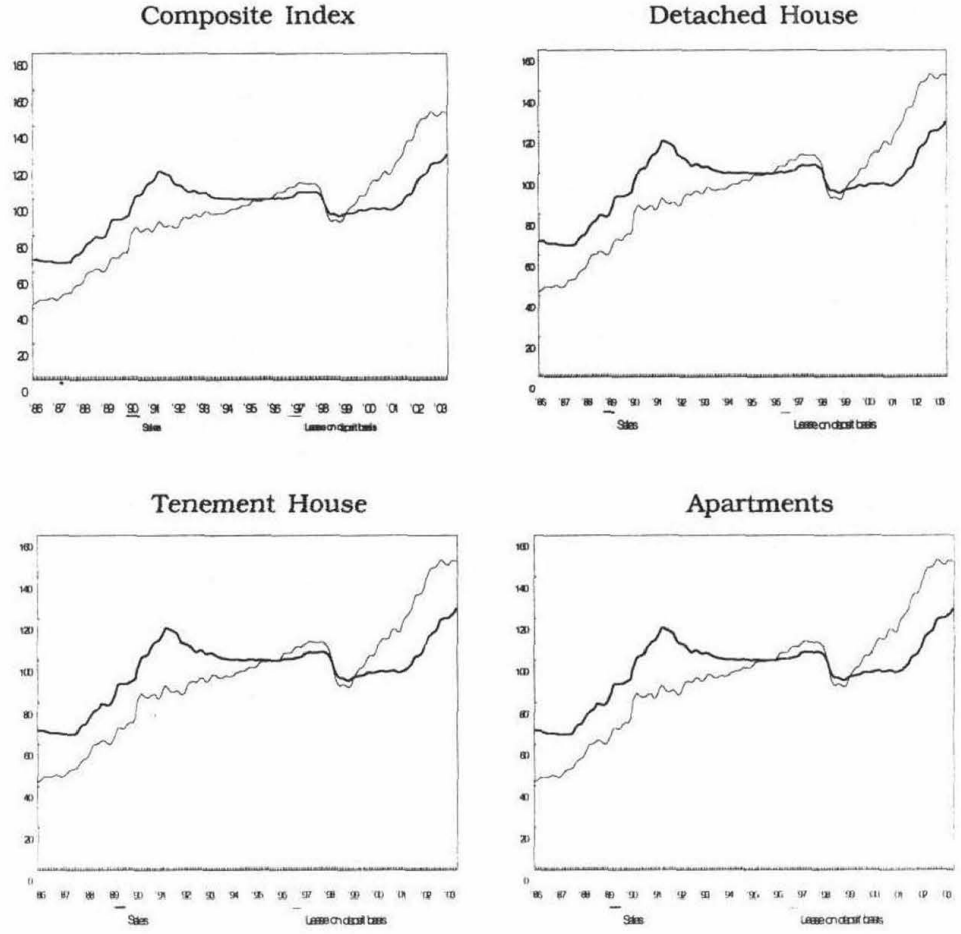


FIGURE 9
HOUSING PRICE INDICES (1995 = 100.0)

Meanwhile, interest rates began to decline significantly in the second half of 2001, triggering a lending boom. More than half of household lending reportedly made its way into the realestate market, awakening the realestate bubble which had been dormant for about a decade (see Figure 9). This time, the new realestate bubble was inflated by housing prices rather than by land prices and rent increased a lot faster than building prices (see Figure 9 and Table 3).

Although the rate of increase in housing prices has moderated recently, housing prices are still unreasonably high; high enough to

TABLE 3

INCREASES OF HOUSING PRICES BY PERIOD

	1987.8-1991.4		1998.11-2002.7		Comparison	
	Sale (A)	Lease on deposit (B)	Sale (C)	Lease on deposit (D)	Sale (C/A)	Lease on deposit (D/B)
Detached house	55.9%	70.6%	5.7%	32.5%	0.10	0.46
Tenement house	86.2%	94.3%	15.4%	60.6%	0.18	0.64
Apartments	125.2%	101.0%	46.1%	91.5%	0.37	0.91
Composite index	77.8%	82.0%	27.0%	66.0%	0.35	0.81

trigger, sooner or later, a strong demands for higher wages as we had witnessed in the 1990s. Office buildings are also too much expensive yet. As of March 2003, Seoul was ranked at the 19th most expensive city in the world for renting a square foot of office space, more expensive than Washington D.C., the Silicon Valley in the San Francisco Bay Area, downtown Manhattan, Chicago, Toronto, Taipei, or even Singapore (see Table 2).

The current realestate bubble must have contributed significantly to the economic growth in 2001 and 2002 by encouraging private consumption through the wealth effect. The real growth rate in 2001 and 2002, 3.1 percent and 6.4 percent, respectively, were higher than those of Korea's trading partner countries during the same period with only one exception: China. In the long-run, however, the realestate bubble will not only cause real wage to rise faster than labor productivity, it will also bring about higher rents, higher service costs, higher transportation costs, higher delivery costs and higher warehouse charges, higher housing expenses and higher living costs. All of theses developments will serve to erode corporate surplus as more and more income is allocated outside the corporate sector. That the government failed to prevent the reemergence of the realestate bubble is extremely regrettable because the benefits of structural reform may come to naught in the long-run as a result of it. Without deflating realestate bubble adequately, it would be impossible for Korea to achieve a sustainable economic growth in the future.

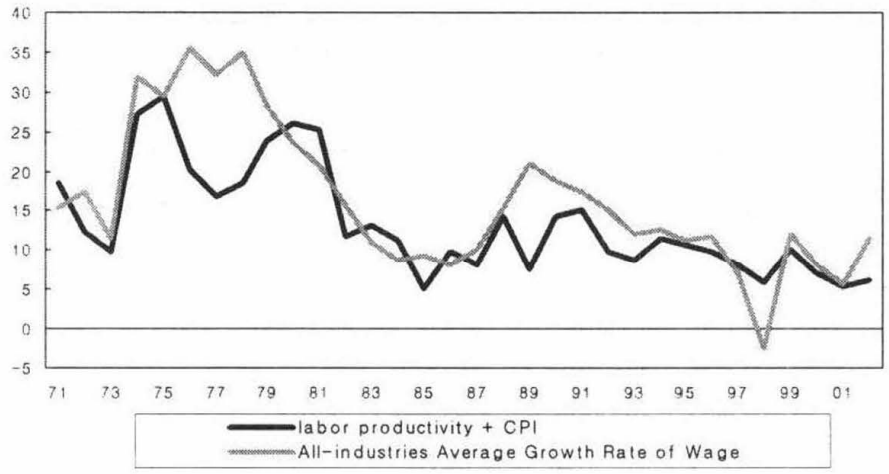


FIGURE 10

RATE OF INCREASE OF NOMINAL WAGE, CPI, AND LABOR PRODUCTIVITY

B. Wage Rates Before and After the Economic Reforms

Since the second oil shock and up until the mid-1980s, the government pursued heavy-handed income policy to curb runaway wage inflation, effectively discouraging wage increases during that time. However, as soon as the oppressive regulations on labor union activities were lifted in late 1987, nominal wage began to increase at an accelerating rate from the fourth quarter of 1987 onwards. During the 10 years from 1987 to 1996, nominal wages consistently rose more rapidly than the sum of CPI and the labor productivity (see Figure 10).

Table 4 compares Korea's per capita gross national income (GNI) and hourly manufacturing wage with those of the U.S., Japan, Germany, the U.K., Hongkong, and Singapore. As the table clearly summarizes, since the late 1980s, the dollar-denominated hourly manufacturing wage in Korea became greater than or equal to those of Hongkong and Singapore, where per capita income was twice as high as that of Korea. A case study points out that in the mid-1990s, the total labor expenses per worker in one of Korea's leading companies in heavy industry sector amounted to 45 thousand dollars a year, which was higher than that of companies producing the same products in the U.S. (Cho 1997).

TABLE 4

GNI AND MANUFACTURING WAGE: KOREA *VS.* FOREIGN COUNTRIES

Period	U.S.A.			Germany			U.K.		
	Wage(A)	GNI(B)	A/B	Wage(A)	GNI(B)	A/B	Wage(A)	GNI(B)	A/B
1980-87	0.15	0.13	1.08	0.20	0.18	1.09	0.25	0.25	0.98
1988-97	0.43	0.30	1.42	0.36	0.32	1.08	0.43	0.43	1.00
1998-2000	0.40	0.24	1.63	0.33	0.30	1.14	0.36	0.31	1.03
Period	Japan			Hong Kong			Singapore		
	Wage(A)	GNI(B)	A/B	Wage(A)	GNI(B)	A/B	Wage(A)	GNI(B)	A/B
1980-87	n.a.	0.18	n.a.	0.82	0.34	2.15	0.77	0.34	1.89
1988-97	0.53	0.24	1.98	1.10	0.44	2.51	0.99	0.45	2.17
1998-2000	0.46	0.23	1.97	0.77	0.34	2.25	0.69	0.35	1.94

As Figure 10 shows, the level of nominal wage declined in 1998 when the Korean economy fell into the severe economic recession. The won-per-dollar exchange rate also jumped up dramatically during the currency crisis. Along with the value of currency, the dollar-denominated nominal wage and national income declined sharply in 1998. Naturally, from 1998 to 2000, Korea's ratio of unit wage per hour to per capita GNI declined relative to Hongkong and Singapore, but the ratio did not change against Japan or the U.K.. In fact, it even rose relative to the U.S. and Germany (see Table 4). This suggests that the high wages which prevailed for 10 years prior to the economic crisis may not have fully corrected during the period of economic reform. For the four consecutive years, from 1999 to 2002, real wages rose faster than labor productivity. Especially, in 2002, the increase in real wages exceeded that of labor productivity by 6.1 percentage points, the widest margin since 1989. Excluding 1989, this was the widest margin in 24 years since 1978 (see Figure 11).

Korea has made serious efforts to make the labor market more flexible. The labor laws were amended and firms were allowed a large scale lay-off as a preventive measure against outright bankruptcy. But, it is hard to find any solid evidence of improvement in labor market flexibility. Traditional wage setting behavior became more rigid after the economic crisis.

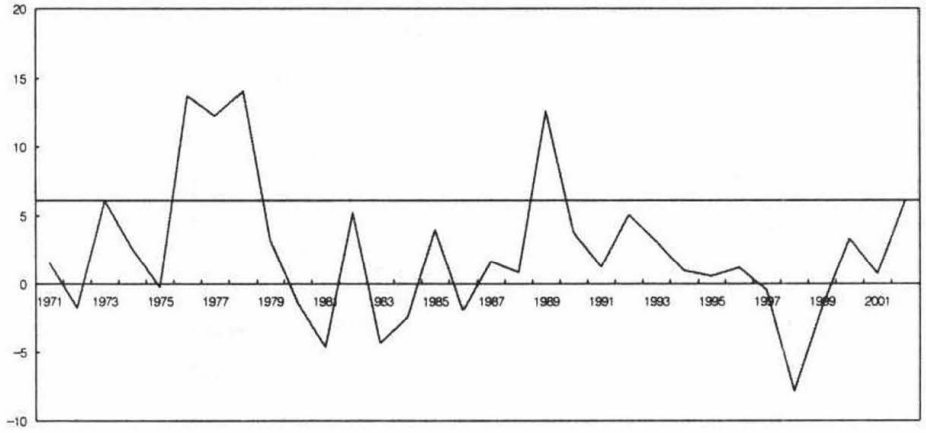


FIGURE 11

REAL WAGE GROWTH RATE NET OF LABOR PRODUCTIVITY GROWTH RATE

The following equation measures the degree to which nominal wage growth rate($\Delta \ln(W_t)$) is affected by the inflation rate($\Delta \ln(P_t)$) and by changes in unemployment($\Delta \ln(U_t)$). The ratio of coefficients in this equation, $-\alpha/\beta$, indicates how much unemployment rate needs to change in response to changes in the inflation rate in order to preserve the nominal wage growth rate (Bell 1986).

$$\Delta \ln(W_t) = \alpha \Delta \ln(P_t) + \beta \Delta \ln(U_t) + e_t$$

If α is estimated to be bigger than β in absolute terms, we can interpret that the nominal wage responds to the inflation rate more sensitively than to changes in unemployment.[7] Equivalently, we can say that the nominal wage setting is more favorable for preserving real income, regardless of changes in labor market situation. Table 5 summarizes estimation results of the wage equation when Korean quarterly data are used.

The table indicates that wage rigidity during the period from the fourth quarter of 1987 to the end of 1993 (see Figure 10) was significantly stronger than in the previous period. From 1994 to the

[7]Theoretically, the coefficient α must be positive and the coefficient β must be negative.

TABLE 5

RESULTS OF WAGE EQUATION ESTIMATION[1]

estimation period	p	u	rigidity parameter	$\Delta \ln(P)$	$\Delta \ln(U)$	rigidity parameter
1980Q1 -87Q3	1.06541 (12.3037)	-0.18938 (2.94177)	5.63	0.63082 (2.29419)	-0.10153 (3.51186)	6.21
1987Q4 -93Q4	2.35674 (16.5270)	0.02465 (0.31497)	n.a.[2]	1.33892 (1.96026)	-0.15031 (2.56542)	8.91
1994Q1 -97Q4	2.08500 (13.5273)	-0.05035 (1.25908)	4.14	0.85284 (0.88653)	-0.15310 (2.09426)	5.57
1998Q1 -03Q1	1.97376 (24.3262)	-0.131728 (4.80659)	14.98	1.93735 (40.9243)	-0.17085 (5.93642)	11.34

Notes: 1) Rate of increases used on the right hand panel are compared with previous quarter, on the left hand panel, quarter on quarter. t-values are in parentheses

2) During this period, coefficient of the rate of increase of unemployment (u) was estimated to have a wrong sign without any statistical significance.

FIGURE 12

GROWTH RATE OF NI, OPERATING SURPLUS, LABOR COMPENSATION

end of 1997, wage rigidity was moderated somewhat, but it became aggravated dramatically since 1998. The wage setting behavior which prevailed during the period of realestate bubble returned and

was actually more severe, notwithstanding the economic crisis and the labor market reforms. The cyclical recession in 2001 was such a relentless blow to the business sector that operating surplus declined as much as it did in 1998, the crisis year. But labor compensation continued to grow vigorously (see Figure 12), so the corporate sector faced yet another profit squeeze (see Figure 2).

C. Interest Rates Before and After the Economic Reforms

In Korea, domestic interest rates had been much higher through most of its recent history than international rates (see Figure 13). The total volume of corporate debt was also very large, and therefore, corporate financing expenses were inordinate compared with sales (see Figure 14). Although the ratio of operating income to total assets was reasonably high (see Figure 15), ordinary incomes after financial expenses were megere (compare Figure 16 with Figure 15). This implies that a dominant proportion of operating income was going towards financial expenses. Figure 17 and Figure 18 show operating income to sales and ordinary income to sales of manufacturing industries in the U.S., Japan, Taiwan, and Korea. Figure 19 and Figure 20 compare those countries' ratios of operating income and ordinary income to total assets in their manufacturing sectors. We can see that Korea's operating income relative to sales and total assets was the highest but that the country's ordinary income relative to sales and total assets had been the lowest.

Entering the second half of 2000, domestic economy fell into another recession as a result of the world-wide slump in the information and technology industry. Export growth rate fell down lower than −20 percent for July and August in 2001, and the recession was exacerbated by the September 11, 2001 terrorist attack in the U.S. As a counter-cyclical measure, the Bank of Korea lowered the target call rate on a number of occasions, bringing it down from 5.25 percent in January 2001 down to 4.0 percent in September 2001 (see Figure 21). When household lending boom (see Figure 22) became conspicuous and realestate bubble was vigorously expanding, the Bank of Korea raised the call rate by 0.25 percentage points in early May in 2002. Since then, the call rate had been maintained at 4.25 percent for the following twelve months during which household debt mounted to an

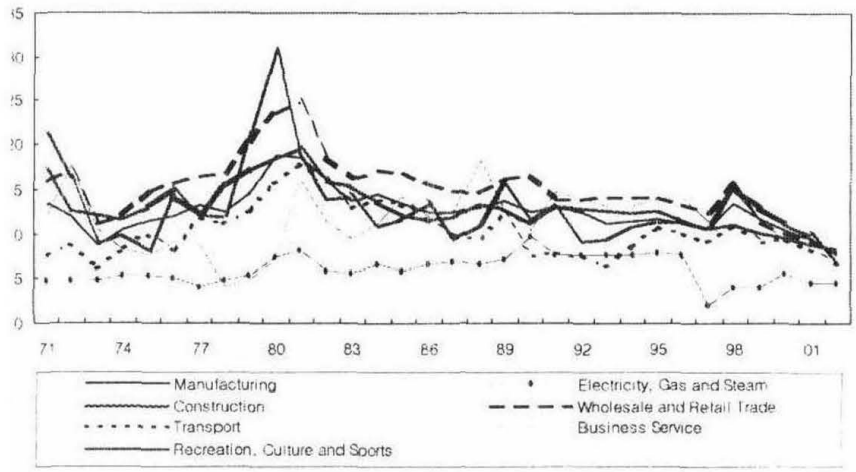


FIGURE 13

INTEREST EXPENSES TO BORROWINGS AND BONDS BY INDUSTRY

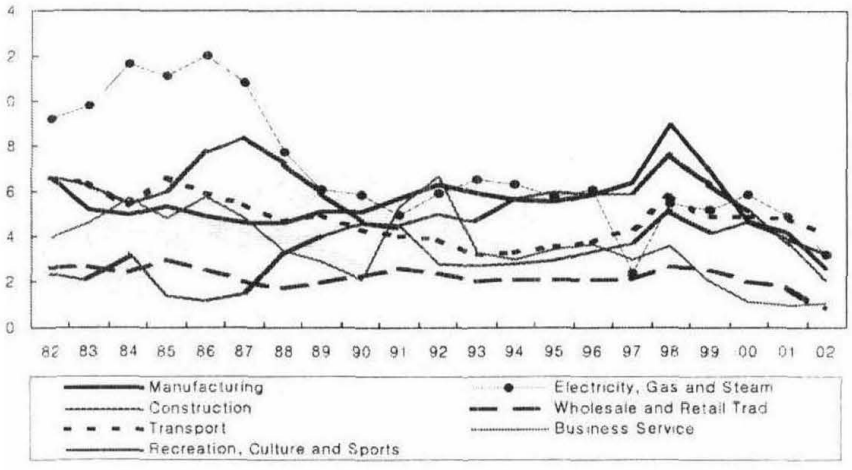


FIGURE 14

FINANCIAL EXPENSES TO SALES BY INDUSTRY

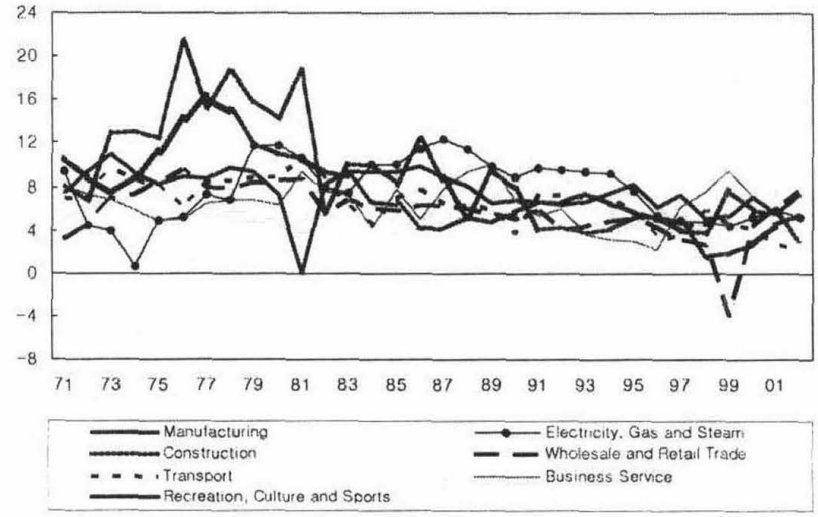


FIGURE 15
OPERATING INCOME TO TOTAL ASSETS BY INDUSTRY

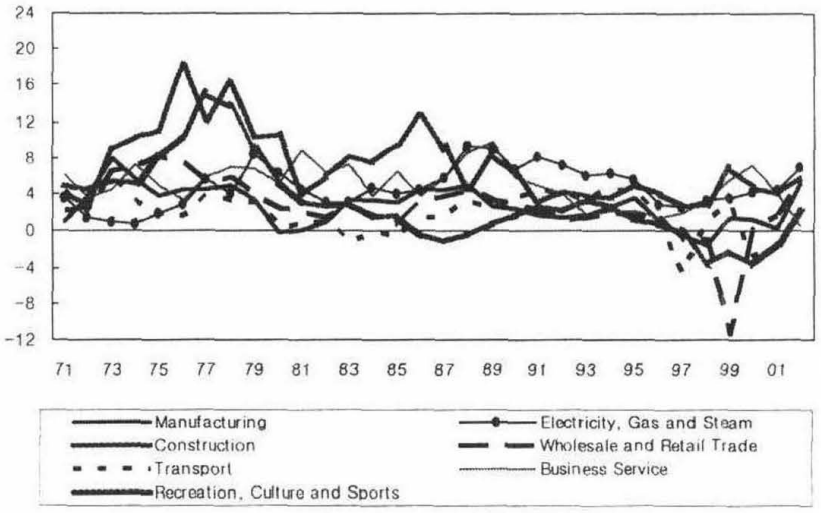


FIGURE 16
ORDINARY INCOME TO TOTAL ASSETS BY INDUSTRY

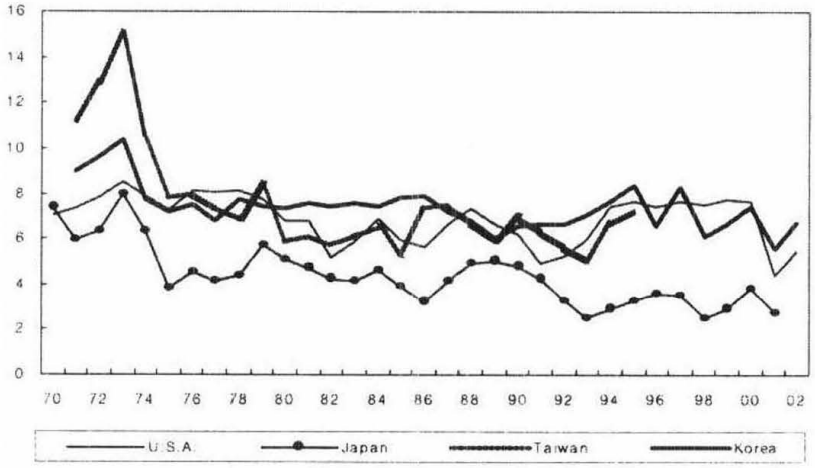


FIGURE 17
OPERATING INCOME TO SALES IN MANUFACTURING INDUSTRY

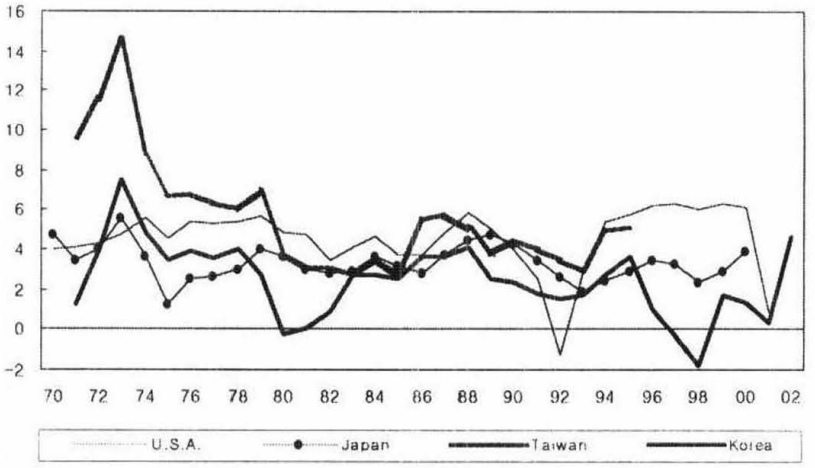


FIGURE 18
ORDINARY INCOME TO SALES IN MANUFACTURING INDUSTRY

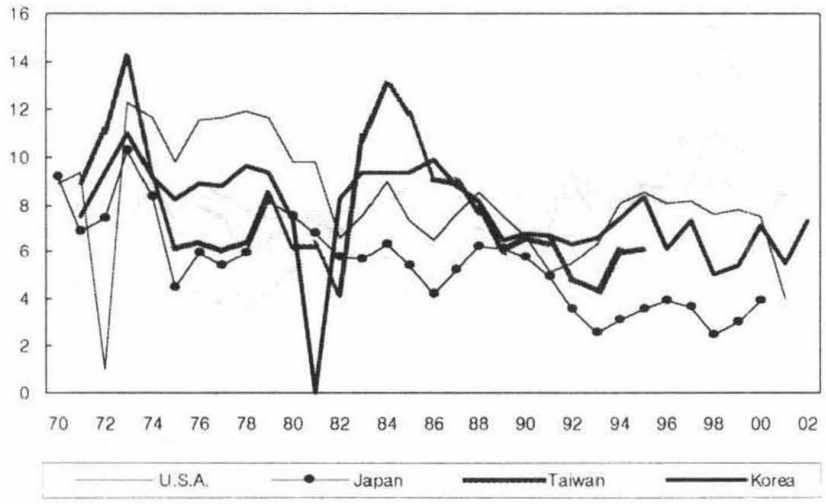


FIGURE 19

OPERATING INCOME TO TOTAL ASSETS IN MANUFACTURING

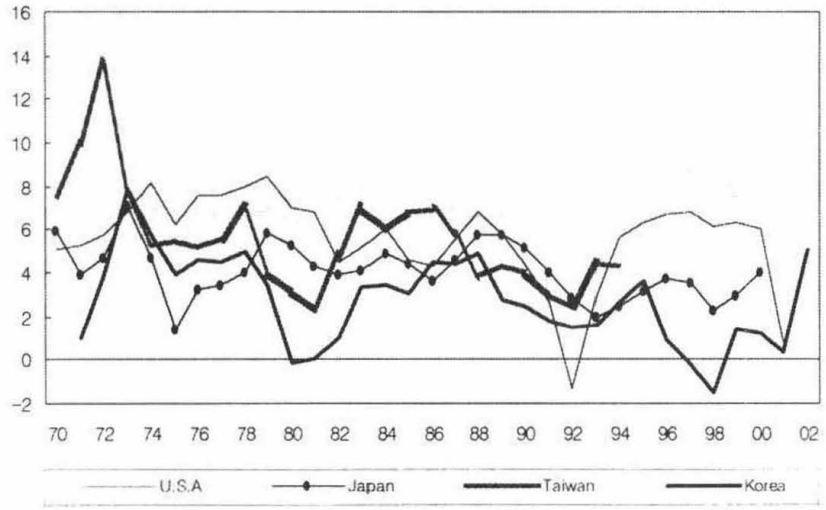


FIGURE 20

ORDINARY INCOME TO TOTAL ASSETS IN MANUFACTURING

enormous size and realestate bubble inflated by overflowing short-term funds, almost risking social solidarity.[8]

The Bank of Korea's decision to maintain the call rate at such a low level was hardly persuasive because the real economic growth rate in 2002 recorded a solid 6.3 percent. In January 2003, another recession arrived and the Bank of Korea lowered the target call rate twice in May and July to 3.75 percent. Short-term and long-term interest rates followed the downward path of the call rate (see Figure 21 and Figure 23).

As Figure 13 displays, interest expenses of corporations also continued to decline until recently. Since the economic crisis, corporations were forced to reduce debt level and recently the total debt ratio of the corporate sector has recently fallen to roughly the same level as in the U.S. As the debt ratio declines, and also reinforced by declining interest rates, the ratio of ordinary income to sales rose to its highest in 2002. Comparing Figure 18 with Figure 17, we can see that the ratios of ordinary income to sales and to total assets dramatically improved in 2002, while the ratios of operating income to sales and to total assets did not exhibit any significant improvement from the previous year. The difference is, of course, due to the dramatic reduction in non-operating expenses, the bulk of which were obviously interest expenses.

While the government largely failed to control real estate prices and wages in recent years, it seems to have accomplished lowering interest rates very successively. However, the rates have been lowered too far and have been held down for too long ruining the task of controlling realestate prices and wage rates. Interest rates are so low that they have actually helped fuel the rise in real estate prices and wages. Table 6 estimates the simplest form of causality from interest rates to real estate prices. It turns out that decreases in interest rates accelerated the rise in housing prices from July 1999 to April 2003, the period when the current

[8]In late 1980s, when the realestate bubble was expanding violently, the government legislated a new tax law to restrict property right on land and residency buildings depending on type of use, location, and size. Criticism burst out that the new law did not fit with the principle of capitalistic constitution of Korea. The government, however, enforced the law arguing that it was to be deemed as a cost to stabilize and maintain democratic capitalistic society. The constitutional court of Korea judged in late 1990s that the law does not accord with the constitution.

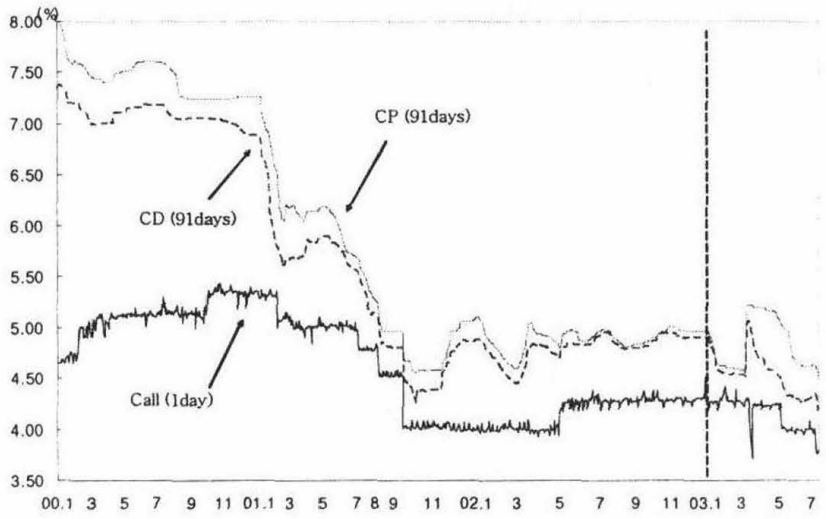


FIGURE 21
SHORT-TERM INTEREST RATES

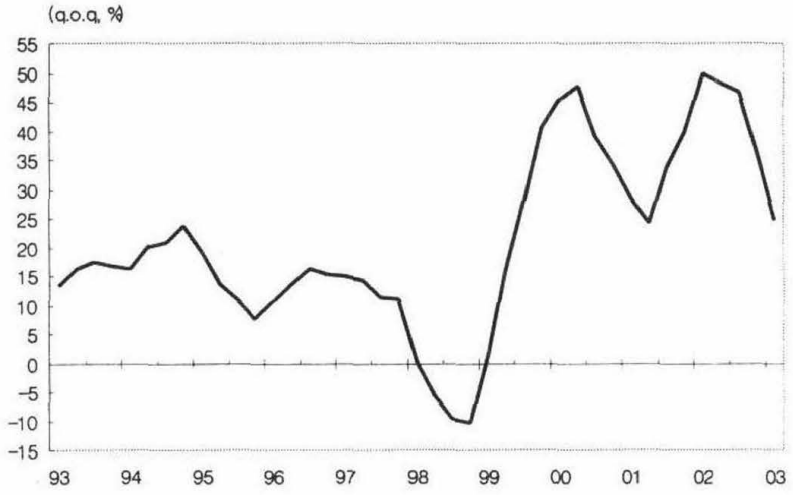


FIGURE 22
REAL GROWTH RATE OF HOUSEHOLD LENDING (BANKING SECTOR)

TABLE 6

EFFECT OF INTEREST RATE ON HOUSING PRICE INDICES[1)2)3)]

Period	β_1	γ_1	β_2	γ_2	β_3	γ_3
1999:07-2003:04	0.841 (0.000)	-0.295 (0.037)	0.846 (0.000)	-0.169 (0.144)	0.839 (0.000)	-0.290 (0.040)
2001:07-2003:04	0.836 (0.000)	-0.751 (0.027)	0.854 (0.000)	-0.545 (0.044)	0.840 (0.000)	-0.831 (0.016)
Period	ζ_1	η_1	ζ_2	η_2	ζ_3	η_3
1999:07-2003:04	0.814 (0.000)	-0.450 (0.032)	0.817 (0.000)	-0.246 (0.1551)	0.813 (0.000)	-0.459 (0.029)
2001:07-2003:04	0.799 (0.000)	-1.041 (0.043)	0.813 (0.000)	-0.734 (0.075)	0.802 (0.000)	-1.175 (0.025)

Notes: 1) $Total_t = \beta_1 Total_{t-1} + \gamma_1 \Delta DR_t$, $Total_t = \beta_2 Total_{t-1} + \gamma_2 \Delta CBY_t$, $Total_t = \beta_3 Total_{t-1} + \gamma_3 \Delta LR_t$, $Apt_t = \zeta_1 Apt_{t-1} + \eta_1 \Delta DR_t$, $Apt_t = \zeta_2 Apt_{t-1} + \eta_2 \Delta CBY_t$, $Apt_t = \zeta_3 Apt_{t-1} + \eta_3 \Delta LR_t$.

2) Total denotes all-city composite index (see Figure 9), Apt denotes all-city apartment index, *DR* is the weighted average of deposit rates at commercial banks, *CBY* is three year corporate bond yield, and *LR* denotes the weighted average of loan rates at commercial banks.

3) Numbers are estimated values of coefficients and p-value of each parameters are in parenthesis.

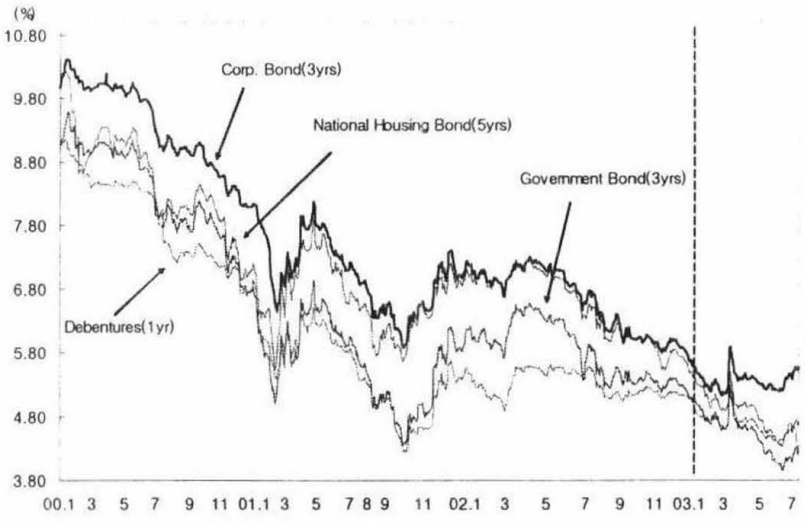


FIGURE 23

LONG-TERM INTEREST RATES

realestate bubble emerged and expanded (see Figure 10). If we restrict the estimation period to the shorter time interval during which interest rates fell sharply, *i.e.*, from July 2001 to April 2003, the coefficients of interest rates in the causality equation are estimated to be larger in absolute terms and to be more statistically significant.

Interest rates in Korea, prior to the economic crisis, were too high. A sizable decline in interest rates was required to improve the profitability of the corporate sector. Corporate sector reforms forced business firms to begin paying down their enormous debts and helped lower the market interest rates by easing the traditional excessive demand for loans and bonds.[9]

An effective macroeconomic policy approach to lowering nominal interest rates would have been lowering the inflation rate. However, since the second half of 2001 onwards, the decline in interest rates was mainly driven by the declining target call rate. To be sure, lower interest rates were called for in 2001, as one of macroeconomic stabilization policy measures. The problem was that the call rate was maintained at such a low level throughout 2002, when the real growth rate rose to 6.4 percent from 3.1 percent the previous year.

Meanwhile, the Bank of Korea did not give any reliable signal that the interest rate could be raised some time in the future, and consumers and investors felt assured of their expectations that interest rates would remain low for a long period of time. This led to an explosive increase in demand for consumer loans, and financial institutions extended loans to households very aggressively because they were locked in overheated competition to preserve their shares of the consumer loan market. What is more, the financial supervision agency did not apply rigorous standards of financial soundness to the financial institutions until the end of 2002 because it implicitly cooperated with the government in stimulating the economy as much as possible. As a natural consequence, household lending increased at an alarming rate (see

[9]Moreover, as the task of fiscal consolidation was accomplished well ahead of schedule, the consolidated central government balance turned to a surplus of 1.08 percent of nominal GDP in 2000, from a deficit of 4.2 percent in 1998 and a deficit of 2.7 percent of GDP in 1999. Consequently, the supply of government bonds shrank sharply in 2001, contributing to lowering long-term interest rates.

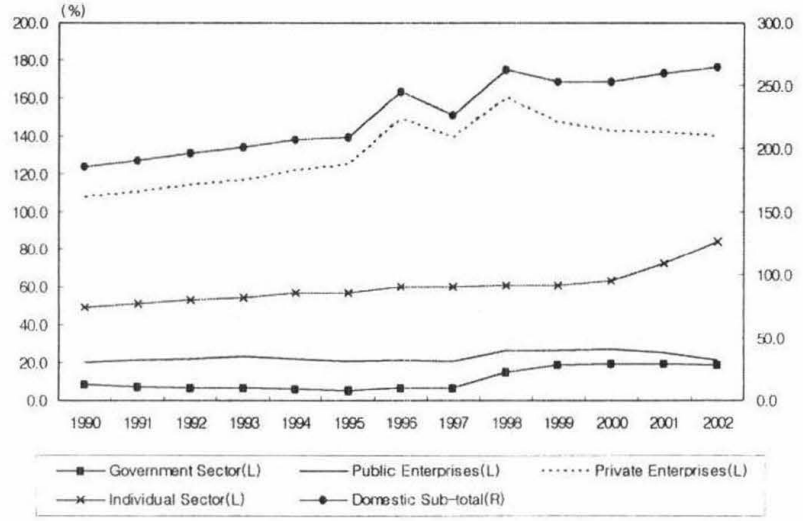


FIGURE 24
FINANCIAL DEBT/GDP BY SECTOR(FLOW OF FUNDS)

Figure 22).

Along with the explosive increase in household lending, the composition of sectoral debt has changed significantly. Figure 24 displays the total and types of financial debt relative to nominal GDP since the 1990s. From 1998 to 2002, the ratio of total domestic debt to nominal GDP rose by 2.0 percentage points. The government debt rose 4.0 percentage points because the central government ran sizable budget deficits in the several years following the economic crisis. Owing to the corporate sector reforms, corporate debt declined by a remarkable 19.8 percentage points of nominal GDP. The debt-to-GDP ratio of public enterprises declined by 5.2 percentage points during the last five years, 3.6 percentage points of which occurred in 2002. Financial debt of private individuals, however, rose by tremendous 23.1 percentage points of GDP, 20.4 percentage points of which occurred during the last two years, 2001 and 2002. While household lending increased at an alarming rate, a significant proportion of the loans was reportedly extended without rigorous credit screening. The number of credit deliquencies rose to 2.6 million by the end of 2002, and then to 3.2 million by the end of May 2003.

D. Exchange Rate Before and After the Economic Reforms

One of the most important factors which forced the Korean economy into the currency crisis was the shortage of foreign reserves. Prior to the currency crisis, there had been a current account deficit for many consecutive years, draining the stock of foreign reserves (see Figure 7). At the beginning of 1997, foreign reserves totaled about 30 billion dollars, which could afford commodity imports for only 2 months and 6 days.[10] The overvalued exchange rate was the key cause of the chronic balance of payments deficit, although this point remains controversial in the academic arena.

The Japanese yen depreciated by about 40 percent from the second quarter of 1995 to the third quarter of 1997. During the same period, the Korean Won depreciated by only 18 percent, and, in terms of the real effective exchange rate, it appreciated by 8 to 9 percent (see Figure 25). Both the Chinese government's massive one-time 50 percent devaluation of the yuan in the first quarter of 1994 and the energetical increase of Chinese share in Korea's trade volume in the 1990s should have exercised a significant influence in this appreciation.

It should be noted, however, that the overvaluation of the Korean won was not the only factor which can account for the current account deficit in the mid-1990s. The deficit can also be attributable to a huge deterioration in the terms of trade which occurred abruptly in 1996. The terms of trade fell by 4.6 percent in the first quarter of 1996, and then by 12.1 percent in the second half, y.o.y. (see Figure 26). In the mid-1990s, Korea's five leading export products (semiconductors, iron and steel, petrochemicals, automobiles, and ships) accounted for more than half of Korea's total exports. And the international prices for all of these five types of products dropped simultaneously in 1996. The decline in prices for semiconductors alone caused a staggering 10-billion-dollar decline in exports, which amounted to 44 percent of the total current account deficit in 1996.

Back in the mid-1990s, the Korean exchange market was not fully opened yet, so it was difficult to determine the correct relative value of the Korean currency. Accordingly, the exchange rate could

[10]Foreign reserve at the end of 2002 can afford imports for 9 months and 18 days.

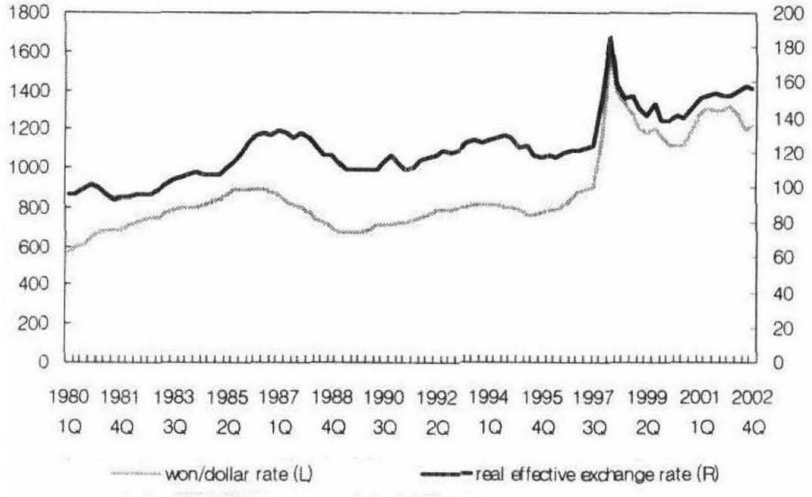


FIGURE 25

NOMINAL AND REAL EFFECTIVE EXCHANGE RATE OF KOREA

(unit: %, q.o.q.)

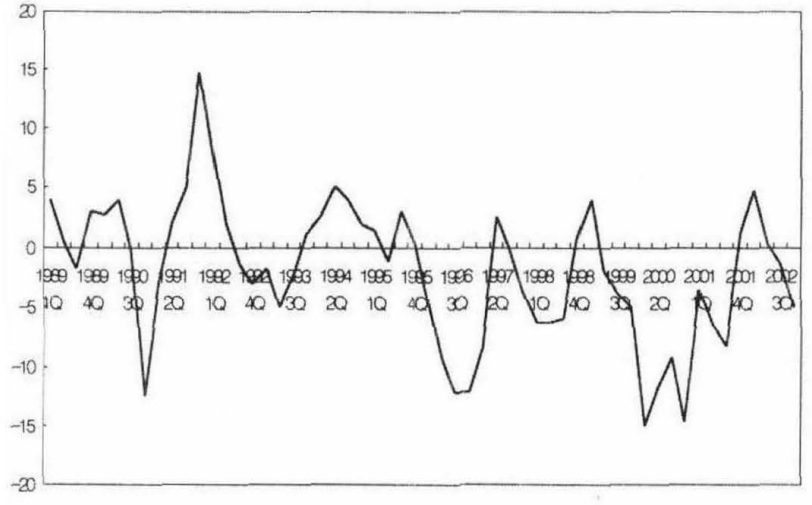


FIGURE 26

RATE OF CHANGE IN THE TERMS OF TRADE (COMMODITIES)

not have adjusted flexibly enough in reaction to the abrupt and dramatic changes in the international prices of export products and in trade partner countries' exchange rates.

Since 1999, after the over-shooting in exchange rate subsided, the Korean won has fluctuated at an average rate of about 1,200 won per dollar. At the extremes, it has touched nearly 1,100 and 1,350 (see Figure 25). An exchange rate of 1,200 won per dollar implies that the Korean won has been depreciated by about 50 percent compared with the pre-crisis period.[11] The real effective exchange rate shows a depreciation of about 22 percent compared with the rate in 1995-6, even higher than the rate prevailed during the "three-low boom" period (see Figure 25).

The exchange rate, after all, has returned to a realistic level. It is interesting to note that three countries in East Asia have successively depreciated their currencies by about 50 percent. After China's surprising one-time 50 percent depreciation of the yuan, the Japanese yen depreciated by 40 percent over a period of two and a half years starting in the second quarter of 1995. Since the Korean won did not adapt itself to these changes promptly, it was forced to do that via the currency crisis situation in late 1997. After the currency crisis, the Korean won is depreciated roughly by 50 percent compared with the pre-crisis period.

Figure 26 shows that the deterioration in the terms of trade since the fourth quarter of 1999 was more serious in its duration and its depth than the one that occurred in 1996. This time, nevertheless, the current account balance remained a sizable surplus in the following years thanks to the big jump in the exchange rate. The sufficient exchange rate depreciation brought by the currency crisis has been one of the kernel sources of economic growth during the last five years.

IV. Lessons for Economic Revival in Japan

The persistent Japanese economic recession in itself has aroused curiosity among economists for many years, and long lists of diagnoses and prescriptions have been suggested by foreign scholars, foreign government officers and staffs from international

[11]The annual exchange rate in 1996, one year before the onset of the currency crisis, was 803 won per dollar.

economic organizations. In most cases, their diagnoses were reasonable, but we should recall that their prescriptions may not be the right answers to the problems that Japan is currently facing.[12] The most typical examples are suggestions regarding Japan's macroeconomic policy. It is evident by now that the expansionary fiscal and monetary policies in the past did little to revive the Japanese economy. These policies might actually have made Japan's economic problems more difficult to solve. Since no other country in the world has ever suffered the same kind of recession as Japan has, we believe that only the Japanese are in a position to ascertain the ultimate causes of their chronic recession and prescribe the right solutions for it.

What implications can we derive from the Korean experience in structural reform during the last five years? The structural reform in Korea could rectify the distorted price system which drove the country into the economic crisis to the extent that a startling recovery ensued right after the crisis. At the very least, corporate debt will no longer build to such extreme levels and bring about the same kind of financial crisis.

From the macroeconomic perspective, however, the structural reform in Korea is incomplete yet. The distortions were remedied only partially and some of them were even aggravated. And we have yet to find any reliable evidence to believe that the structural reform has improved efficiency in resource allocation significantly enough to permit sustainable growth[13] as promised in the literature (Alexander *et al.* 1997). This experience highlights that chief targets of economic reform should be identified correctly in the first place. Otherwise, after hassling with its unpleasant and painful aftermath, the reform would fail to eliminate the very causes that forced the nation to carry it out.

Although Japan has been working on financial reforms for more than a decade, there still remains, allegedly, a huge amount of non-performing loans in the banking sector (Callen and Ostry 2003). The slow progress of the financial reform is looked upon as the very obstacle to Japanese economic revival, especially when

[12]It took several 'years' for them to recognize and admit their mistakes in their policy recommendations for Korea and other Southeast Asian countries.

[13]That was what all of Korean people envisaged when they endured pains from the aftermath of the reform.

compared with Korea's post-crisis performance. There is, of course, pervasive evidence that the adverse impact of the decline in asset prices was magnified by the failure of financial system in the early 1990s (Bayoumi 2001). However, the breakdown of financial system may not be the one and only source of Japanese persistent recession. If other factors than the financial system failure were also behind the chronic recession, it would be hardly persuasive to argue that economic vitality would be restored right away the completion of financial sector reform.

A. A Chronology of Japan's Prolonged Recession and Its Implications

The character of Japanese chronic recession is very different from and more complicated than that of Korea's economic crisis. The beginning of the Japanese economic difficulties can be traced back to the mid-1980s. Since the Plaza Accord in 1985, the Japanese yen underwent a truly massive currency appreciation. By the second quarter of 1995, the nominal exchange rate had declined to 84.4 yen per dollar, exactly one third of 250.7 yen per dollar in the second quarter of 1985 (see Figure 27). During the three years from the second quarter of 1985 to the second quarter of 1988, the exchange rate appreciated 50 percent from 250.7 yen per dollar to 125.6 yen per dollar. Consequently, the ratio of net exports to GDP declined 2.7 percentage points in five years from 3.9 percent in 1984 to 1.3 percent in 1989.

In response to the large scale exchange rate shock, the Japanese government stimulated domestic economy through an expansionary monetary policy. The official discount rate was cut by half from 5.0 percent in December 1985 to 2.5 percent in March 1987 and was maintained at 2.5 percent for the next two years (see Figure 28). The result was more than offsetting the adverse impacts of the currency shock. The ratio of total investment to GDP rose by 4.8 percentage points from 26.6 percent in 1985 to 31.4 percent in 1990 (see Figure 29). And the average real GDP growth rate from 1986 to 1990 recorded 4.9 percent, much higher than 3.3 percent from 1981 to 1985.

Unfortunately, however, for the Japanese, however, the asset price bubble emerged and expanded vigorously in the meantime until it went bust by 1991 (Okina *et al.* 2001). Along with the bursting of

FIGURE 27
QUARTERLY YEN PER DOLLAR EXCHANGE RATE

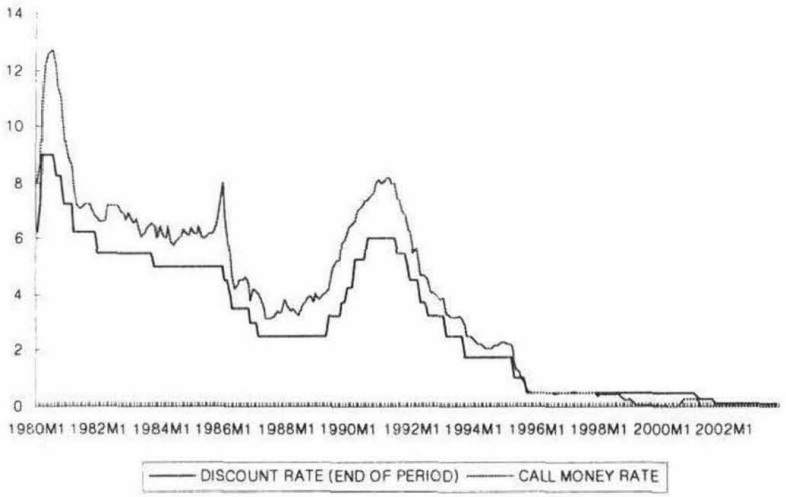


FIGURE 28
MONTHLY CALL RATE AND OFFICIAL DISCOUNT RATE OF JAPAN

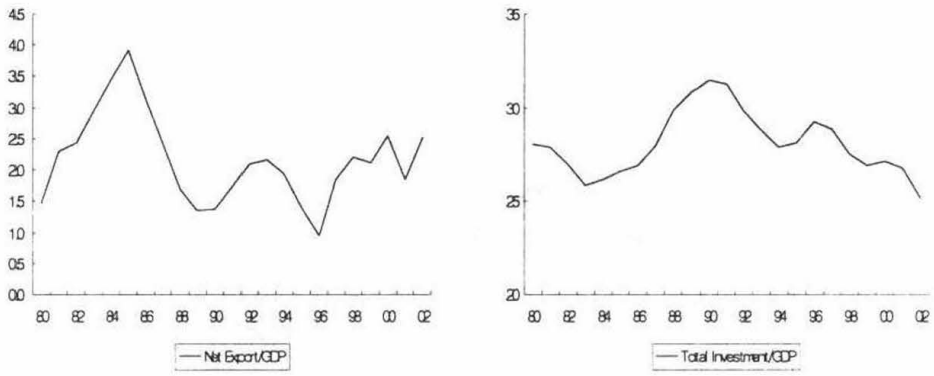


FIGURE 29
GDP RATIOS OF NET EXPORTS AND TOTAL INVESTMENT IN JAPAN

the bubble, the financial system broke down and Japanese economy fell into a recession in 1992. The official discount rate was lowered aggressively from 6.0 percent in June 1991 to 1.75 percent in October 1993. It was almost ineffective, however, for stimulating the economy because the function of financial intermediation was not rehabilitated. The Japanese economy could bottom out in October 1993, but the subsequent recovery was extremely slow and the average real GDP growth rate from 1994 to 1995 was 1.3 percent.

The proposition that the limited progress in financial reform is the cause of Japanese economic sluggishness seemed well justified in the early 1990s. Since the mid-1990s, however, the failure in rehabilitating financial system was no longer the central element of the prolonged recession. Not only large Japanese firms completed their shift away from bank loans by 1990 (Hoshi and Kashyap 1999), small firms also could finance their investment projects by their own gross corporate saving and financial assets from 1993 onwards (Hayashi and Prescott 2002). Above all, financial investment abroad by Japan sharply rose from 1995 to 1997 (see Figure 30) and surged into Asian countries including Korea, which was a strong counter evidence of the view that the lack of credit supply restricted demand for funds in Japan throughout the 1990s. Moreover, in explaining the extreme slow recovery in 1993 and 1994, Ito (1996) argues that the negative effect of currency appreciation was more preponderant than the breakdown of financial intermediation.

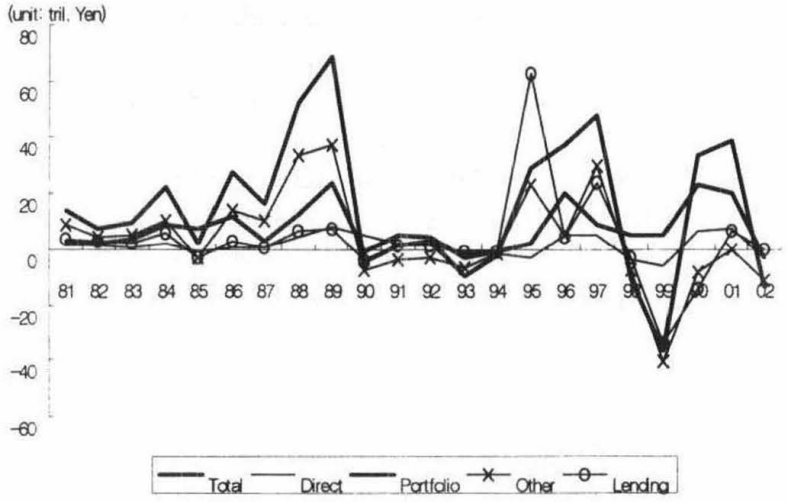


FIGURE 30
INTERNATIONAL INVESTMENT POSITION OF JAPAN

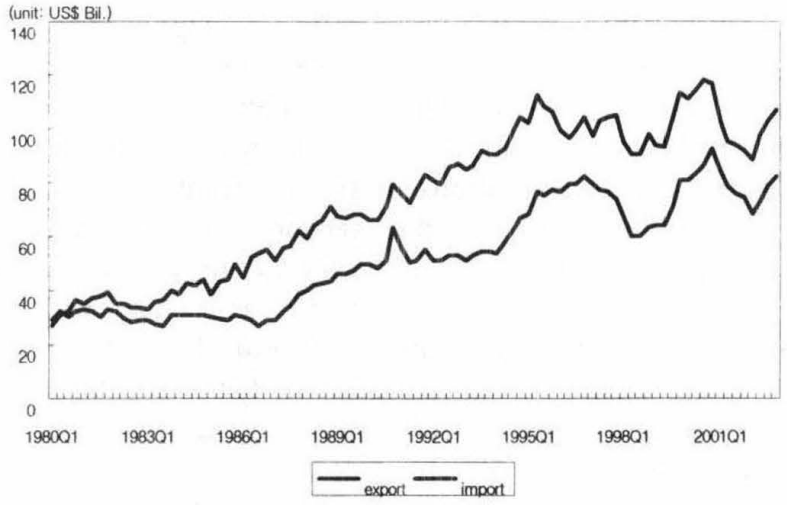


FIGURE 31
EXPORTS AND IMPORTS OF JAPAN (F.O.B.)

By the mid-1990s, a new sort of obstacles to durable economic revival seem to have emerged. From 1995 onwards, Japanese exports stopped its traditional increasing trend (see Figure 31). And it could be ascribed to the accelerated trend of overseas production of Japanese manufacturing firms. Developments such as the bursting of the bubble economy, concerns about the banking system, technological innovation related to telecommunication and the escalation of global competition were allegedly responsible for the increase in overseas production (Development Bank of Japan 1996). However, the sharp appreciation of the Japanese yen from 155.3 yen per dollar to 84.4 yen per dollar during the five years from the second quarter of 1990 to the second quarter of 1995 must have been the critical source of the explosion of overseas production in the mid-1990s.

In 1995, the official discount rate was lowered from 1.75 percent in March to 0.47 percent in October, and a large scale public expenditure program was passed in autumn. Although these attempts were useful for improving corporate profitabilities, they were not able to stimulate the domestic economy as a growing number of manufacturers were investing abroad due to the strong yen. Meanwhile, the trade volume with Asian countries had increased sharply, so the currency crises in those countries in late 1997 was a smashing blow especially for Japan. The Japanese economy fell into a recession in 1998, the second time in the post-bubble era and the financial crisis reoccurred. Furthermore, a persistent deflation began to enervate the Japanese economy. Following the world-wide slump in the information and technology industry which occurred in the second half of 2000, another recession arrived in 2001, the third time in the post-bubble period.

The chronology of Japan's prolonged recession we presented above persuades us to harbor doubts about the popular view that financial reform is the sufficient condition for a durable recovery in Japan. Financial reform is no doubt an indispensible task for reviving the Japanese economy, but the breakdown of financial system may not be the one and only source of Japanese persistent recession. Although the problems with the Japanese economy, such as large non-performing loans, inadequate fiscal policy, the liquidity trap, deflation, massive currency appreciation *etc.* are closely interrelated with each other, financial reforms alone may not automatically solve all other structural problems, especially if the

reforms are of a kind that carried out in Korea during the last five years.

B. Concluding Remarks

In retrospect, momentum of economic growth of Korea could resume just as soon as the exchange rate adjusted to a realistic level. The sharp decline in interest rates also contributed tremendously to the economic growth in the post-crisis period.[14] In contrast, it is hard to identify correctly which particular macroeconomic variables are responsible for the Japan's lost decade. Furthermore, even if we succeed in identifying the target variables, it is not easy to draft a structural reform agenda for adjusting effectively the identified target variables. Considering recent Japanese market interest rates and the level of government budget deficit and so forth, macroeconomic variables may perhaps be irrelevant to reviving Japanese economy.

In order to accomplish a durable recovery, we suggest that Japan's economic reforms should be directed to improving productivity (Porter *et al.* 2000; and Hayashi and Prescott 2002). Especially, Ito (1996) argues forcefully that the traditional slow productivity growth in nontradable sectors, such as construction and retail services, was responsible for the rapid real appreciation in the Japanese yen. We can easily deduce from his analysis an important policy recommendation that Japan should try to encourage productivity growth in nontradable sector rather than to pile up foreign reserves in order to deal with exchange rate problems. We believe that this recommendation applies also to Korea.

Before concluding this paper, let us suggest one more policy recommendation regarding the problem of population aging. Figure 31 presents one of recent long-term forecast for Korea's real GDP growth rate through 2030. This figure is excerpted from Park (2000) for which he built a large-scale annual macroeconomic model for the Korean economy. The figure predicts, surprisingly,

[14]The average nominal exchange rate during the post-crisis period from 1999 to 2003 is 1,214.3 won per dollar, 52 percent higher compared with 800.6 won per dollar in the pre-crisis period from 1992 to 1997. The adjustment in interest rates is also impressive. The average corporate bond yield (3Yrs) during the post-crisis period is 7.7 percent, 43 percent lower than 13.4 percent in the pre-crisis period.

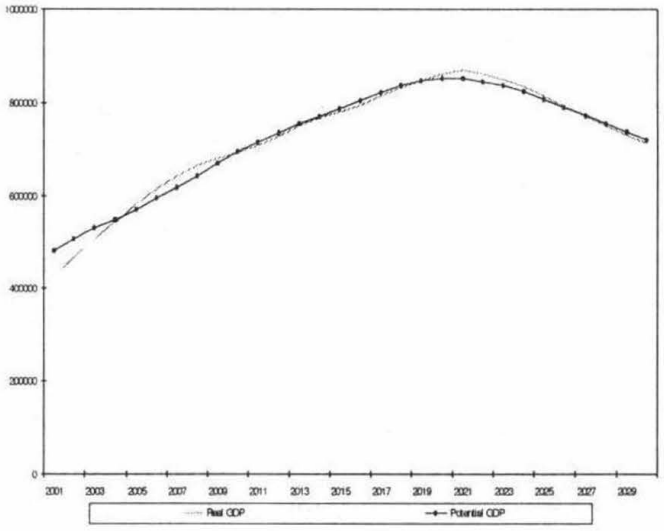


FIGURE 32
A LONG-TERM FORECAST FOR REAL AND POTENTIAL GDP OF KOREA
(TRILLION WON)

that Korea's real GDP is likely to contract starting in 2022. In his report, Park (2000) argues that fiscal expansion and monetary expansion whatsoever turned out incompetent to reverse the declining trends of real GDP since 2020s. 2020 is the year by which the old-age dependency ratio of Korea will reach 20 percent, and the size of population aged between fifteen to sixty-four will begin to decline. As the greying of the population becomes pronounced, private consumption declines, the current account surplus rises, the exchange rate appreciates, and the inflation rate declines throughout the entire decade of the 2020s. This situation seems qualitatively similar to that of Japan's macroeconomy today.

In 1990, the old-age dependency ratio of Japan reached 20 percent, and the size of population aged between fifteen to sixty four began to decline. Figure 32 suggests that the problem of aging population might be one of the ultimate sources of Japan's chronic economic slumps.[15] Unfortunately for the Japanese, the asset bubble

[15]Take note that Turner *et al.* (1998) also predict that, owing to population aging, per capita real GDP in the U.S., EU, and Japan will decline by 10 percent, 18 percent, and 23 percent respectively by 2050.

might have happened to burst at precisely the moment – the early 1990s – when the aging of the population began to exert significant negative effect on Japan's macroeconomic performance.

Beyond the task of financial and corporate sector reform, Japan certainly has additional challenging tasks: Japan has to deal with the aging population and the low productivity in nontradable service sector. These additional tasks would not be easy to accomplish. However, the Korean experience in structural reform during the last five years manifests that determined efforts should be made to tackle these tasks. Otherwise, Japanese economy will be exposed to economic difficulties recurrently.

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