

Korea: Could A Real Estate Price Bubble Have Caused the Economic Crisis?

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## **Introduction**

The real estate sector comprises a major component of the national economy and is closely linked with its financial markets (Ermisch 1990, Miles 1994). In Korea, investment in new housing has accounted for eighteen to twenty-two percent of total capital formation and six to eight percent of GDP throughout the 1990s. Housing finance, which is a lynchpin between the housing and the financial sector, represents a substantial share of total credit. At the end of 1998, housing loans outstanding comprised twenty-seven percent of all loans made by all banks, and was equal to thirteen percent of GDP in Korea. Housing represents thirty percent of world wealth, larger than bonds (twenty-seven percent) and equities (nineteen percent) (Lea 1999). About thirty-six percent of total capital stock in Korea was in the form of housing as of 1996 (Pyo 1998). The non-residential real estate is also sizable although available data are not as systematic compared with residential real estate in Korea.

Since real estate is an input to production and consumption as well as being an important asset, the level of real estate market activity is strongly affected by macroeconomic forces. And, for the reasons discussed above, changes in real estate prices have far-reaching implications on the wider economy. A rise in housing and land prices boosts the aggregate demand by raising consumption through the wealth effect, while reducing the aggregate supply by raising the cost of production. Increases in real estate prices have a direct impact on the financial sector, because real estate is the key collateral against its loan portfolio. The share of bank loans made against real estate collateral stood around forty-two to forty-three percent in Korea in the early 1990s until it fell to thirty-eight percent in 1995. The figure dropped further to thirty-four percent in 1996 before it went up to thirty eight percent in 1997.

In light of the close linkages between the real estate sector and the national economy, the Korean economic crisis that started in late 1997 raises an interesting question on the direction of causality between developments in the real estate sector and macroeconomic performance. On one hand, the contraction of economic activity caused by the economic crisis was of an unprecedented magnitude and claimed a hefty toll on every segment of the economy, including the real estate sector. In this respect, the real estate sector suffered from the consequences of the economic crisis. On the other hand, it is claimed that land and housing price bubble that was formed in the late 1980s and early 1990s started

breaking since 1992 and the trend of declining relative price of real estate prices continued until the crisis set in. This suggests a possibility that real estate price changes might have triggered the economic crisis.

The main objective of this paper is to explore the linkages between the real estate sector and the national economy in conjunction with the recent economic crisis in Korea. After describing the recent trends in the real estate sector, we try to establish the causality between the decline in the real estate sector and the economic crisis. In particular, we argue that the fall in real estate prices could not have been a major cause of the economic crisis. We also review policy measures undertaken by government towards the real estate sector in response to the economic crisis and evaluate their impact. Finally, we conclude the paper with a brief discussion of future prospects and policy challenges.

## **Recent Trends and Volatility in the Real Estate Sector**

Since the economic crisis started in November 1997, both residential and nonresidential real estate sectors have been struck hard. The demand for housing fell abruptly due to a sudden rise in the unemployment rate (over 8 percent), the reduction of household income, and the growing uncertainty about job security, as well as diminished expectation about capital gains from housing and the high interest (over 20 percent per annum). The supply of new housing dropped in response to reduced demand and the credit crunch caused by the crisis. On the other hand, the supply of existing houses placed on the market for sale increased as some households tried to unload their houses to mobilize cash. As a result, unsold new houses increased in numbers while housing prices fell substantially.

### ***Urban Housing and Land Prices***

Figure 1 shows the recent trends of urban housing price index compiled by the Housing and Commercial Bank (formerly the Korea Housing Bank). The figure shows that the purchase price dropped 12.6 percent in 1998, while *Chonsei* deposit dropped much more acutely by 18.4 percent. Since the consumer price index (CPI) rose 7.5 percent during the same year, the purchase price of housing declined by 20 percent and the price of rental housing fell 26 percent in real terms. These represent an exceptionally large dip in Korea.

<< Figure 1 about here >>

The abrupt fall of chonseil deposit caused a serious problem in the rental housing market. Under a chonseil arrangement, the tenant who signs a rental contract deposits about a half of the purchase price of a house to the landlord in lieu of monthly rents, and the deposit is fully returned to the tenant at the termination of the lease. The landlord is supposed to generate an income from the deposit during the contract period equivalent to rental income. In a normal market, chonseil deposit level rises over time, and the landlord can find a new tenant who is willing to pay a larger amount in deposit than the outgoing tenant. As the deposit level fell unexpectedly after the crisis broke out, some landlords could not find a new tenant or mobilize the difference between the initial deposit payable to the old tenant and the smaller deposit offered by the new tenant. Since many houses purchased for investment purposes are financed through chonseil deposit, declining deposit was equivalent to reduced mortgage financing, thereby depressing demand for home purchases<sup>1</sup>.

### ***Housing Supply and the Housing Industry***

The housing industry was severely hurt by the economic crisis. Construction of new houses decreased 48.7 percent in 1998 and unsold apartments accumulated in 1998 due to the meager demand for new housing as one can see from figure 2.

<< Figure 2 about here >>

During the same year, 416 out of about 3,600 house builders went bankrupt. The main reason for such large casualties was the industry's shaky financial structure that is heavily dependent on debt financing. The average debt-equity ratio of the construction industry was 563 percent, much higher than that of the manufacturing industry, which was 317 percent in 1996, quite high in its own right (Bank of Korea 1997). Another reason was the pre-sale scheme. Most new apartments are pre-sold with a twenty percent down payment and the rest is paid in installments over a roughly two-year period during which time the apartments get built. As many households who had agreed to purchase apartments this way failed to make the scheduled payments due to unanticipated economic hardship, homebuilders ran into a serious cash-flow problem.

## *Housing Finance*

The housing finance system was also severely damaged<sup>3</sup>. Supply of new mortgage loans decreased twenty-five percent in 1998 despite an increase in the loans made through the National Housing Fund (NHF), the public sector housing finance vehicle. Mortgage companies (called installment credit companies), which entered the housing finance market in 1997 and quickly grabbed twenty-five percent of new mortgage origination, stopped lending at the outbreak of the crisis. They mobilized short-term funds from the capital markets and borrowing from merchant banks, and made longer-term housing loans. The restructuring of merchant banks in the wake of the economic crisis, and the rising cost of funds due to the credit crunch rendered such operation impossible.

Deterioration of borrowers' capacity to service the mortgage debt impaired the asset position of mortgage lenders. The share of housing loans made with the guaranty by the Korea Credit Guaranty Fund that went bad doubled from 10.4 percent to 20.5 percent between 1997 and 1998. The Korea Housing Financial Cooperative which had provided guaranty for completion of housing projects to new home buyers on behalf of house builders who went virtually bankrupt. The Cooperative had already been in trouble even before the crisis started due to the slow-down of the housing market, and the massive failure of member homebuilders ensuing the crisis aggravated the situation. For example, 290 firms that the Cooperative provided guaranty to ran became insolvent in 1997 with the total amount of accumulated guaranty of 4,416 billion Won, but these figures jumped to 445 and 9,238 billion Won, respectively, in 1998. It was later restructured and re-established as the Korea Housing Guarantee Company with new capital injected by the National Housing Fund.

It is worth noting that massive repossessions of mortgages that took place in the U.K. in the early 1990s when housing prices fell below the amount of mortgage loans (Miles 1994) did not occur in Korea despite the economic crisis. The main reason was that the loan-to-value (LTV) ratio on housing loans was so low that there was only remote possibility of negative equity. For example, LTV ratio was about 27 percent on mortgages provided by the Housing and Commercial Bank, the largest and dominant mortgage lender.

### *Land Market and Office Market*

Land markets also went down quickly. As one can see from figure 1, land price had remained stable since 1996 but fell sharply in 1998. The price index of residential plots fell 13.8 percent in 1998 while that of commercial and industrial sites 16.4 percent, although it is not shown in the figure. The decline in land price was due to reduced demand and increased supply. Demand fell as overall production slowed down, while market supplies increased as business corporations and individuals tried to sell land to generate cash needed to bring down the debt-equity ratio mandated by the restructuring program or to meet cash needs, respectively.

Although systematic data on commercial real estate are difficult to come by in Korea, available data paint a picture that is similar to the residential real estate sector. For example, vacancy rates in large office buildings in Seoul's major business centers rose substantially since the economic crisis started (figure 3)<sup>3</sup>. In the relatively new business district located to the South of the Han River, the vacancy rate jumped from 15.3 percent to 25.7 percent in 1998. There have been reports of a 50 percent fall in rents on some office buildings. The main reason for all this was the decrease in demand due to downsizing of firms, merges and closures of financial institutions due to restructuring. Another reason was the massive supplies of new office space that accumulated between the late 1980s and early 1990s.

<< Figure 3 about here >>

### *A Summary*

In short, real estate market trends described so far can be attributed to the macroeconomic forces that prevailed since the economic crisis started. They can be summarized by way of figure 4 that provides a conceptual framework of the impact of the economic crisis on the real estate sector. What happened in the real estate markets is consistent with the hypothesis that the real estate sector suffered from the consequences of the economic crisis.

<< Figure 4 about here >>

## **Economic Crisis and the Real Estate Markets: Causality**

### ***From Real Estate Price Collapse to Economic Contraction***

Much has been written about the causes of the Asian crisis in general and the Korean economic crisis in particular<sup>4</sup>. There appears to be a consensus that the crisis was caused by a combination of structural problems of the Asian economies such as inadequate regulation of the financial institutions and the intrinsic instability in international flow of capital prone to panic rather than mismanagement of monetary and fiscal policies.

Among the many explanations is the hypothesis emphasizing the role of the boom and the bust of real estate prices. For example, Krugman wrote, "..in all of the afflicted countries there was a cycle in the asset markets that preceded the currency crisis.. Asian story is really about a bubble in and subsequent collapse of asset values in general, with the currency crises more a symptom than a cause of this underlying real malady." Renaud et al (1998: 2) also points out that "Non-performing real estate asset loans, overvalued real estate collateral and business loans improperly defected into real estate investments and contributing directly to banking failures are a familiar story in quite a few countries." He described the sequence of causality in Thailand as "Real estate crisis=>banking crisis=> currency crisis=> contraction" (Renaud 1999). Quigley (1999:14) attributes the Southeast Asian economic crisis to the combination of outmoded banking practices and an immature market for real property.

The mechanism of so-called asset deflation implied by the above line of reasoning can be summarized by figure 5. Falling real estate prices lead to a reduction in consumption through negative wealth effect, to an increase in non-performing loans and hence a decrease in supply of new credit by financial institutions, which results in a reduction in investment by the firms. Investment decreases also because the drop in real estate prices impairs the firms' capacity to borrow. Contraction of consumption and investment leads to a recession. And the vicious cycle begins. Edison et al (1999) claims that the initial fall in land values leads to the scramble for liquidity as companies sell land to satisfy their collateral requirements, causing land prices to fall further.

<< Figure 5 about here >>

Applying this logic to Korea, it has been argued that increases in land value

caused by land speculation in the late 1980s enhanced the collateral value of the land held by firms and enabled them to leverage more debt. In this way, Korean firms were able to finance investments, some of which later proved unprofitable and ended up creating excessive capacities<sup>5</sup>. It is also claimed that some firms tended to secure sufficient land in advance with future expansion of production capacities in mind. Their financial planning was often based upon optimistic expectation about the price of the real estate being secured. Expected appreciation of land value can raise the demand for land (Han 1998). When these firms' operating income and property prices fell, they became unable to service the debt and the loans became non-performing, and this could have damaged the asset position of the lending institutions.

High real estate prices and rents have also been identified as a cause of the structural problem characterized by high costs of doing business in Korea. And the housing construction boom that started in 1989 is claimed to have exerted an upward pressure on the overall wages and hence worsened the competitive edge of firms. This could have indirectly contributed to the economic crisis, so goes the theory.

### ***Could the Real Estate Have Caused the Korean Economic Crisis?***

Some of the above claims were not relevant in Korea, and others might have been true in qualitative terms, but not in quantitative terms.

First of all, unlike in Japan, Thailand, or Indonesia, Korean financial institutions had been prohibited from lending to finance real estate purchases except for land for new housing. This regulation was repealed in January 1998, right after the economic crisis began. Due to this and other regulations, Korea's exposure to real estate was relatively small (Renaud 1999, Hong et al 1998). Therefore, declining real estate prices would not have been created non-performing loans.

Moreover, housing and land prices had not collapsed suddenly before the economic crisis began. Real estate prices had been declining slowly and steadily since 1991 and stood almost flat from 1995 on. Housing price came down mainly as a result of massive construction that started in 1988. During the 1988-97 period, a total of 5.84 million new dwelling units have been built, a quantum leap from 2.27 million houses built during the 1977-1986 period. The number of new housing built between 1988 and 1997 was equal to about 55 percent of the total housing stock of 10.63 million units available as of 1997.

Such an abrupt increase in housing supply was initiated by the government drive for two million new dwellings over the 1988-92 period. The policy move represents a fundamental change in that the government recognized that housing price could not be contained by anti-speculation measures to control demand without a substantial increase in supply. The massive construction of housing was made possible through a package of measures to increase the supply of major inputs to housing production, which were tightly controlled by government. Government rezoned large areas of rural land as residential plots to be developed by the public sector agencies such as the Korea Land Corporation, the Korea Housing Corporation, and local governments, which dominated the supply of developable land (Hannah et al 1993). As a result, the average annual amount of developable land made available between 1988 and 1991 was almost four times as large as the annual figure for the 1980-87 period. Government also injected funds to increase the supply of housing finance to prospective homebuyers, and made regulatory adjustments to make housing production more profitable to house builders (Kim 1998, Kim and Suh 1999).

On top of massive new supply, the pace of economic growth slowed down in the early 1990s, contributing to the steady decline in the demand for real estate and hence real estate prices<sup>6</sup>. Consequently, the price bubble in real estate prices in the late 1980s documented for example by Kim and Suh (1993) was removed gradually by market forces. In fact, Park et al (1998) suggests that the price bubble in housing and land had almost disappeared by 1997<sup>7</sup>. The size of the real estate price bubble reached its highest point in 1991 at 58 percent and 40 percent respectively, and fell steadily until it reached to 18 percent and 16 percent by 1997. This pattern is consistent with figure 6 that shows the pace of nominal GDP growth and housing and land price increases. It is quite clear that both housing and land prices increased more slowly than nominal GDP, which can be considered a crude measure of the market fundamental<sup>8</sup>. It was the outbreak of the crisis that caused the sudden and massive decline in real estate prices as we described above.

<< Figure 6 about here >>

Thirdly, the linkages between collateral value held by business corporations and loans made to them by the financial sector were quite loose in Korea. Bank loans expanded faster than the value of collateral entrusted to the banks. During the 1990-96 period, the collateral in the hands of banks increased by 113 percent

from 26.5 trillion Won to 54.6 trillion Won, while outstanding loan balances grew by 180 percent from 57.2 trillion Won to 160.6 trillion Won (Bank Supervisory Board 1998).

There are a few explanations for high-indebtedness of Korean business corporations. For one thing, the cross-guaranty mechanism amongst corporations belonging to the same conglomerates, or *chaebol*, enabled these firms to take out highly leveraged loans from banks even sometimes without adequate collateral. Another factor was the implicit government guarantees on bank lending. Chaebols were considered too big to fail, and it was believed that government would bail them out and not let them go bankrupt. In such an environment, the more chaebols borrow, the safer they were, and hence they kept borrowing. Since banks had little incentive for careful credit evaluation, they kept lending to the firms. One additional factor was that chaebols owned or controlled many non-bank financial institutions. These financial institutions provided loans to chaebols without collateral in many instances (Joon-Kyung Kim 1999).

In summary, we can conclude that the real estate sector could not have been a major cause of the economic crisis. Instead, the real estate sector was adversely affected by the economic crisis caused mainly by factors that were external to it.

## **Government Response, Recovery and the Challenges Ahead**

### ***Government Response***

The fear of asset deflation and the consequent stagnation of the Japanese type prompted the government in the early stage of the economic crisis to adopt a comprehensive package of deregulation and stimulation measures on a massive scale. The fact that the home-building industry is highly labor-intensive offered an additional justification for the stimulus because unemployment emerged as the most serious problem caused by the crisis.

On the demand side, tax concessions were provided to those who purchased houses smaller than 85 square meters in net floor space before June 1999. Supply of loans for new home purchases and installment payments was increased and additional credit guaranty was provided through the Korea Credit Guaranty Fund with IBRD loans. Interest rates were lowered on housing loans made by the National Housing Fund. Eligibility requirements for new home purchases were eased. In order to alleviate the mobility problem caused by declining chonse

deposit, government provided 155.4 billion Won in loans to landlords to help them pay back the deposit. Additional 150 billion Won was allocated in 1999. Regulations on land transactions were removed, and the real estate market was opened to foreigners to boost demand.

On the supply side, key regulations were removed. The price control on new apartments that had existed for twenty years was lifted and the accompanying regulation on size distribution was repealed. The exception is the apartments with a net floor space of 60 square meters or less that were financed by subsidized loans from the National Housing Fund. Considering the attitude of risk-averse policy makers (Kim and Kim 1999b), deregulation might not have been implemented had it not been for the economic crisis. For example, lifting the price control on new apartments had been opposed because of the fear that deregulation would lead to sharp increases in housing prices at least in the short run (Kim and Kim 1999a). The prospect of declining housing prices was very helpful in diffusing such concern.

Government also injected funds to Korea Asset Management Corporation (KAMCO) so that it could purchase land and buildings held by financial institutions as collateral against loans that became non-performing. The special fund was endowed with 33.6 trillion Won and spent 20 trillion Won on purchasing real estate estimated to be worth 44 trillion Won. Later, some of the acquired real estate was auctioned off by KAMCO, either directly or after being packaged into asset-backed securities.

A major institutional development is the creation of a secondary mortgage facility. The Korean Mortgage Corporation (KoMoCo) was established in October 1999. The company's paid-in capital is 100 billion Won and the Government plans to double it. Government contributed 35 percent of the capital through the National Housing Fund. Housing and Commercial Bank and two other leading banks chipped in 15 percent each to go with a 10 percent contribution by the largest insurance company. The IFC has agreed to fill in the remaining 10 percent. KoMoCo plans to purchase loans made by the National Housing Fund, and to repackage them into mortgage-backed securities (MBS).

A new housing policy agenda that emerged from the economic crisis concerns shelterlessness. Massive unemployment led to a ten-fold increase in the number of people sleeping on the streets of Seoul. The nationwide figure for such people was estimated at 6,000 in 1998. Government opened meal centers and temporary accommodation as well as arranging daily manual work opportunities for them. Such moves were unprecedented and might set a new policy trend toward building

a social safety-net for the disadvantaged segment of the population.

### ***Economic Recovery and the Real Estate Sector***

Within two years since the economic crisis started, Korea has come a long way towards recovery. At the beginning of the crisis, grave pessimism dominated the air. Experts were talking about 20 percent interest rate, 2,000 Won per US Dollar, and the Korea Stock Price Index of 200. But the economy turned around much sooner than expected. After registering a negative growth of 5.8 percent in 1998, real GDP bounced back to post a positive growth rate starting in the first quarter of 1999. The growth rate for 1999 is projected at 9.3 percent and the three economic indicators mentioned above stand around 10 percent, 1,150, and 1,000, respectively.

We have argued earlier that the decline in real estate prices and construction activities was caused largely by the deterioration of overall economic conditions rather than factors internal to the real estate sector. Then, it would be logical for the real estate sector to recover following overall economic recovery. And this was what actually happened.

Although government intervention in the real estate sector helped preventing the vicious circle of asset deflation and further contraction of the economy, the real estate sector had shown no clear sign of recovery until the end of 1998. Unsold apartments increased in numbers throughout 1998, and new housing production continued to stagnate even into the first quarter of 1999. It is since 1999 that housing and land market activities started picking up, and this is mainly attributable to the fall in interest rate since mid-1998 and the overall economic recovery. Vacancy rate in office buildings in Seoul also started falling in the first quarter of 1999. By the third quarter of 1999, housing prices in major submarkets in the Capital Region almost restored the pre-1997 level. The current vacancy rate in Seoul's major business districts is quite close to the pre-economic crisis level<sup>f</sup>.

### ***Challenges Ahead***

Looking ahead, real estate market conditions are likely to change substantially. Housing markets will become demand-oriented rather than supply-driven. This is inevitable as competition among homebuilders intensifies, housing shortages become less acute, the decrease in the number of children in an average post baby-boom family and aging population slows the growth of housing demand, and consumer demand becomes more diverse. Secondly, the linkages between the real

estate and capital markets will be strengthened. This means that financial services will improve, but at the same time the real estate sector will be more exposed to the financial markets and hence more vulnerable to their fluctuations.

There are high expectations that introduction of the secondary mortgage facility will increase the supply of new mortgages and hence enable households to purchase their homes with a down-payment equal to 20-30 percent of the purchase price. Although low interest rate and falling house price-to-income (PIR) ratio would certainly be helpful, it is not likely that the loan-to-value ratio can be raised above 50 percent in Seoul where PIR is still about 6. Moreover, standardization of mortgages, a competitive primary mortgage market, and well-developed capital markets would be required before the secondary mortgage market can be up and running (Lea and Chiquier 1999). Besides, housing finance alone will not be able to solve the affordability of housing problem.

A major policy challenge will then be to make the supply system more responsive to emerging demand by securing an adequate regulatory environment in which the markets can work properly. At the same time the housing needs of the low-income group that cannot be served by the market should be addressed by providing various housing options. Hopefully, continued supply-side deregulation will lower the costs of housing and the development of market-based housing finance will enable the government to channel scarce funds to support the poor in a more targeted manner.

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Endnotes:

1. It should be noted that these figures refer to new houses that have not been taken by would-be purchasers through a pre-sale arrangement described below. The number of completed houses that remain unsold is much smaller. For example, out of 102,701 apartment units that were classified as unsold as of December 1998, only 18,102 were completed units that were unoccupied.

2. See Kim(1997) for a discussion of the housing finance system and its trends up to 1997.

3. The magnitude of vacancies in Korea is much smaller compared with that in Thailand. Vacancy rate for office buildings in the Bangkok Metropolitan Region was 23 percent in early 1998. What is more alarming is that vacancy rate on new housing was 28 percent, equivalent to two years of new supply in the market (Renaud et al 1998: 5-10).

4. See Cho (1998), Cho and Rhee (1999), Kim (1999), Krugman (1998), and Shin and Hahm (1998) for example. Kim provides a critical review of the various hypotheses about the causes of the Korean economic crisis.

5. This is a Georgist view of business cycles. See Foldvary (1997).

6. An additional factor might have played a role in stabilizing real estate prices. A

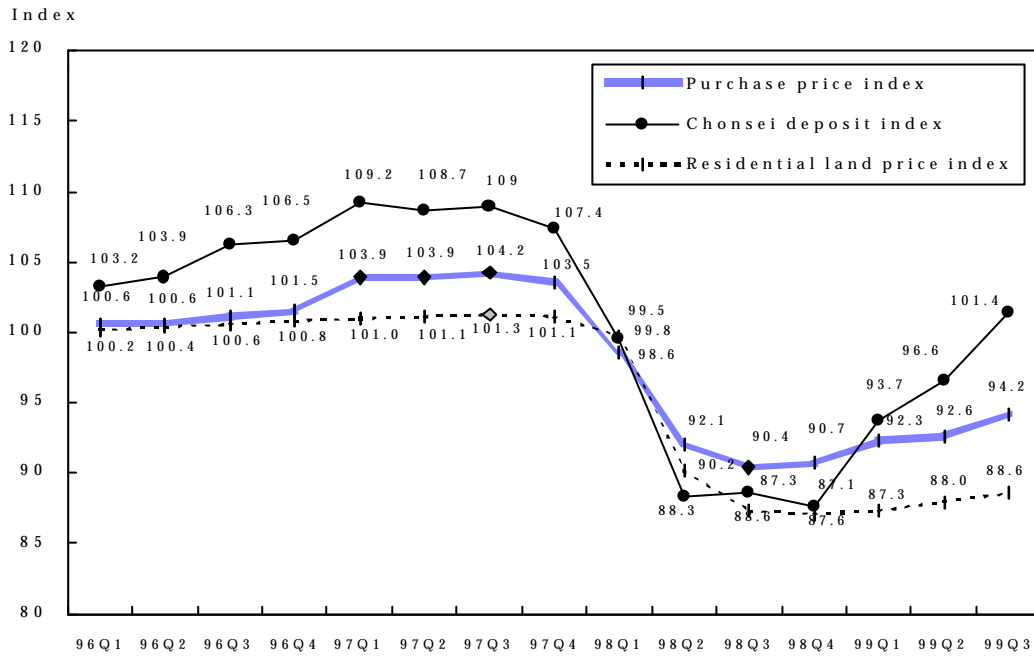
set of so called "The Public Concept of Land" laws was legislated in 1989 to control real estate speculation. These laws aimed at discouraging land holding by a special tax on unrealized capital gains on undeveloped land, and a charge on holding of residential land exceeding a limit per household in major urban areas. They must have contributed to suppressing demand for real estate as well as encouraging development of vacant land into low-density commercial premises or row houses. But their net impact appears to have been small. For example, the number of row houses (for both owner-occupancy and rental) built during the 1988-97 period was 964,004, accounting for 16.5 percent of the total number of new dwelling units produced, which was 5,843,389. This is very similar to the situation that prevailed in the 1978-97 period during which time 360,417 row-houses were built, comprising 15.6 % of the total supply of new dwelling units, which was 2,311,901.

7. Kim and Suh (1993) employed the concept of a growing rational bubble. Park et al applied the same model.

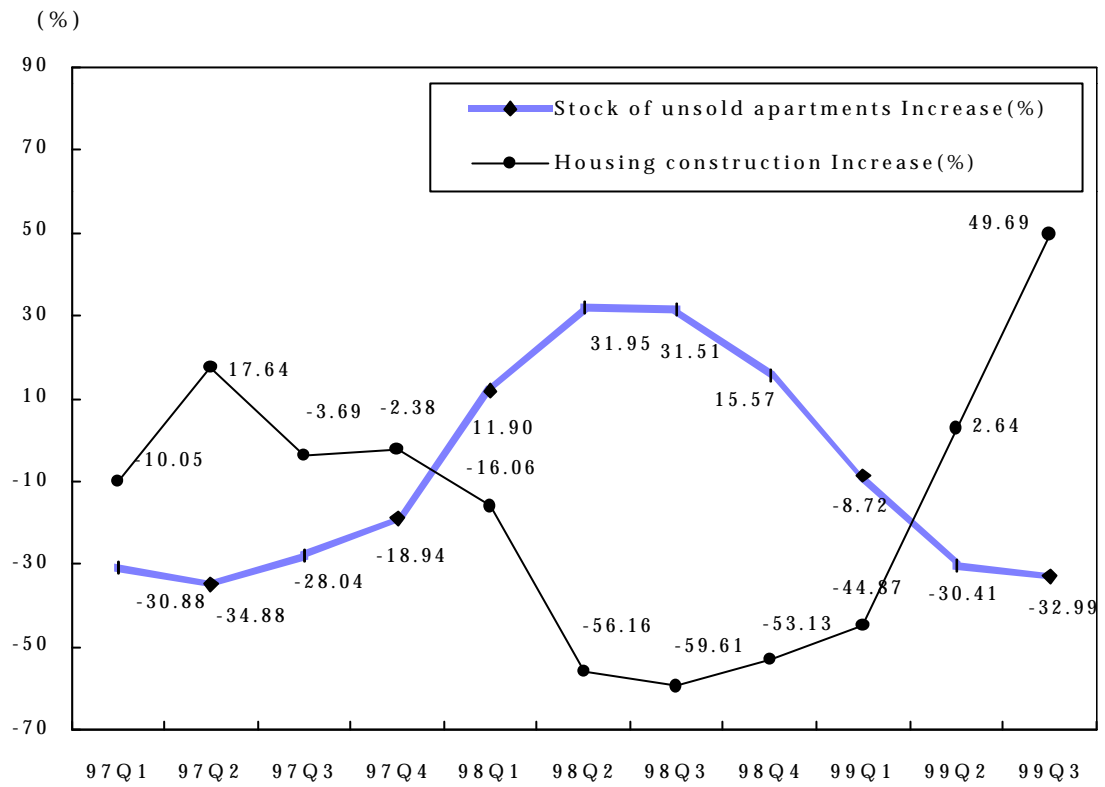
8. The same result holds for quarterly data extending over a longer time period running from the first quarter of 1974 to the first quarter of 1999. See Kim and Lee (1999) for details.

9. There are no official vacancy rate data. The Construction Economy Research Institute of Korea has been publishing vacancy rate figures for large office buildings in Seoul since spring 1999. The average vacancy rate was 11.9 percent in March, 8.8 percent in June, and 7.8 percent in September. Shin-Young, the source of vacancy rate figures reported in figure 3, estimates the current vacancy figure about 5 percent, which is almost the same as the pre-economic crisis level.

**Figure1 : Recent Trends of Urban Housing & Land Price Index (1995=100)**

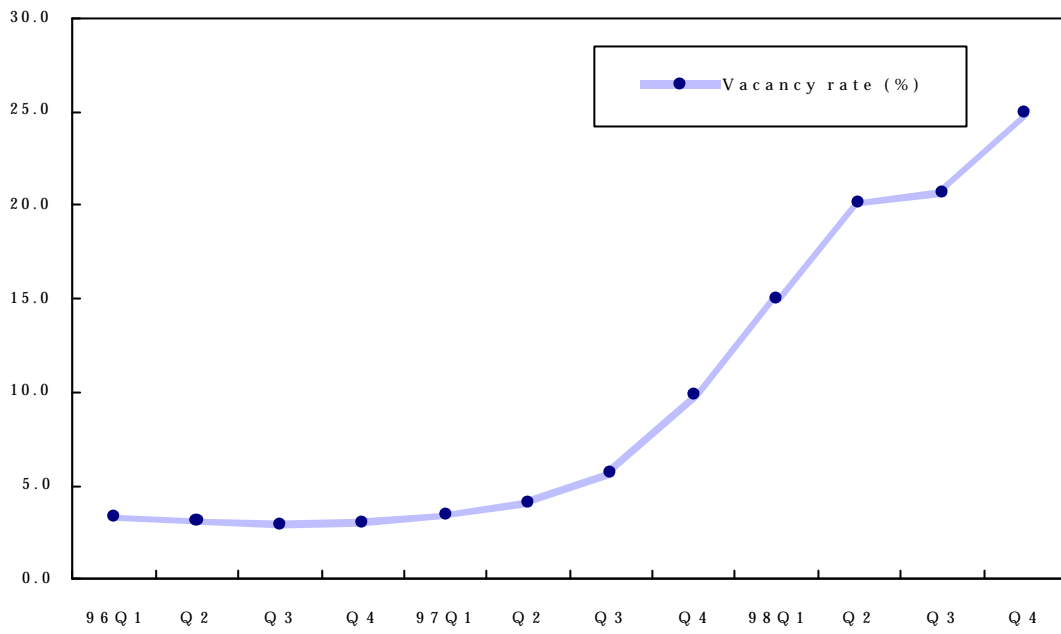


**Figure2: Recent Trends of Housing Construction & Stock of Unsold**



**Apartments**

**Figure3 :Vacancy Rate on Office Building in Seoul's Major Business District**



**Source: Shin Young Co. Ltd**

Figure4 : Impact of economic crisis on the real estate sector

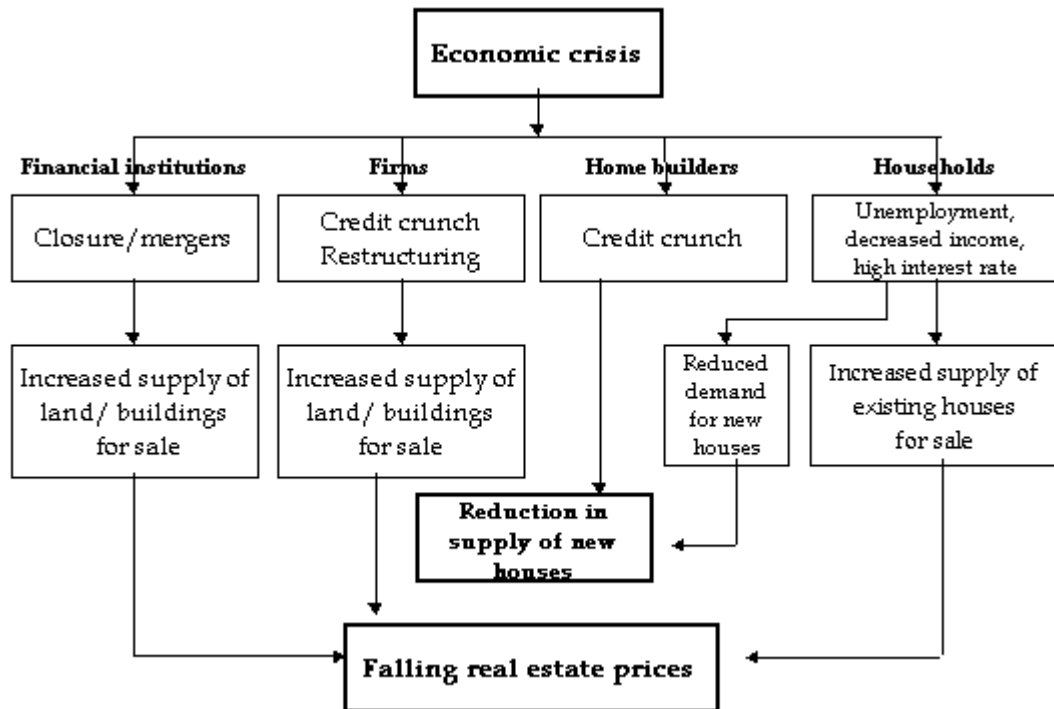


Figure 5 : Impact of real estate price decreases on the macroeconomy

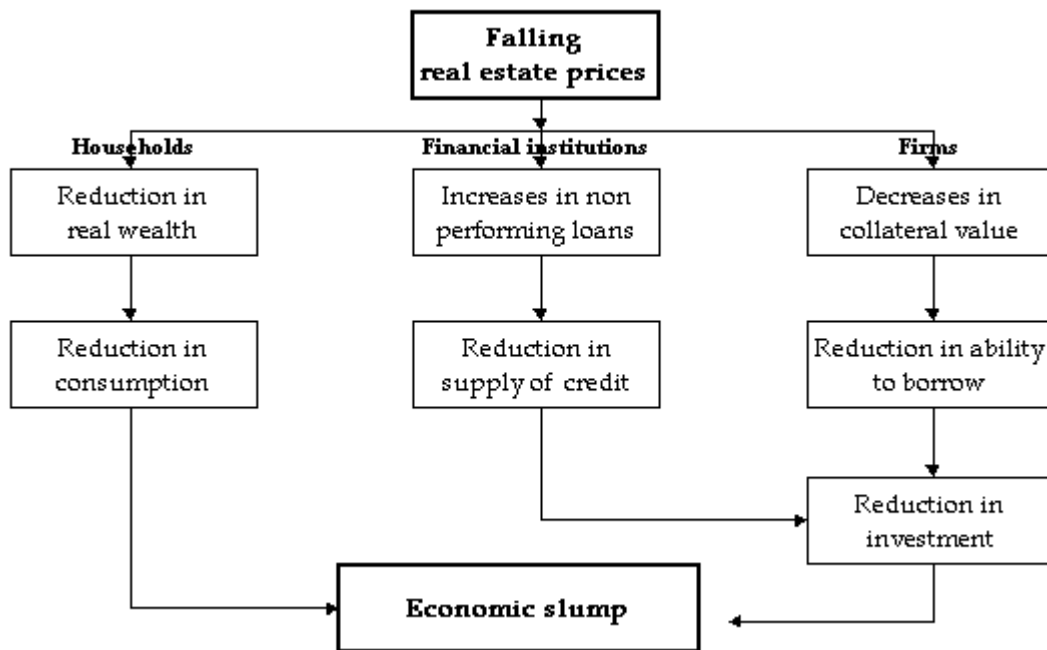


Figure6: Nominal GDP Growth vs. House & Land Price Increases

