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LAND TAXATION IN KOREA

Younghoon Ro

Kipf Korea Institute of Public Finance

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A Critical Review of Current Policies and Suggestions for Future Policy Direction

Edited by **Younghoon Ro**

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and Suggestions for  
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**Younghoon Ro**

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## Preface

In the late 1980s, Korea suffered from a variety of problems in the land market and struggled to find policy tools to deal with them. In Korea, land value relative to GNP far exceeded that of most other countries. Also, the rate of land price inflation was in the range of 25% to 40% per annum, resulting in a huge amount of capital gains concentrated in the hands of landowners and the ensuing wide-spread land speculation activity.

In order to deal with these land problems, the Government introduced the "public concept" of land use in 1990. Following the spirit of this concept, new taxes and valuation standard were introduced: 'the Excessively-Increased Value of Land Tax', 'the Aggregate Land Value Tax', 'the Publicly-Declared Land Value System', and 'the Development Charge'. Now, six years have passed since their introduction, and we are in a position to evaluate the experience of new taxes as well as other land-related taxes in Korea.

This study grew out of recognition of two developments inside and outside of the Korean land market since 1990. The first was the downward price movement in the land market after the second quarter of 1992, which lasted until the third quarter of 1994 but has stabilized since then. The second was the institutional changes surrounding the land market and land taxation policies: the local autonomy system vitalized after the local election, and the passage of the Act on Property Transactions under Real Names in 1995. These changes and developments were not fully anticipated and hence were not taken into account at the time when new land taxes like the Aggregate Land Value Tax and the Excessively-Increased Value of Land Tax were introduced.

The research project which generated the papers collected in this volume

was organized to review the current land taxation policy issues in Korea, and to make suggestions for future policy direction. The project was jointly undertaken by the Korea Institute of Public Finance and the Lincoln Institute of Land Policy in Cambridge, U.S.A. The participants include: Professor Jinsoo Lee, Professor Sungwook Lee, Ms. Jane Malme, Dr. Younghoon Ro, and Ms. Joan M. Youngman. Professor Oliver Oldman has been very helpful in providing encouragement and advice for the project. I would especially like to recognize Dr. Ro's effort in organizing the project from the planning stages to the publication of this book. In August 1995, all of the authors participated in the Cambridge conference organized by the LILP staff.

This research project received strong support from the Office of Tax Policy at the Ministry of Finance and Economy in Korea: they provided data and helpful opinions on policy alternatives. Also, the authors are grateful to the referees of the various interim and final drafts. Finally, I wish to thank Ms. Linda Eastley, Mr. Joon Lim, and Ms. Eunjoo Song for their help in preparing this volume for publication. The conclusions and policy recommendations reflect the views of each author and not those of the Korea Institute of Public Finance.

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**I****Overview: Alternative Perspective of Land Problems in Korea**

Jin Soon Lee

**1. Introduction**

Since the mid-1960s, Korea has experienced three separate cycles of land price inflation. It has been widely recognized that the land problem is one of the most serious social and economic problems in Korea. In order to remedy this problem, the government introduced the so called "Public Concept of Land" system in 1990, and land prices have declined somewhat during 1992-94.

However, many problems have emerged in the course of implementing of the system, in particular, Excessively-increased Land Value Tax and Land Development Charge, which are kinds of land capital gains tax on an accrual basis. The main aim of this project is to review critically the past experience in its land taxation policy and suggest a future policy direction.

This chapter will focus on the basic issues for designing a new land taxation policy. Section 2 will summarize the land problems are in Korea. The primary issue then is whether the high land prices compared to income in Korea are due to market fundamentals, or bubbles the self-fulfilling prophecies of market participants. If land price increases are caused by changes in the fundamentals, especially changes in economic structure, policies that directly aim at reducing land prices should not be taken. On the other hand, if bubbles exist in land markets, market prices of land will differ from their fundamental values. Current land prices would not be a proper signal for allocating the savings of individuals to the best possible investment uses, if these skewed land prices have an important affect on resource allocation. Public policies, including tax policy, might be

designed to attempt to rid the markets of bubbles. Section 3 will address this issue.

Economists' analytical and statistical tools, however, are yet inadequate for studying the possibility of bubbles. Alternatively, noting that the salient feature of the land problem in Korea is chronically high land prices, which implies the existence of structural factors, we will attempt to show that the land problems in Korea may be fundamentally rooted in the peculiar economic order, a centrally-administered economy. Based on the analysis, to solve the land problems, section 4 will suggest a proposal for fundamental economic reform from the centrally-administered economy toward a genuine market economy, including financial liberalization, land tax reform and reform of land-use control, and section 5 will suggest the basic directions for land tax reform. Finally, section 6 will suggest future research issues.

## **2. Land Problems in Korea**

Since the mid-1960s, the Korean economy has experienced land price inflation of 10-year cycles three times, as shown in Figure 1-1. While it is not possible to construct aggregate land price indexes for total Korean land, the Korean Appraisal Board has conducted Land Price Surveys in urban areas since the 1960s. Additionally, the Ministry of Construction has conducted Land Price Surveys across the country since 1975.<sup>1</sup> Land prices have risen quite rapidly as shown in <Table I-1>. The land prices for Korea's 12 largest cities increased 791 times between 1962 and 1993, while GNP in current prices increased only 679 times. This represents a compound average annual growth of 21.5 percent. Part of this extraordinary gain is, of course, the result of inflation. In 1993, the wholesale price index was about 21.1 times its 1963 level, representing an average com-

---

1. The increase rate of land prices, estimated by the Ministry of Construction, seems to be underestimated by the factor of 5.6, when compared with two aggregate land values in 1975 and 1988, estimated respectively by Mills/Song(1979) and the Korea Land Development Corporation(1989).

pound inflation rate of 10.2 percent. But this data implies that the average real rate of return to land holdings was 11.3 percent in urban Korea during this 31-year period. This return is in addition to the return in the form of annual rents that would be paid for the use of the land. Thus, holding urban land must have been one of the most profitable investments in Korea during the period of very rapid growth since 1962.<sup>2</sup>

The situation of high land prices in recent Korean history can be highlighted by comparing the ratio of the total valuation of land area relative to annual GNP across the countries. Table 2 shows that the ratio was 0.93 in France, 1.08 in Germany, 0.60 in Denmark and 0.80 in Belgium in 1977 (Boone, 1989, 1990); it was 1.58 in the United Kingdom, and 0.92 in the United States in 1985. Thus, the ratio in most countries was around 1.0, but Japan and Korea are outside the ratio, the ratio in Japan was 2.88 in 1985, 6.0 in 1988, and the ratio in Korea was estimated to be 1.7 in 1975, 9.1 in 1990 and 6.4 in 1993 (Lee, 1992).

The resulting high land prices are undesirable for the following reasons:

(1) Decent housing in large metropolitan areas becomes much less affordable: both quality and quantity of housing are not adequate in Korea. The high cost of housing in Japan is well known. The price of a typical new home is about eight times greater than the annual income in Japan. Because the high cost of urban housing is largely due to the high cost of land, the land problem is synonymous with the housing problem.

The average price of residential land in six large Korean cities was 499 thousand won per square kilometer, or 3 million dollars per acre in 1988. This is certainly much higher than the average price of urban residential land in the United States. A traditional urban single-family Korean home might be on a plot of about 100 p'yong. The value of such a plot was about 165 million won or 240 thousand dollars in 1988. This compares with an average income of about 5.4 million won (average taken from data in six large Korean cities). The figures imply that the residential plot is worth approximately 30 years income. This imbalance led to reduced rate

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2. See Lee(1994) for a descriptive study on the historical development of land problem in Korea.

of private saving, mostly aimed at buying their own homes; the workers, even white collar workers, find themselves unable to buy their own homes, leading to a lower work ethic;

(2) Cost of infrastructure increases significantly due to the increased cost of land acquisition. Thus, astronomical land prices could sabotage many government projects for infrastructure, and result in sharp increase in transportation cost;

(3) Cost of production in Korea increases, thus lessening the growth potential of the economy;

(4) Distribution of income and wealth worsens as only those who own land receive windfalls.

The distributional implication of land price inflation in Korea is particularly concerning. Land is much less unequally distributed than any other important asset in most western societies. This was true in Korea until the early 1960s. Most farmland was in the hands of owner-operators, due to land reform. Most of the housing was owner-occupied. Land was more widely held than financial assets, including corporate assets. As such, rapid increases in land values had the effect of decreasing the concentration of wealth ownership.

The situation, however, has dramatically changed. Now the ownership of land in Korea is highly concentrated amongst a few wealthy owners. Rapid increases in land values in the process of the cyclical land price inflation have made the rate of return on investment in land be much higher than that of investment in securities, profit in manufacturing enterprises, or any other investment. Land has become the most profitable asset rather than an input to production or for housing.

Everyone, however, can not get large fortunes from investing in land. A relatively large initial investment is often required to buy land (lumpiness). Also land investments require relevant information from the government's regional development plans. Thus only a few who can access both the funding and information, both of which have been owned or controlled by the government, have been able to enjoy large fortunes from land investments. Ordinary persons, however, can not access even institutionalized financing at low interest rates. The government has provided only

minimal financing of mortgages, and this extreme scarcity of institutionalized financing for purchase of dwellings has made it very difficult for families to purchase their own homes. Bank financing has amounted to less than 5 percent of the value of homes purchased in urban areas. Housing development has been mainly a responsibility of private enterprise that relies on its own financial resources. As a result, urban landlordism has been widespread.

Land in Korea is owned by three agents: 24.3 percent of the total land is owned by the public sector, and 4.1 percent is owned by corporations, while the remaining 66.1 percent is owned by individuals (10,801 thousand persons). Statistics from 1988 report that the top 5 percent of individual landowners own 65.2 percent of total land areas owned by individuals, and the top 10 percent of landowners own 76.9 percent. Furthermore, ownership of land is concentrated in residential, commercial, and forest-land sectors which are expected to be developed for future urban projects. The top 10 percent of individual landowners own 66 - 82 percent of urban area in the six big cities. This implies that ownership of land is more concentrated in the urban areas where the land prices are higher. The ownership of land is much more concentrated than that of financial assets and the size distribution of income in Korea. Thus, rapidly rising land values since the 1960s make income and wealth distribution less equal in Korea.

In other respects, many of Korea's enormous aggregate land values have been leveraged, inflating stock prices and bank assets. Rapid declines in real estate prices would raise fears of severe economic consequences, and seriously damage the banking system contributing to economic instability as Japan experienced recently. Policy-makers have become increasingly concerned about land price volatility.

< Table I-1 > Annual Percentage Increase of Major Economic Indicators,  
Annual Interest Rates and Balance of Payment

	Major Cities Land Price	GNP Growth	WPI	CPI	Money Supply (M2)	Interest Rate for Deposit	Discount Rate of Comm. Paper	Balance of Payment
1963	na	9.1	20.5	na	7.4	15.0	13.87	-143.9
1964	50.0	9.6	35.0	na	14.8	15.0	14.0	-26.5
1965	35.3	5.8	9.6	na	52.7	30.0	24.0	4.7
1966	41.4	12.7	8.8	11.6	61.7	30.0	24.0	-103.4
1967	43.6	6.6	6.8	10.7	61.7	30.0	24.0	-191.9
1968	48.5	11.3	3.1	10.8	72.0	25.2	26.0	-440.3
1969	80.7	13.8	6.5	12.3	61.4	22.8	24.6	-548.6
1970	29.7	7.6	9.1	15.4	27.4	22.8	24.0	-622.5
1971	33.4	9.1	10.6	14.0	20.8	21.3	22.0	-847.5
1972	7.5	5.3	12.1	11.7	33.8	12.6	15.5	-371.2
1973	5.8	14.0	6.7	3.0	36.4	12.6	15.5	-308.8
1974	18.7	8.5	42.3	24.3	24.0	15.0	15.5	-2022.7
1975	25.5	6.8	26.5	25.4	28.2	15.0	19.0	-1886.9
1976	24.9	13.4	12.2	15.3	33.5	16.2	18.0	-313.6
1977	50.0	10.7	9.0	10.0	39.7	14.4	19.0	12.3
1978	79.1	11.0	11.6	14.5	35.0	18.6	19.0	-1085.2
1979	22.0	7.0	18.8	18.2	24.6	18.6	19.0	-4151.1
1980	17.0	-4.8	38.9	28.7	26.9	19.5	20.0	-5320.7
1981	7.1	5.9	18.8	21.6	25.0	16.2	17.0	-4646.0
1982	5.6	7.2	4.4	7.1	27.0	8.0	10.0	-2649.6
1983	31.7	12.6	0.2	3.4	15.2	8.0	11.5	-1606.0
1984	21.6	9.3	0.8	2.3	7.7	10.0	11.5	-1372.6
1985	7.8	7.0	0.9	2.5	15.6	10.0	11.5	-887.4
1986	6.4	12.9	-1.5	2.8	18.4	10.0	11.5	4617.0
1987	13.9	12.8	0.5	3.0	19.1	10.0	11.5	9853.9
1988	29.8	12.2	2.7	7.1	21.5	10.0	11.5	14160.7
1989	30.5	6.8	1.1	5.2	19.8	10.0	11.9	5054.6
1990	27.0	9.0	7.4	9.4	17.2	10.0	11.9	-2179.4
1991	13.5	9.1	3.1	9.3	21.9	10.0	11.9	-8727.7
1992	-2.6	5.0	1.6	4.5	14.9	10.0	11.9	-4528.5
1993	-8.1	5.6	2.0	5.8	16.6	8.5	9.0	384.6
1994	-0.8	8.0	2.5	6.0	18.7	8.5	9.0	-4530.8

Notes: Balance of payment is current balance in million US dollars.  
na = not available

Sources: EPB, *Korea Statistical Yearbook* (various years); EPB, *Monthly Statistics* (various issues);  
Ministry of Construction, "Change Rate of Land Prices" (various issues); Korea Appraisal Board,  
"Survey of Market Prices of Land" (various issues).

&lt; Table I-2 &gt; International Comparison (1977)

Country	Land Value/GNP	Tax Revenue/GNP	Tax Revenue/Land Value
Australia	0.56	1.42	2.54
Belgium	0.80		
Canada	1.02		
Denmark	0.60	1.10	0.92
France	0.93	0.85	0.45
Germany	1.08	0.40	0.19
Italy	0.70		
Japan (1985)	2.88	1.21	0.39
Japan (1988)	6.0		
Korea (1975)	1.7		
Korea (1990)	9.1	0.35	0.04
Korea (1993)	6.4		
Norway	0.78		
South Africa	0.80		
Sweden	0.53	0.43	0.40
Switzerland	0.88	0.19	0.10
United Kingdom	0.88	3.16	1.80
United States	0.98	3.41	1.73

Sources: Boone (1989), Lee (1992)

### 3. The Causes of Land Price Inflation

Korea is an extremely crowded country. The total area of the nation is about 99,222km with 42 million inhabitants. Its population density consists of more than 427 people per square kilometer, and is greater than any country with at least four million people, except for Bangladesh and Taiwan. Korea, like Japan, is a mountainous country where only about one fifth of the land is flat enough for agriculture or urban uses. Belgium and the Netherlands, on the other hand, with comparable population densities, are flat, and most land there is suitable for both agricultural and urban uses.

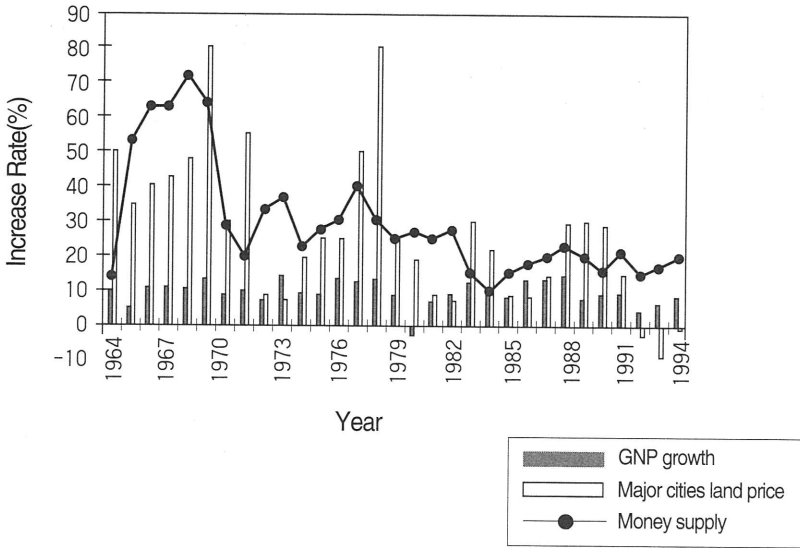
The total land area in Korea is comprised of forest land (66.4 percent of total land area), agricultural land (22.2 percent), and other uses including water surfaces (7.7 percent). This leaves only 3,700 km, 3.7 percent of the total area, for urban uses such as residential, industrial and public.

Economically valuable land uses include 1,854 square kilometers of residential area (1.8 percent of total land area), 188 square kilometers of industrial land (or 0.2 percent of the total land area), and 1,966 square kilometers for public land for roads, parks and schools, etc. (2.0 percent of the total land area).

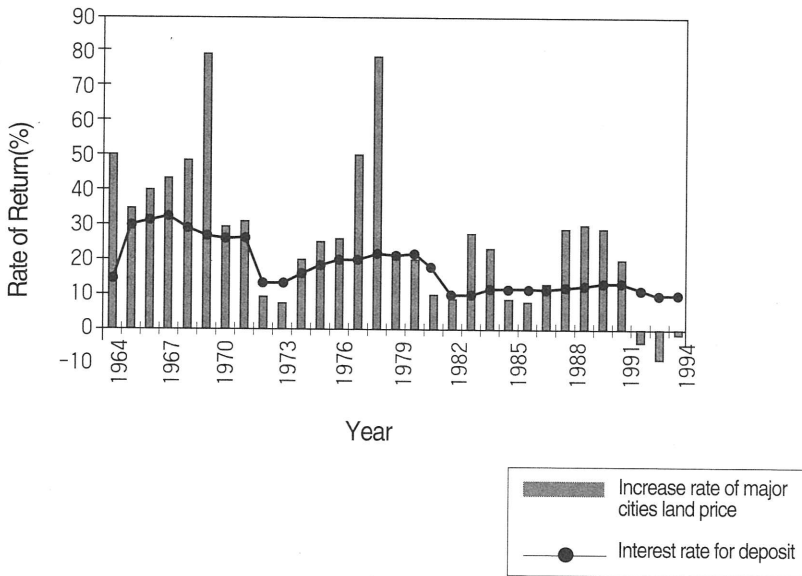
Land is an extremely valuable resource in a crowded, rapidly developing and urbanizing country like Korea, and its price is often correspondingly high. Therefore, it is important that land is used efficiently. Market clearing prices in such circumstances are valuable to ensure that land is devoted to its most valuable use. High land value is a signal to view land as a scarce resource. But, the relative scarcity of land is not a complete explanation for the astronomically high land values in Korea. It is also worth noting that the residential area is just 1.8 percent, and the factory sites only 0.2 percent of the total land area in Korea.

A shortage of these areas triggered land price inflation. Furthermore, half of forested areas have slopes under 15 degrees making it suitable for conversion to urban uses.

< Figure I-1 > Economic Growth, Money Supply and Land Price



< Figure I-2 > Rate of Return



### *A. The Market Fundamentals vs. Speculative Bubbles: A Survey*

The basis of many of the problems is not high land value itself, but whether the current excessively high levels of land prices in Korea can be explained by the fundamental elements of the market or led by speculative bubbles. When land markets are driven not by economic fundamental but by simple expectations of future capital gains, the price may be bid up sharply to the point that they no longer reflect the economic realities efficiently. When prices reflect simply over-exuberant expectations, the market function in allocating space among competing uses breaks down. There have been hot debates focusing on the plausibility of the bubble theory of land prices in Korea and Japan<sup>3</sup>.

If investors in the economy are neutral to risk, and if they discount future utility at a constant rate  $i$ , then, in an equilibrium of efficient asset market, the following arbitrage condition holds:

$$P_t(1+i) = E_t(R_{t+1} + P_{t+1}) \quad (1)$$

where  $P_t$  is the price of the plot in year  $t$ ,  $E_t$  denotes the expectation operator conditional on information available to investors at time  $t$ ,  $R_{t+1}$  and  $P_{t+1}$  is the rent and the price, respectively, anticipated on a plot in year  $t+1$ , and  $i$  is the interest rate. The market fundamentals price can be derived from equation (1), that is, the current land price equals the expected present value of all anticipated future rents from the land discounted at an appropriate interest rate:

$$P_t^* = \sum_{t=1}^{\infty} \frac{E_t(R_t)}{(1+i)^t} \quad (2)$$

---

3. See Noguchi(1994), Mera(1995) for Japan; Suh and Kim(1993), Park(1993) and Lee (1992) for Korea.

If the anticipated rent,  $R_t$ , is a constant  $R$  over time, this formula reduces to  $P = R/i$ . It is sometimes observed that land values are very high relative to land rents at the time. In rapidly developing countries, productivity of land and other inputs increase rapidly. Anticipated future increases in land's productivity becomes capitalized in the land price, and the price becomes large relative to current rent. Thus, if  $R_t$  grows at the constant rate of  $g$  over time, the fundamental valuation equation reduces to  $P = \frac{R}{i-g}$ . The long-run upward trend of nationwide land value in terms of the ratio to GNP in Korea partly reflects a long-run increase in land productivity brought about by the land use conversion from rural to urban use and by the accumulation of human and physical capital. Given the effective land value tax rate with  $t$ , the equation reduces to

$$P = \frac{R}{i+t-g} \quad (3)$$

Equation (2), however, does not give the only mathematical solution to equation (1). The following equation, denotes that the market price be the fundamental price plus a bubble ( $B$ ), also satisfies equation (1)

$$P_t = P_t^* + B_t \quad (4)$$

as long as the bubble is expected to grow at the rate of interest,

$$B_t(1+i) = E_t(B_{t+1}) \quad (5)$$

The central issue is whether fundamentals or a bubble drove the land market upwards. Partial and general equilibrium arguments rule out bubbles, often relying on an extreme form of rationality. Often bubbles are ruled out because they imply some violation of rationality, such as non-negativity of prices or the bubble becoming larger than the economy. As Blanchard and Watson(1982) noted, however, it is conceivable that the probability is so small, or the future is so distant that it is simply ignored by

market participants. It was shown that there are circumstances under which bubbles may exist, when investors have finite horizons.

One may be tempted to determine empirically whether a bubble exists or not in a land market. As is frequently stated, however, the empirical test to detect the presence of bubbles in land market is an impossible task. The bubble is defined to be the price which has significantly deviated from the price derived from the fundamental valuation equation. But, in theory, many rational expectations model have an indeterminate aspect, as explained by Brock (1974) among many others: when the current price depends on the expectation of the future price and the expectation of the future price depends on the current price, the simple theory cannot determine the market price.<sup>4</sup> In empirical studies, a major problem is that none of the two parameters in the land price equation (the expected rate of increase of rent, and the expected interest rate) is directly measurable.

Many economists have tried to explain the high land value over GNP in Korea and Japan by the fundamental valuation equation (3), ruling out speculative bubbles. The aggregate land value-GNP ratio (as a proxy of the price-rental ratio) will be high when the expected rate of economic growth is high, the real interest is low, or the effective land tax rate is low. Boone (1989), for example, concludes that the fact that Japan's land value relative to GNP is nearer to three in 1985 is easy to justify by her higher historical economic growth rates and lower effective property tax rate. Frankel (1991) justified Japan's high ratio by the higher expected rate of economic growth and the lower real interest rate. Both arguments, however, have difficulty explaining why the Japanese price-rental ratio has risen so rapidly in the 1980s compared to the 1960s when today's expectations of future economic growth are so much lower and observed real interest rate probably higher.

Noguchi (1989, 1994) observes that the price/rental ratio is much higher in Tokyo than other major world cities, and concludes that about half of the Japanese land price is a speculative bubble, and that the demand for land is based on a self-confirming expectation of future capital gains. But

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4. Flood and Hodrick(1990).

Ito (1989) argues that Noguchi omits the possibility that the expectations of rising land prices could be correctly based on fundamentals. Noguchi (1992), however, uses the fact that the land price in Japan started to fall sharply since 1992 as a proof of his assertion.

To explore the existence of bubbles, the econometric models consider the possibility that the price of land may not simply reflect its market fundamentals but may also include some bubble elements. Suh and Kim (1993) ran a regression of real estate prices on a set of macroeconomic variables and concluded that the land prices in Korea include some speculative bubble; but Park (1993) disagrees, arguing that the model may be mis-specified.

Thus the debates are far from being conclusive. Judging whether a price bubble or market fundamentals determine current land price is a difficult problem. It seems difficult, however, to explain the exceptionally high ratio of aggregate land value to GNP, and, moreover, the decrease in nominal land prices in Korea since 1992, based solely on the fundamental elements of the market. While bubble theories explain the rapid increase of land prices during a real estate boom, economists have not yet been able to construct good models of how speculative bubbles start or the causes for collapse.

In this sense, the debates so far may be superficial and sometimes careless. Neither bubble theory necessarily assumes that participants in the land market behaved irrationally nor, as argued by Mera (1995), implicitly rejected the free market as an allocator of land. It was once thought that rational expectations would keep asset prices in all markets in line with market fundamentals and that bubbles were an evidence of irrational behavior. Blanchard and Watson (1982) among many others, however, rigorously show that asset price bubbles can be created by fully rational investors.

The important cause of creating a bubble and its persistence in the land markets in Korea appears to be rigidity in the asset markets due to heavy regulations and controls by the Government. That is, the land problem may be caused by government failure rather than market failure. The cyclical land price inflation in Korea may be considered to be a symptom

of the distortion of the underlying economic structures enforced by Government control<sup>5</sup>. Section C will make an attempt to show that the land problem in Korea is rooted in the peculiar economic order where a state of disequilibrium persisted over 30 years. Before resorting to the structural factors, and while an econometric resolution of the question is unlikely (Flood and Hodrick (1990)), we will make an attempt to test bubbles in the following subsection.

### *B. An Econometric Test*

While the available data is small and very limited, we will use data in Table 1 to implement the theoretical price bubble model described in equation (4). Three major econometric methods for the bubble test are proposed and implemented on the data for German hyperinflation, exchange rates and stock prices in the literature: Flood and Garber (1980)'s price-level bubble tests; Shiller (1981)'s volatility test; and West (1987)'s specification test. The latter two methods can not be applicable to our case, because any reliable data on rents is, as usual, not available. Hence we will attempt to identify, estimate and test for a bubble process, using a variant of Flood and Garber's method.

A primary problem with the bubble tests is that they specify a set of market fundamentals and then ascribe any leftover price movements to a bubble. So one may perceive a bubble only because the model was not correctly specified. Indeed, the very notion of a bubble can make no sense in the absence of a precise model detailing the market operation. Without such a model, it is impossible both to define market fundamentals and to isolate the trajectory characteristic of a bubble. Tests for the existence of a bubble require correct specification of market fundamentals. Bubble tests examine a composite null hypothesis of no bubbles and correctly specified market fundamentals.

As Diba and Grossman (1988) show, bubbles in real asset prices can never be negative. From equation (5), a negative bubble at time  $t$  would be

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5. See Lee(1993) and Lee(1995) for detailed discussion on this issue.

expected to grow more negative over time. From equation (4), this implies that market land price would be expected to be negative within finite time, since the market fundamental price cannot grow that fast. Since you can freely walk away from your investment in the land market, the land price cannot be negative. Hence, negative bubbles are inconsistent with rational expectation, and only positive bubbles can exist if a bubble ever existed. Equation (5) implies that, if bubbles exist, they must be expected to grow at the real rate of interest. Thus, the existence of a positive price level bubble implies that land price inflation and its higher order change must be accelerating through time. This is a very strong restriction on the data.

The equation we estimate is motivated by equation (4) and assumed that a nonstochastic bubble process infects the land price, and is specified as follows:

$$p_t = \beta_0 + \beta_1 gnp_t + \beta_2 i_t + \beta_3 m2_t + D_1 B_0^1 (1+i_1)^{t-2} + D_2 B_0^2 (1+i_2)^{t-10} + D_3 B_0^3 (1+i_3)^{t-23} + u_t \quad (6)$$

where  $P_t$ ,  $gnp_t$ , and  $m2_t$  are, respectively, the annual percentage, increase rates of real land price in major cities, real GNP, adjusted by the whole price index, and money supply (M2).  $i_t$  is annual real interest rate for time deposit, adjusted by the wholesale price index. Note that we allow the real land price to increase as the economy grows. Since the interest rate for time deposit in Korea has been controlled by the Government, we add the increase rate of money supply as an independent variable to supplement the variable for interest rate. The parameters  $\beta_1$  and  $\beta_3$  measure the elasticity of the real land price with respect to GNP and money supply, respectively.

We investigated the existence of a growing bubble of three different possible periods: 1965-69, 1973-78 and 1986-89. To do this we multiplied each bubble term by a dummy variable whose value equaled one for the years of possible bubbles and zero for all other years. This model predicts

that real land price level bubbles must explode at the average real rate of interest during the possible duration of each bubble. Consequently, the bubble process satisfies the equation (5), and a no bubble hypothesis is the coefficient restriction that the initial bubble  $\beta_0^j = 0$ . We assume that  $u_t$  follows a random walk.

The estimation result is reported in Table 3. Preliminarily, we estimated the equation without the terms of a bubble (model 1). The equation fits reasonably well with the  $R^2=0.548$ . All coefficients are significant at the 5 percent level. The signs of the coefficients for the annual growth rate of GNP and money supply appear reasonable given equation (2), but the real interest rate is opposite to the prediction of equation (2). The elasticity of land price with respect to GNP is estimated to be high: 2.147; but that with respect to money supply is estimated to be low. When bubble terms are introduced, however, the statistical significance of both the output and liquidity effects disappear.

The results are mixed with respect to testing for speculative bubbles: in model 2, the quantity  $B_0^1$  and  $B_0^2$  are significantly different from zero; that is, price-level bubbles existed in the periods of 1965-69 and 1973-78. But the quantity  $B_0^3$  is not significantly different from zero; that is, only market fundamentals drove the land price inflation in the period of 1986-89. We also tested the joint null hypothesis of  $B_0^1 = B_0^2 = B_0^3 = 0$ . The joint null hypothesis is rejected at 1 percent significance level. Therefore, the evidence rejects the hypothesis that only market fundamentals drove the land price inflation in Korea. Recall that we allowed only for a particular type of explosive bubble, usually called a rational bubble. This rational bubble is hard to rule out in an economy of rational agents with finite time horizons. Our evidence supports the hypothesis that land prices in Korea were, in part, driven by self-fulfilling elements in expectations in some land-boom periods.

On the other hand, some may argue that this econometric test has not yet demonstrated that bubbles are present in the data, and mis-specification of the model or alternative market fundamentals seems a likely explanation of the findings. Actually, our estimated coefficients and the hypothesis test are not robust to alternative specification of market fundamentals. For

example, in model 3 without the term for money supply, the quantity  $B_0^2$  is not different from zero at 10 percent significance level, but the joint null hypothesis  $B_0^1 = B_0^2 = B_0^3 = 0$  is still rejected at 5 percent significance level. Thus, the bubble theory of land prices is neither completely accepted nor completely rejected.

< Table I-3 > Regression Results of Land Price Equation

Model	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	$B_0^1$	$B_0^2$	$B_0^3$	$R^2$	D.W
1	-19.167** (9.295)	2.147** (0.851)	0.644** (0.305)	0.424** (0.206)				0.548	1.408
2	11.351 (14.313)	0.941 (0.766)	0.625* (0.321)	-0.721 (0.477)	29.105** (10.290)	23.339** (10.291)	4.687 (8.564)	0.697	1.521
3	-6.694 (7.905)	1.322* (0.765)	0.423 (0.297)		16.281** (6.050)	15.074 (9.181)	4.878 (8.678)	0.667	1.561

Notes: 1) number of usable observation = 31,

2) standard errors in parentheses.

3) \*\* and \* denotes that the estimated coefficients are not equal to 0 with the 5% and 10% significance level.

### C. Centrally-Administered Economy

As it may be currently impossible to determine econometrically whether a bubble has been present in Korean land market, we will be content with making best efforts to identify a plausible answer. It is our contention, partly based on the econometric analysis above, that a bubble may be intimately connected with the fundamentals: a change in fundamentals may have initiated the booms, but fundamentals probably did not sustain them,

and the self-fulfilling prophecies of market participants drive the land prices. Current state of the art economic theory, however, does not explain the following two major issues: what gets the self-fulfilling prophecies started, and what causes bubbles to collapse or persist. Noting that the salient feature of the land problem in Korea is chronically high land prices (which implies the existence of structural factors), we will investigate the questions in the structural factors in the Korean economy. Land price inflation can emerge when demand for land increases rapidly while supply cannot meet the demand. In this subsection, we will focus on the underlying economic structure which causes the demand for land to increase artificially, and simultaneously restricts the supply of land for urban uses.

The primary causes for land price inflation in Korea can be found in the market fundamentals: apparently, the basic reason for the rapid increase of land prices in Korea is that demand for urban uses has grown rapidly due to rapid industrialization and rapid urbanization. Over the past thirty years, Korea has undergone a rapid transition from an agricultural-based economy to a modern industrial society. Rapid income growth undoubtedly had a significant effect on land demand. This process has also been accompanied by a major shift in the population from rural to urban areas. In 1960, just over a quarter of population lived in cities. Today, almost three quarters live in urban areas. Moreover, Korea's spatial development has been characterized by a high population concentration and economic activity in two major cities - Seoul and Pusan - and the corridor between them, including cities such as Taegu, Inchon and Taejon. In accordance with rapid urbanization, the demand on the limited areas for urban uses has been growing rapidly for industrial sites, residential sites, and public sites including roads and schools. Thus, the discrepancy between demand and supply accounted for the initial increase of land prices. Various public investments in construction of industrial sites, construction of roads, and development of cities create development profits in the form of increased land price in the relevant area and its vicinity. Rapid increases in land prices and the creation of development profits generated by public investment become potential factors in speculation. When other

economic factors including monetary expansion and inflation are added, land price inflation begins to appear.

If supply and demand in urban land market had been flexible, however, the land price inflation would not have persisted for such a long period. Thus, more fundamental causes of the land price inflation can be found in the peculiar economic order in Korea (and partly in Japan and Taiwan) which led to rigidity in the asset markets. Eucken (1952) classified two ideal types of economic order: a genuine market economy and a centrally-administered economy. Korean economy in the past three decades is neither a genuine market economy nor a typical command economy: it can be characterized by a market economy with many elements of a centrally administered economic order in the core, copied from the Japanese version in the 1940s of Nazi economic order. According to an Eucken's proposition, planning authorities under a centrally-administered economic order attempt to maximize the power by investment (and dramatic economic growth rate, or victory in war including trade war). For this purpose, the Korean Government has monetary policy take a leading role, and fiscal policy a supporting role.

Monetary policy has exerted an important influence on land markets. The Korean government has controlled the financial sector in general and the banking sector in particular in order to direct the flow of financial resources intensively into the planned or targeted sectors. These sectors include export industries or heavy and chemical industries which have been in the process of rapid industrialization for the past 30 years. Banks have functioned as an extension of government economic policy. Interest rates are often controlled by the government at a much lower level to promote private investment in the planned sector, leading to a persistent excess demand gap in the monetary market, which, in turn, leads to credit rationing by the government. Money creation at the central bank has often been used to mitigate the excess demand pressure in the money market, which leads to permanent inflation. Also, interest rate control makes debt financing cheaper than equity financing for the investment of big corporations, which causes larger conglomerates to be reluctant to make the information on management open for the ordinary investors, which, in turn

deteriorates the problem of informational asymmetry in the stock market. As a result, the capital market cannot be sufficiently developed as a drawing market to attract ordinary savings. Given the artificially low rate of return on the bank deposits and unfair game in the stock market, the excess liquidity in the economy with high saving rates above 30 percent have naturally flowed into the real estate market, bidding up land prices. Strong correlation between the increased liquidity and real estate boom can be observed in the trends over 30 years, as in <Figure I-1>. In particular, trade surplus (that is, by definition, equal to the difference between saving and investment) always led to real estate boom, as experienced twice over the 1970s and 1980s, which resulted in aggravating housing affordability - a paradox of thrift under the system of high saving rate, and regulations on international trade driven by the obsession with competitiveness<sup>6</sup> that is inherent to a centrally-administered economic order.

This governmental control of the financial sector also contributed to the unequal distribution of land ownership. The Korean government heavily rationed bank loans for the planned sector. The interest rate for this type of loan was much lower than the prevalent one in the unregulated capital market, and the amount was more than enough for the planned investment. Those who got such loans often used part of the capital for the investment on land and reaped windfall gains from land price inflation. In addition, land has been a major source of collateral for loans from financial institutions, as, under this system, the government insists that banks make corporate loans with little or no regard to credit history or ability to repay. Individuals and corporations tend to seek to own land for securing such privileged loans. Land became one of the most profitable investment alternatives with the least amount of risk in Korea. This opportunity, however, is open only to those who can afford the lumpy

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6. See Krugman(1994) for noting that competitiveness is a meaningless word when applied to national economies. See also Friedman(1962) for noting the fallacy in the popular argument against free trade(pp. 71~72)

fund required for the investment on land. The severe regulation of the Korean financial sector has limited unprivileged firms and individuals to take advantage of the arbitrage opportunity between the low interest rate and the high expected future returns to holding land. At least nominally, the use of the privileged loan was strictly monitored by the Government, and the firms can not use these funds to freely engage in large-scale purchases of land. Such monitoring and regulation is, in fact, beyond the Government control and becomes less effective as the economy becomes larger and more complex. Instead, rent-seeking has been widespread around the privileged bank loan. It is typical for many Korean banks to demand "compensating balances" from the consumer firms, adding to the firms' cost of capital the spread between the deposit rate, and the return from investment. As a real estate boom approaches a peak, the "compensating balance," and the other hidden costs, narrow the scope of arbitrage opportunity of which to take advantage. As a result, such mechanisms as the financial repression, along with other closely-related government policies such as permanent inflation and wide-spread arbitrary government intervention and regulation, accelerates the concentration of land ownership, and worsens the unequal distribution of income and wealth.

When the tax system is deficient of appropriate measures to recapture pecuniary externalities of public projects, that is, gains from land value increases, the benefits of publicly-created land values are privately appropriated. A pecuniary externality is a kind of income transfer from general taxpayers to owners of land located near public projects. Also, it has affected the efficiency of resource allocation: the public sector provides various types of infrastructure, which lead to increases in the land value, which in turn forces the public sector to increase their spending and budget in order to acquire land for public projects. As a result, public sector can not provide infrastructure at an optimal level. This has been the case in Korea since the late 1960s. Such prolonged and deficient land-related taxes may also have been caused by the centrally-administered economic order, under whose direction the planning authority uses tax policies to measure and encourage large-scale private investment.

The Government, alarmed by land-boom in the late 1960s, enacted the

Anti-Real Estate Speculation Law to reduce speculation by levying a 50 percent tax on unearned increments in Seoul and Pusan and in some specified areas in 1967. Furthermore, owing to political pressures, this tax was levied only on land under large buildings (commercial or office building) in those regions. In 1973, the Government enacted the real estate capital gains tax on a realization basis under the income tax, which is broader in concept, and levies a 50 percent tax on capital gains on both rural and urban land. Allowance, however, is made for appreciation in line with the wholesale price index, and only gains in excess of this are subject to the tax. It was hoped that this tax would reduce land speculation and reduce the flow of funds into real estate markets.

The real estate capital gains tax had a high tax rate between 40-60 percent. However, it has been simply a "paper tiger"--the tax base has been seriously eroded due to wide loopholes and severe undervaluation. Annual tax revenues from real estate capital gains tax were very small relative to the large capital gains: the average effective tax rate (tax revenue over the capital gains accrual on land) was 3 percent or under until 1989. Since 1990 the Official Land Value for the value assessment of real estate for tax purposes shows tax revenue increasing dramatically.

The property tax on land has remained a system which reinforced speculation and misallocation of land. Scarce land, on which urban-based families and industries relied for expansion in mountainous country, was taxed at only 0.02 percent of the market value of land until 1989. Although the current effective rate was raised to be 0.04 percent through the introduction of the Comprehensive Land Value Tax in 1990 and the raising of the assessment ratio for the tax, it is still low relative to other advanced countries. The incentive, then, was for landowners to keep their land ostensibly, while their properties appreciated inexorably in value. Then, those who mistimed their sales, having failed to off-load properties before the peak of the cycle - were encouraged to hold onto their land to avoid the real estate capital gains tax. The Korean government planned to raise the assessment ratio for the purpose of determining the Comprehensive Land Value Tax to attain 60 percent of the Official Land Value, which itself is about 70-80 percent of the market price, until 1996.

A centrally-administered economic order, as Eucken (1952) noted, tends to give rise to the centralization of economic activities and population in the capital region. This is because business success heavily relies on the decision of the planning authority under a centrally administered economic order. It is beneficial to locate in the capital region for economic activities because valuable permits, licenses, privileged loans and information can be obtained more easily through personal contact with planning authorities. As a result, uneven land use patterns across regions and excess growing of demand pressure for urban land on limited capital region has been brought about.

On the supply side, Korea is the fifth most densely populated nation in the world. Yet, despite its density, only 1 percent of Korea's land is used for urban housing and less than 2 percent of that is devoted to urban uses. Part of the reason for this, of course, is that much of Korea's land mass is mountainous and therefore difficult to build upon. Nevertheless, one would expect Korea's rapid income growth to call forth substantial increases in the supply of urban land. It seems to be clear that, despite topographical constraints, there is not an absolute shortage of land in Korea.

Furthermore, the Government of Korea exercises severe control over conversion of land from rural to urban uses. Renaud (1990), using supply elasticity estimates of Hannah et. al. (1989), makes a convincing case that "unnatural barriers" are the basis of Korea's internationally exceptionally inelastic supply of housing. Specifically, he points out that Thailand has a much higher supply elasticity than Korea and posits that the difference is largely a function of Korea's far more restrictive land use policies. Korea's inelastic urban land supply is not primarily due to natural constraints but man-made constraints to the efficient operation of the market.

As urban areas grow and decentralize, land must be converted from rural to urban uses. It is inevitable that governments become involved in this process because of the need to provide infrastructure in the form of roads, schools, sanitary facilities, and so on. The government, however, has regulated development of new areas on the urban fringe, and the slowness in approving new sites has contributed to the shortage and high price of

housing sites.

Until the late 1970s, Korea's main government program for rural-urban land conversion had been the Land Readjustment Project (LRP). Under this program, undeveloped sites near the urban fringe were designated as development sites. Development sites may be chosen by an 80 percent vote of landowners, but generally they are designated by a city government or by the national government or the Korean Housing Corporation. The essence of the Land Readjustment Project is that public sector infrastructure costs are financed by a tax under which part of land on the site is paid to the government. Usually, about half the land on a site is taken by government. The Land Readjustment Project has been used extensively during the period of rapid urbanization until the late 1970s. The program is made viable by the fact that inclusion in a project causes land values to rise substantially. Thus, the remaining 50 percent of land left to the landowners is worth considerably more after completion of infrastructure than the 100 percent of their land before designation as a development site.

In Korea, for the most part, it is not legal to develop land for urban uses without being included in a Land Readjustment Project. Thus, inclusion in a project raises land values because infrastructure is supplied, and also because development permission is itself scarce and therefore valuable. Land values rise by more than the value of the infrastructure because development land is kept scarce by permitting too few projects. This system, with a system of rigid land use controls, led to too little development with rising land and housing prices. The rapid rise in land prices and subsequent land speculation around the project frequently appeared. The few development projects that resulted from this policy may be partly due to rent-seeking of bureaucracy, and partly due to the government's intention to use the policy as a measure of controlling the private sector.

Rather than loosening the regulatory framework by introducing land tax reform, the Korean government chose the way of public domination in land development. Since 1980, the government-initiated residential land development method has replaced the LRP for urban development. This so-called public development (or government-led development) takes land ownership away from existing landowners by a total purchase. Over the

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past decade over half of the land developed was publicly developed, and the share has increased markedly in recent years. For most of the 1980s, the public sector has been directly responsible for more housing starts than the private sector, and the share is still high. The public sector also effectively controls private sector construction through a stringent regulation. At first glance, as compared to the land readjustment method, the government-led residential land development method has several advantages: (1) the method allows for an ideal type of development and can be implemented effectively; (2) individual lots can be sold for relatively low prices to the demanders; (3) it is efficient, given the fact that it takes 3 to 5 years on average for completion whereas the LRP often lasted over 10 years.

Development plans are formulated by a public institution such as the Korea Land Development Corporation (KLDC) and developments take place accordingly. The Korean Land Development Corporation has tremendous market power because of its regulatory advantage including eminent domain. Once lots are subdivided and partitioned, they are either sold or leased to actual demanders. But under this system, and because of excess demand for and low KLDC prices for land, only a few construction firms have received land. Thus, such firms would make excess profits while overall market response would improve only slightly. So government, again, controlled the prices at which new apartments can be sold. Eventually, a few lucky apartment purchasers received big windfalls which tend to make investments on new apartments profitable, and thus real estate speculation became widespread, resulting in raising the speculative demand and the price. Thus the policy that intends to reduce the apartment price actually becomes self-defeating as the result is that the price is raised.

This large gain, again, led to allocation by lottery and the use of below-market "housing bonds," a sort of tax to recapture part of the subsidy or the economic rent. Home mortgages are financed almost entirely by savers who someday hope to have a chance to participate in the new apartment lottery. As was described above, interest rates, including mortgage interest rate, are so heavily regulated that conventional depository institutions play

a small role in Korea's mortgage market.

One of the motivations underlying the dramatic policy switch from LRP toward government-led development was public sector recapture of whole windfalls generated in the process of land development, the part which had been appropriated privately under LRP and that was regarded as a major drawback of LRP. The most serious problem with this method, however, is related to public acquisition of private land. The difference in land prices before and after the project is substantial, and the original landowners do not feel justly compensated for their properties, and so resist the development. This fact suggests, again, that development in and out of the project area should be appropriated socially by the capital gains tax for smooth development.

In sum, both financial repression and deficient land taxation as a major windfall recapture device artificially increase the demand for land. On the other hand, the government's severe control over conversion of land from rural to urban uses make the supply of urban land inelastic. With the rapid economic growth and rapid urbanization under such a system, the huge excess demand gap in urban land market appears periodically, the pressure of which leads to a rapid increase of urban land prices, resulting in huge capital gains. The rapid increase of urban land prices, in turn, causes an increase in the prices of rural land which is a substitute of urban land. But the interaction between urban and rural land prices might be stable because the price elasticity is likely to be higher than the cross price one.

As the land prices rapidly increased in land markets, it was natural for the expected rate of return on real estate to be far higher than the interest rate, the rate of profit in manufacturing enterprises, and/or the rate of return on securities. The expectation raised land speculation. Land speculation again accelerated the rise of land prices for urban uses in two ways: land speculation booms created speculative demand for land (demand curve was shifted upward), while at the same time land speculation contracted the effective supply of land. Landowners preferred to hold land idle expecting even greater capital gains, forcing the supply curve to shift upward. This vicious circle encouraged land price inflation.

Thus, the extreme government intervention into asset markets results

in a peculiar phenomenon where land speculation is an investment in an asset yielding an unrealistically high rate of return accompanied by a relatively low degree of risk. This contrasts land speculation with speculation in other areas, in which the risk of loss is much greater, for example, in security markets.

#### *D. Bubble*

These repeated cyclical processes naturally formed the myth that land price will always increase and made it widespread among investors. Based upon the myth of land, the speculative bubble emerged then, and raised land prices further in the self-fulfilling fashion. Most Korean people recognize that current land prices are too high to be justified by market fundamentals. They are, though, ready to pay a higher price for the land than the price corresponding to the present value of the rents because they anticipate the price will rise further, resulting in capital gains that offset the low rent price ratio. This anticipation of ever-increasing prices is self-fulfilling and satisfies the arbitrage condition. Koreans were eager to buy as much land as possible, and hold it as long as possible on the expectation that they can resell at a higher price to somebody else who will buy them for the same reason. The case looks like the environment, described by John Maynard Keynes (1936), in which speculators anticipate "what average opinion expects average opinion to be," rather than focusing on things fundamental to the market. When capital gains are anticipated, land values can grow at an accelerating rate.

Various economic models of bubble theories have been developed. While any single model cannot fully explain the land price inflation cycles in Korea, a combination of some models help understand them to some extent. Theory is helpful in thinking about whether bubbles can exist in rational markets. Tirole (1985) shows that, in a Diamond model, if the interest rate is less than the growth rate (i.e. if the economy is dynamically inefficient), bubbles can exist as long as they are not too large, and capital accumulation is reduced as part of saving goes to buy the bubble asset. Korea may be an appropriate comparison because the interest rate, as

noted above, has been controlled by the Government far below a market clearing level.

Blanchard and Watson (1982) posit that bubbles are probably more likely in markets where fundamentals are difficult to assess, such as the land market in a rapidly growing economy. The market fundamentals for urban land are factors affecting future flow demand and flow supply. These fundamentals are difficult to assess because land is extremely heterogeneous, and become more difficult to assess because of major changes in the Korean economy, at least for the average market participant. While the rapid economic growth and rapid urbanization created a real estate boom, it also made fundamentals more difficult to evaluate, setting the stage for a bubble, and possibly brilliant futures became favorites in the boom even though their fundamentals were difficult to assess. Thus an investor is more likely to base his/her choice of whether or not to hold the land on the basis of past actual returns rather than on the basis of market fundamentals. S/He may hold land at a high price because land has yielded enormous capital gains in the last three decades.

In addition, the overall sophistication of investors was weakened by the influx of new people into the market. In each cycle of land boom, many people, who have never bought land before, entered the market. One notorious group of new investors was women--noise traders. These noise traders buy land based on sentiment or pseudo-signals such as advice of real estate brokers that are not fully justified by fundamentals. Shleifer and Summers (1990) show that trading between rational arbitrageurs and positive feedback traders give rise to bubble-like price patterns.

It seems plausible to conclude that the land price appreciation in Korea was due in part to a speculative bubble, and the bubble component in the land prices is substantial. The decrease trend in even nominal land prices since 1992 adds weight to the interpretation that speculative bubble played a role in the cycle. The average nominal land prices in Korea have decreased by 11 percent between 1992 and 1994, but this fall seems too moderate compared with increase of 178 percent in the boom period between 1987 and 1991 to be interpreted as the breaking of a speculative bubble.

Another issue remains. If the land market in Korea is once locked into an expectation spiral, how long can it go on? The ultimate limit is what investors are willing to pay that are constrained by income, wealth and the ability to pay. As land prices increase, potential investors get screened out and demand must ultimately fall off. Hence it might be argued that the speculative bubbles exist only in the short run, and that they must vanish in the long run. The average nominal land prices in Korea, however, never declined until 1992. How then have, for 20 years, the Korean land value-GNP ratios remained so much higher than those of advanced countries? Shleifer and Summers (1990) argue that as long as uncertainty exists regarding breaking of the bubble, and as long as investors are short-lived and risk averse, a bubble may not be completely eliminated because fundamental and resale risk limit arbitrage, and may persist for a long period of time, even if arbitrageurs recognize the existence of the bubble and believe that it will eventually disappear.

Moreover, bubbles are more likely to persist if the asset, such as land, is neither reproducible nor depreciable.<sup>7</sup> Another possible reason is a stylized fact that real estate prices are sticky downward, as noted by Case (1994): "That is, when excess supply occurs, prices do not immediately fall to clear the market. Rather, sellers have reservation prices below which tend not to sell. But when excess supply exist for a long time as the economy worsens, prices begin to fall more sharply."

A more important reason can be found in the rigidity of asset market in Korea due to the heavy government intervention; that is, savers can't find alternative opportunities for investment in the financial market. Grossman and Stiglitz (1980) show that as long as the transaction cost is not negligible, asset markets cannot be perfectly arbitrated - there is an equilibrium of disequilibrium. The transaction cost in real estate market is inherently high due to the heterogeneity of real estate. Moreover compared to advanced countries, the tax rates of Acquisition Tax, Registration Tax and Real Estate Capital Gains Tax in Korea are much higher, but the holding

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7. See Blanchard and Watson(1982) and Tirole(1985) for more rigorous discussions on bubble.

cost is low because the effective tax rate of annual land holding tax is much lower. Given the heavy distortion of capital market and the high transaction cost, the possibility of persistent bubbles should not be a surprise.

The value of an ever-growing bubble will, at some stage, be too large relative to the economy, and this appears to rule out bubbles in general equilibrium. But this argument is not always correct because the economy itself is growing. The land price inflation cycles in Korea suggest the possibility that the bubbles stop increasing rather than burst at the point that the value of land is too large relative to the economy: land investors who mistimed their sales - having failed to off-load properties before the peak of the cycle - may take a wait-and-see strategy, rather than sell promptly, on the expectation of another land speculation boom 10 years later because of the reasons noted above. Thus, the land prices in Korea have stabilized after the peak, but increased at the rate less than a rate of inflation rather than declining sharply. In other words, the land price bubbles have not burst, but have run out of steam. The sustained rapid economic growth has pushed the land value/GNP ratio (a crude index of affordability) down, and prepared another real estate boom.

### *E. Intervention Spiral*

Thus the cyclical land price inflation was caused mainly by government failure. Still, demand for land was structurely promoted, the supply of urban land was restricted, and price control led to big capital gains promoting real estate speculation. In the wake of the sharp price increase, however, various measures of direct government intervention into land market had been introduced in an attempt to curb real estate speculation. As Eucken(1952) pointed out, regulations invite more regulations, which becomes intrinsic to a centrally administered economy. Korea has adopted this pattern exactly. A general principle of Korea's policy-makers has been to monitor markets and respond to problems, but only to do so in one direction: adding layers of regulation, intervention and control, rather than removing them. Such thinking is based upon a philosophy of construc-

tivist rationalism in the Hayekian sense.

The conventional view is that the heart of the land problems is that land prices are too high; hence, any measure to lower land prices is good. This justified various measures of government intervention. Land price monitoring systems were introduced wherein the price of land transactions must be approved by the municipal government prior to sale. This system is designed to check land speculation. However, if disapproval of a price is feared, the seller and buyer can agree to report a lower than actual price.

These regulations are not only ineffective but counterproductive, as the real causes of land price inflation become the results of market fundamentals aggravated by government failure. Land price inflation is a symptom of distortion in the underlying economic structure. Elimination of this symptom by administrative freezing of land prices cures none of the underlying difficulties and only makes adjustment to them more painful. For example, price monitoring would decrease the supply of land if the perceived acceptable range is too low and, thus contribute to higher prices. If land price inflation involves an extraordinary bubble, measures to decrease speculative demand and/or to increase the land supply will pop the bubble. On the other hand, government directed intervention would make the bubble larger or persistent by restricting supply. If the land price inflation is due to changes of market fundamentals such as strong economic growth, then direct government intervention only induces creative ways to avoid regulations. Direct government intervention can be unfair, too.

Another reason for these regulations to exist is for government to shift the blame for land problems from themselves to a scapegoat, the real estate speculators. As a matter of fact, the Government policy promoted speculative demand and failed to increase supply of urban land. Government control of the financial sector, deficient land taxation as windfall recapture devices, and inelastic urban land supply systems have formed a vicious cycle. The Korean government has intended to control the private sector, especially big corporations in targeted industries, mainly through controlling the banking sector; and then used various tax incentives to cure problems in many markets distorted by government interven-

tions, which, in turn, made land taxation deficient. Deficient recapture device of windfall gains in land market allowed development gain to be privately appropriated, and artificially raised the after-tax rate of return on land, together with the financial depression, and cyclical land speculation boom followed. Again, the possibility of land speculation boom around the development project made the Government reluctant to permit urban land development project, which kept urban land scarce and raised the land prices further.

#### **4. A Proposal for Fundamental Reforms**

Broadly speaking, a policy-maker who feels compelled by undesirable development in the economy to take action for remedying them will have a choice between two completely different approaches: a therapy to cure symptoms versus a fundamental corrective. For a long period of time, Korean policy-makers have tried to cure the most conspicuous symptoms, as illustrated above. It is now clear that this sort of procedure represents a short-sighted and merely ad hoc therapy.

The analysis presented above indicates that the land problems - in particular, high land prices in Korea - are basically caused by the enforced difference in the rate of return between land and the financial assets. This is led by the centrally-administered economic order, based on a constructivist rationalism. We have long since reached the point at which it would be advisable to undertake fundamental measures to overcome land problems and other various economic problems (such as stagnant total factor productivity, the concentration of economic power to a few Conglomerates and widespread corruption) faced by Korea. We should steer our centrally administered economy toward a genuine market economy in Ordo-liberalist sense (Eucken, 1952), based upon a new paradigm of neo-liberalism. More specifically, in order to make the bubble element in land prices in Korea burst, fundamental reform is needed. This will allow asset markets to satisfy efficient asset market or no arbitrage condition.

However, little has been done to change fundamentals by the Korean

Government, particularly the regulatory system. Rather, in response to rising housing prices, political decision have been taken which shift speculative demand downward and shift a fundamentally inelastic supply curve upward from time to time, thus encouraging a speculative boom and burst cycle. As Green/Malpazzi/ Vandell (1994) appropriately pointed out, Korean government policies have been biased to short-run solutions. At best, these policies partially solve a current problem, but at the same time create more fundamental problems. The land problem in Korea, as we have shown above, is a sort of disequilibrium phenomenon caused by the rigidities of asset market due to government control on the one hand, and deficient role of government in recapturing the windfall gains on the other.

In order to dampen land price inflation, it is necessary to both decrease the speculative demand and increase the supply of urban land. In order to decrease the speculative demand for land, it is necessary to induce a portfolio shift from land to other socially productive assets. The rate of return on land has been much higher than those on other assets such as bank deposits, as shown in <Figure I-2>. Thus, the artificial relative advantage of land should be eliminated. This can be done by financial liberalization and land tax reform. In appearance, deregulation in the financial sector had significantly progressed in recent years. Financial consultation meetings between the Governments of Korea and the United States paved a way for increased liberalization and internationalization of the Korean financial sector. In response to pressures from the United States, the Government of Korea partly deregulated the interest rates paid by domestic banks to large-scale depositors, undertook fundamental revisions to the Foreign Exchange Law in deregulating management of foreign currencies, and partially opened the opportunities for foreign securities firms to become regular members of the securities exchange network. Although many regulatory hurdles were removed, the Korean government has been reluctant to allow financial intermediaries to utilize the new freedom to the maximum extent. It still needs to decontrol the financial sector more fully, as even partial regulation appears to have affected the land market in an abnormal way.

The analysis above also indicates that the increase in the land-related

taxes in Korea is necessary for recapturing windfall gains and, in turn, reducing the land price, which will be discussed in the next section.

On the supply side, it is critically important to deregulate the use of land substantially so that the virtual supply of urban land could be significantly expanded by two ways: (1) government should relax controls on land-use conversion, and (2) government should relax controls on the height of building and density. The way to keep urban land values down is to increase the supply of urban land - that is, to approve more projects. The fiscal profitability of urban land development projects in the past shows that developable land is kept scarce, and therefore expensive, by government controls. One of the most important steps the government could take to solve the land problems would be to relax controls on land-use conversion. If some of the land which is now zoned agricultural or greenbelt were released for development, it would exert a downward pressure on land prices. If there is little scope for expanding the supply of urban land, it will be necessary to develop satellite cities outside of the greenbelt areas. Concurrent to reforming land taxes to recapture windfalls as discussed below, the land-use control should be reformed to be more of a zoning system and less a permit system. It will eventually be necessary to disperse industry and settlement across the country.

Land tax reform, and financial liberalization and reform of land use control are intertwined: if one of these elements is poorly designed, the entire structure may be compromised. When land taxes are changed, other land policies such as zoning must be altered to make them consistent with the new tax. Also, correct sequencing of tax reform, financial liberalization and reform of land use is of critical importance.

## **5. Land Tax Reform**

Many land problems have been perceived to have been caused by improper tax policy, or could be cured by a proper tax policy. For cooling-down the land price inflation in Korea, the Government considers taxation as the most important. Our analysis above, however, indicates that taxation is necessary but not sufficient for the purpose, and can not be effec-

tive. This is because the tax variable is infra-marginal in many cases without more fully decontrolling of financial sector and deregulating of the use of land use substantially so that the virtual supply of urban land use could be significantly expanded. On the other hand, our analysis above implies that windfall recapture through land taxes is an important prerequisite for deregulating the land use conversion from rural to urban use.

There are many variations of land tax systems that are conceivable. On designing a new land tax system, it is important to specify just what is wanted from a land tax policy, and what the constraints are. From the discussion above, appropriate objectives of land tax policy in Korea may be summarized in the following.

### *A. Objectives*

#### **1) Efficiency**

An important goal here has been that land taxes should curb land speculation and promote early development of vacant land. A problem with these intermediate objectives is that achieving them may not, in all circumstances, produce an efficient resource allocation. It is not clear that early development is not always a more efficient use of land than later development: some must be reserved for future use. Similarly, it is not axiomatic that a reduction in land prices will mean more efficient resource allocation.

Almost all land tax laws in Korea have provisions designed to levy penalty on vacant or underutilized land. An important argument in favor of these provisions is to reduce speculation and encourage use of land. On the other hand, it would not, in general, be desirable to encourage the immediate development of all land. Many sites need to be held for later expansion of facilities or for denser development not yet justified. Also, in practice, the clear-cut definition of what is underutilized land is impossible. If the definition is too loose, premature and inappropriate buildings may be constructed merely to satisfy the tax requirement. If defined at a rigidly high standard, it may cause undue hardship for many land owners without sufficient liquidity to meet the requirement. Thus, it is desirable

that land taxes should be neutral in their resource allocation effects, including timing and density of development.

Our analysis above, however, indicates that land prices in Korea are likely to contain a substantial amount of bubble, and current land prices would not be a proper signal for allocating resources. Thus it seems to be appropriate to correct externalities by taxing some increases in land value caused by government activities, thereby contributing to make the bubble burst as well.

## **2) Equity**

It was shown above that inequalities in the distribution of income and wealth are increased by the unearned and untaxed increases in land value that accompany rapid economic growth and urbanization. So, it can be argued that a progressive tax be imposed on aggregate land value as well as land value incrementals for redistributing the income from land and providing an incentive to deconcentrate land holdings.

## **3) Revenue, especially for local autonomies**

Strengthening of newborn local autonomy is an objective that occupies center stage in the policy discussions in Korea. The success of a strategy for fiscal decentralization depends on giving local autonomies some degree of financial autonomy. The reallocation of expenditure responsibility and revenue-raising authority to local autonomies in the context of decentralization efforts are therefore issues of utmost importance. A tax base which is natural for local governments is real property. In principle, real estate taxation is an ideal way to finance local public goods. The real estate tax base (that is, the value of real estate), reflects the value of many local public services to the extent that they provide site- or area-specific benefits; and ownership of real estate is much more concentrated than the distribution of income, thus making the tax progressive. The tax base grows rapidly with urbanization and can be objectively assessed. Property tax and development charge may be good candidates for real estate taxation for local autonomy.

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### ***B. Public Concept in Land: a Misdirected Land Policy***

Real estate inflation reemerged and land price soared again in 1988 and 1989. The prices of land have tripled in some areas of Seoul and Pusan within a period of three years. A similar situation has prevailed in the other big cities. The cost of buying a home in big cities rose beyond the reach of most family budgets, including those of the middle class. Previously, price increases tended to concentrate in a few big cities, but now the entire country is affected by them. Much of the speculation involves land earmarked for new development areas.

Instead of reforming real estate Capital Gains Tax and Comprehensive Land Value tax to cope with this problem, three new acts under the name of "Public Concept in Land" were enacted in 1989: the Urban Residential Land Ceiling Act, aimed at regulating residential land held for speculative purposes; the Development Charge Act, which levies a 50 percent charge on betterment profit; and the Excessively-Increased Value of Land Tax Law, which assesses idle land in cases where the land price increases at rates higher than the national average on an accrual basis.

In fact, however, these three acts can be regarded as variants of the existing Comprehensive Land Value Tax and the (Real Estate) Capital Gains Tax which impose a heavier tax on narrow specific tax bases. The Urban Residential Land Ceiling Act is a variant of the Comprehensive Land Value Tax imposing "Excess Holding Charge" on residential land holdings in excess of 200 p'yung (660 square meters) in the six largest cities at the rate ranging from 6 percent to 11 percent of the Official Land Value. The Development Charge Act is an extension of the real estate Capital Gains Tax imposed on developers only. Also, Excessively-Increased Value of Land Tax Law is another extension of the real estate Capital Gains Tax imposed on idle land with rapid price increases.

The "Public Concept in Land" has never been clearly defined by the Government, and is still used vaguely. Neither can the example be found in the other countries. The main motive for enactment was to reduce land price inflation by penalizing land speculation and to recapture unearned, public-conferred increases in value. In this sense, the historical antecedents

can be found in the United Kingdom, where the Labor Governments have pursued often more socialistic policy that intended to nationalize all development rights in land by enactment of the Better Levy in 1967, the Development Land Tax in 1974, and so on, that were repealed by conservative governments. The Ministry of Construction in Korea, which initiated the "Public Concept in Land, seems to pursue the policy line of the Labor Government in the United Kingdom: it already adopted a scheme, Public Development in 1979, as the primary means of collecting betterment - a counterpart of the Community Land Act in U.K, where virtually all land would eventually pass through public ownership before being developed.

The Land Development Charge, as a counterpart of the Development Land Tax in U.K, was newly introduced to recapture windfalls upon private land that is still privately developed.

The crucial drawback of these three acts is the narrowness of the tax bases, which result in inefficiencies as well as inequities. For example, the Urban Residential Land Ceiling Act and the Land Development Charge is likely to restrain the conversion of rural land to urban uses, and to limit the supply of urban residential land. If a landowner with an area exceeding the fixed ceiling in urban fringe converts his/her farmland or woodland into a tract of residential land, s/he will be subject to a Land Development Charge, and will face far higher land-holding tax rates every year (more than sixty-fold). This occurs as, under the Comprehensive Land Value Tax, residential land is subject to a progressive rate scheme ranging from 0.2 percent and 5.0 percent while farmland and woodland are subject to a flat rate tax of 0.1 percent. It is, therefore, natural to expect that s/he will be reluctant to convert even if the land use system be deregulated. Again as residential land area beyond the ceiling is subject to a 6 percent tax rate under the Urban Residential Ceiling Act, s/he will use the developed land for commercial purposes, say, rather than for residential one. As a result, the increase in residential land prices will accelerate due to the shortage.

Further, a number of problems were encountered by the government as well as taxpayers: Since the government authorities would have to decide whether a new tax is due, how much the increase in value would be, and

how that tax would relate to the capital gains tax, these valuations would be artificial, difficult, and result in considerable appeals. Such administrative complexities involve mammoth bureaucracy and high administrative cost. Many taxpayers faced liquidity problems to pay the taxes.

It is doubtful that the three new acts of "Public Concept in Land" would be effective in curbing land speculation and raise additional government revenue. Given the magnitude of the revenues and the effective tax rates, it seems likely that the weakening of the real estate markets after the enforcement of the various tax measures under the Public Concept in land after 1990 was due to previous over expansion of the real estate prices rather than taxes.

Land Development Charge and Excessively-increased Land Value Tax are redundant because ultimately the increases in land value would be caught by a well-designed capital gains tax under income tax system. The Urban Residential Ceiling Act will decrease the supply of residential land. It is therefore recommendable to repeal the three acts and to reform the land value tax and capital gains tax in the following way.

### *C. Optimal Structure*

There are two kinds of closely-related taxes imposed on land which correspond to the two-fold character of land: land value tax (property tax) is imposed on rent, and capital gains tax is imposed on capital gain. A property transfer tax is often levied as a true nuisance tax.

Is there an optimal structure of these three kinds of land taxes? Probably not. There is no simple rule for determining the optimal structure of land taxation. But we can identify some common trends in the advanced countries and reexamine the experience in light of the supposed advantages and disadvantages of each system. As discussed in chapter 2, Korean tax on holding a real property is 4.0 percent of the total tax revenue, while the property transfer tax was 7.6 percent in 1993. In comparison with other advanced countries, the tax burden on holding a real property is too low, while that on transferring the property is too high. This peculiar structure of land taxes, as pointed out in section 3, is likely to interfere with the effi-

cient operation of asset markets, and contribute to make speculative bubble in Korean land market persistent. Thus the tax burden on holding a property should be higher, while that on transferring lower.

#### *D. Land Value Tax*

Almost all countries tax land values. Taxation of land and structures is the main source of local government revenue in the United States and, to a lesser extent, other Anglo-Saxon countries. In the United States, annual urban real estate taxes are typically 2 to 4 percent of the market value of land and structures, or an average of about 25 percent of land rent.

Land taxation is an efficient source of government revenue because land is a non-produced input and taxation therefore does not reduce its supply or affect its gross value or rent. Some economists, for example Henry George, believe that land taxes should be as high as annual land rents, but this is certainly unwise. Resources must be devoted to finding the most valuable use of land, and no one would commit those resources if all the resulting rent were taxed away. But land taxes can presumably be a substantial fraction of annual rent without loss of efficiency. Taxation of structures is always distorting to some degree, and there is much controversy about the magnitude of the resource misallocation it causes. In particular, a tax on building is a disincentive to construction of housing and other buildings, a disincentive that hardly be afforded in big cities in Korea with rapid population growth.

A second argument for changing the tax base from total property value to site value is that it creates a stimulus to develop its full capacity in order to meet the cash flow requirements of paying the tax in imperfect capital and land markets, resulting in some infilling of the vacant and presently underutilized areas of serviced land and allocating land to more intensive uses, and thus increasing the effective supply of urban land. But most of the empirical studies of the resulting urban patterns where site value taxation is used have not shown that land use patterns are markedly different from those resulting from general property taxation.

Equity aspects of land taxation are even more attractive in Korea where

land ownership is highly concentrated in a small percentage of wealthy persons, whose taxation is more progressive than other wealth taxes. In summary, it is preferable to tax land more heavily than improvements.

The more immediate effect of strengthening the land value tax in Korea is to reduce the price of land. It seems clear on theoretical grounds that higher land taxes will reduce the market price of land by the tax capitalization, and there is some empirical verification for this effect. In an economy in which land prices are determined by market fundamentals, the economic cost of land to a new buyer does not decline because the cost of buyer is the sum of the market price of the land and the stream of future tax payments. Thus, the reduction in market price which results from strengthening the tax is not a benefit to the new buyer. But, as we discussed above, the current land price level in Korea is likely to be raised much higher than the market fundamental value by the speculative bubbles. In that situation, the higher land value tax will lead to reduce the land prices more than the capitalization of the tax increases, so it is possible that new land buyers be better off.

In Korea, the property tax on land and the Tax on Excessively-owned Land in the past were replaced with the Comprehensive Land Value Tax in 1990. It is made up of three types of taxes by land use: (1) General Combined Tax on housing site and idle land at the progressive tax rates ranged between 0.2 percent and 5 percent; (2) Special Combined Tax on building site at the progressive tax rates ranged between 0.3 percent and 2 percent; (3) Separation Tax on farm land, forest at the flat tax rate of 0.1 percent, on factory site at the tax rate of 0.3 percent, on golf course, luxury house site at the tax rate of 5 percent. It uses the aggregate land value of an individual and a corporation in each category of land use as a tax base. The tax is imposed on each base. This enactment of a new land value tax can be regarded as significant progress, especially considering that the majority of valuable land is owned by a small percentage of wealthy individuals.

Land value tax primarily involves a difficult valuation problem. Land value tax is a tax on a stock rather than a flow. Thus, that stock must be evaluated each time the tax is collected. Land valuation is always a prob-

lem because land market is not centralized or standardized. An efficient valuation service is important. But, because the authorities in Korea have deliberately undervalued the land, the land tax becomes negligible. The valuation of land for tax purposes averaged below 20 percent of the market value in 1988. To improve this problem, Official Land Value (OLV) has, since 1990, been announced by the government for the entire nation every year.

But there are problems with the basic data inputs. The basic input for OLV has been a combination of sales data, and opinions of real estate agents, bankers and assessors. The situation is unacceptable for records of property sales values because sales values may be consciously understated to avoid property transfer and capital gains tax. It is recommended to remove property transfer taxes and to reform the capital gains tax so that it provides incentives for buyers and sellers to state property sales value. Transaction price should be written in the registration card of real estate. If all provisions for exemption and reduction of capital gains taxes are eliminated, and the tax be calculated based on reported transaction prices rather than appraised values, the buyer will have a strong incentive to reveal the transaction price truthfully. If s/he agreed to underreport the transaction price for reducing the seller's capital gains tax burden, s/he would pay more tax when s/he would sell the property in the future. This new system will provide a greater opportunity to check the accuracy of assessment by reference to sales values in transaction.

Moreover, the tax base of the Comprehensive Land Value Tax has been calculated based on the Standard Land Value appraised by local autonomies. The average ratio of SLV to OLV is estimated to be 15.3 percent in 1990, and 31.6 percent in 1995, so that the average effective tax rate base on OLV is estimated to be 0.09 percent in 1990, and 0.2 percent in 1995. The assessment rate should be raised so that annual land taxes are one to two percent of the market value of land for the top 5 percent of the land owners. A couple of alternative ways to increase the effective tax rate have been discussed: One option is to transfer SLV to OLV and decrease the tax rates. The other is to keep current tax rates and make increases in valuation year by year. The latter approach seems realistic

because of two reasons: (1) it avoids the taxpayer's resistance by eliminating the sharp upward jump in the tax burden, and (2) it permits local autonomies to make increase in valuation while to increase the future tax rates require explicit policy actions which are politically difficult.

Local government taxes are most effective when focused on the revenue-raising objectives. "Keep it simple" and "leave allocative and equity objectives to higher levels of government and to the expenditure side of the budget" (Bahl and Linn, 1992) are good rules of thumb. Local taxes should be kept as simple as possible. Exemptions should be kept to a minimum and rate structures kept as uncomplicated as possible. There are a very high concentration of land value tax base. The administrative cost of Aggregate Land Value Tax turns out to be quite high. Thus, it is recommended to divide Aggregate Land Value Tax in two parts: local tax levied on all land with a flat rate based on the benefit principle; and national tax imposed on the upper 5 percent of land holders with a progressive rate based on the ability-to-pay principle.

The main purpose of a progressively structured land tax rates is to put a higher share of the tax burden on the wealthier population groups. But there is little reason for preferential taxation of building sites relative to residential lands. In other countries, industrial and commercial properties are often more heavily taxed than residential properties on the equity grounds that owners of the former have a greater ability to pay than do owners of the latter. Thus it is recommended to integrate the General Combined Tax base and Special Combined Tax base.

### *E. Capital Gains Tax*

Using only a land value tax may not be sufficient to dampen land price inflation. It can be shown that the dampening effect of land valuation tax will be diminishing rapidly in the area where the expected capital gain is higher (Iwata, 1977). For a site of land to be developed for urban uses, infrastructure and other public facilities and services will be needed to serve the development, including sewage trunk lines and treatment plants, schools, public libraries, and fire and police service. Who pays for the

public costs associated with new development is a controversial question. If the cost of the infrastructure of newly developing or redeveloping areas were paid by the general taxpayers, the landowner would have a windfall - windfalls would be redistributed to the rich.

Land value taxation does not specifically address the issue of capturing socially induced increases in land values. A more precise instrument for that purpose is a tax based on increases in land values, of which there are three variants, a betterment levy (or a development charge) to finance site-specific local public investments; a type of development gains tax levied on the gain in value associated with a change in land use; and a capital gains tax based on land value increment, commonly administered by the national government.

A capital gains tax, rather than a betterment levy, would be appropriate as a key windfall recapture device, because it is usual that the benefits of a development project would be widely distributed, so it would be difficult to define taxpayers. Because a type of development gains tax has intimate relationships with the land use planning process, it seems probable that it is best adapted to such a country as Korea where there are very strong land use regulations. However, even in Britain, there has been considerable difficulty and this measure has been repealed repeatedly. Thus, it is advisable that we reform general capital gains tax under the income tax system.

While most economists in Korea and Japan recommend raising the assessments of land for property taxes (Comprehensive Land Value Tax in Korea), they are divided as to whether the capital gains tax should be raised or lowered. There are two major factors for the difference in judgment: whether the land price contains speculative bubbles and whether the lock-in effect is considered adequately large. Many landowners in Korea, as shown in chapter 3, choose to hold land idle rather than selling it, because the expected rate increased of land prices is higher than the interest rate caused by the government control of the financial sector, rather than due to the lock-in effect of the realization-based capital gains tax. Thus it seems plausible to conclude that raising the effective rate of capital gains tax is desirable.

Section 3 notes that the crucial drawback of the capital gains tax in Korea lies in the serious erosion of tax base due to wide loopholes. So it is a major step to broaden the tax base by eliminating various special provisions of reductions and exemptions, including capital gains on financial asset, and mitigating the tax rate to a moderate level.

Capital gains tax on a realization basis, however, has a drawback of the lock-in effect. The stronger this effect, the less likely it is that the price of land will drop as a result of raising the effective tax rate. It also has crucial weaknesses in political acceptability. As shown in the history of the United Kingdom, landowners may expect that a change of political party in power will lead to a tax repeal. If the tax is expected to be repealed, landowners can often delay undertaking the taxed events such as land sale and development in hope of the repeal. This will lead to depressed market activity, especially the supply of land while the tax is in effect, and thus increase the political demand for repeal. Two solutions to this problem are conceivable: to introduce a provision of charging periodical interest on a deferral payment of capital gains tax and a constructive realization at gift and bequest. Another is to strengthen the land value tax complementary to the capital gains tax. A land value tax levied at high enough rates could also serve as a betterment recapture device, because any increase in land value automatically increases the annual tax liability. This increase in taxes occurs whether the land is transacted by sale.

#### *F. Development Charges in Local Autonomies*

There can be little doubt about the usefulness and desirability of developing a broadly-based charging system for local public investments. In particular, a serious consideration of land development charges is likely to be appropriate. A land development charge is a lump-sum charge which is designed to recoup the public costs of infrastructure development from beneficiaries at a local level. Two types of land development charges which have successful reputations are the land readjustment system in East Asia and the valorization system in Latin America. The land readjustment system is appropriate for the full development of new areas of

city or entire new towns, and the valorization system has principally been used to finance the physical infrastructure in already built-up urban areas. (Bahl and Linn, 1992).

Such land development charges recover local public investment costs from beneficiaries, and can improve resource allocation as such charges serve to limit the demand for local services to efficient levels and make actual and would-be dwellers aware of the social costs of local services. Such charges can also contribute to equity. Recouping the costs of public investment from beneficiaries is a fair way to finance a project, and windfall gains may be minimized. Under general revenue financing, these windfall gains have often been appropriated by high income groups in the form of increased property values. Also, such charges serve as an urban development guide because the land owners' willingness to pay for services is usually the only way in which the benefit of a service can be ascertained and compared with the cost of public investment.

One important contribution of the development charges is that they induce some discipline in the process of citizen demand for local public expenditure. Where expenditures that benefit specific sites are financed from general revenues, as in Korea, there is considerable competition in the political arena for valuable public decisions that confer land value gains without any compensating payment. And the shortage of serviced land in Korea is due in part to the inability to finance the local public investment. Thus, well-designed development charges are likely to make the supply of urban land more elastic to market demand.

The development charge, however, raises many administrative difficulties. One problem is the difficulty in assessing changes in land value caused by a public project at the time of a public service provision. Another difficult problem is delineating the area within which properties will benefit. Thus it seems desirable to use such development charges to recoup land value increases caused by specific projects at the local autonomies level as a supplement to a general capital gains tax at the national government level.

Land readjustment schemes in Korea appear to have contributed to the development of new land at the urban fringe until the late 1970s. But

Doebele and Hwang (1979) conclude that municipal authorities may have restricted the expansion of urban land below the rate that would have stabilized land prices and below rates that an unrestricted market would have generated. While the schemes are supposed to be largely self-financing and thus were not a drain on other sources of local finance, they may not cover such essential services as water supply and cost of investment in off-site infrastructure required for development. It is thus advisable to reform Land Readjustment System in the direction of loosening regulatory framework with full coverage of development cost including the implicit costs.

In contrast to land readjustment system, the valorization system or special assessment is used to finance the expansion of urban infrastructure by levying one-time lump-sum charges on the owners of surrounding land. Costs are allocated to specific properties within the zone of influence. A system of coefficients in the comparison table can be used which attempt to reflect the effect of the project on each project by allowing for such factors as the property's distance from the project, shape, topography, use, neighborhood socio-economic composition, and so on. A serious consideration of introducing valorization or special assessment in urbanized localities is likely to be appropriate. Valorization has the advantage of imposing the cost of infrastructure on the largest beneficiaries, and it thus makes both beneficiaries and public decisionmakers more cost-conscious.

### *G. Transfer Taxes*

Acquisition Tax and Registration Tax are transfer taxes based on the stated price of the real property acquired. They are sometimes called stamp taxes because stamps showing payment are affixed to the document transferring title. These taxes have been the most important, even more important than Comprehensive Land Value Tax, the revenue source for local autonomies in Korea. Its main justification is that these taxes can be collected relatively easy if property registration is required in any way. Some have contended that the transfer tax would be a good windfall recapture device. However, unless the tax is based on increase in value only, the transfer tax cannot be considered as a windfall recapture device.

Our analysis in section 3, moreover, indicates that the persistence of the speculative bubble in Korea may be due to high rates of Acquisition Tax and Registration Tax. Property transfer taxes are likely to interfere with the efficient operation of asset markets, and provide an incentive for understating the transaction price of properties, thus weakening the main data base of real estate appraisal for the purpose of all property related taxes. Such adverse effects on asset market operations make them a poor substitute for a land value tax. Where both land value tax and property transfer taxes are in operation side by side (as is the case in Korea), their administrative resources would be saved and distortions avoided if the property transfer taxes were removed and additional revenues were raised through strengthening the land value tax.

## 6. Concluding Remarks

Most of arguments in section 3 are still suggestive rather than conclusive. Further research is clearly needed. In particular, more theoretical and empirical studies are demanded to resolve the endless debates on market fundamentals versus bubbles. Research ought to find more apparent evidence of bubbles. To do this, it seems promising to test again the null hypothesis in equation (6) using quarterly data available since the late 1980s, and more data certainly needs to be collected. It may be worth making an attempt at circumventing the asymptotic distribution problem of Flood and Garber's model, using the fact that Japan and Taiwan experienced simultaneous land price inflation, as Flood, Garber and Scott (1984) did. The structural approach we suggested in section 3.4 and 3.4 is also subject to empirical test.

The discussions on land tax reform in section 5 is rather preliminary, and more detailed discussion and proposals for reform shall come in the following chapters.

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**II****Capital Gains Taxes in Korea**

Jin Soon Lee

**1. Introduction**

There are three major types of capital gains taxes in Korea. Capital Gains Taxes under individual income tax and corporate income tax (CGT) are generally imposed on a realization basis. Above 99 percent of CGT revenue is originated from levying on sale of real estate, so CGT in Korea is actually a real estate capital gains tax. Either Excessively-Increased Land Value Tax (EILVT) or a Land Development Charge (LDC) can be levied on a specially-defined subset of Capital Gains Tax Base on an accrual basis. In addition, special charges are imposed on land use conversions from farmland or woodland to urban land, but from which the revenue yield has been negligible.

The capital gains taxes in Korea have both regulatory and revenue purposes: to raise money for public purposes and deterring real estate speculation. The central thrust of the capital gains taxes have, however, been to curb real estate speculation. Capital-gains taxes account for a relatively small share of Korean tax collections, about 2.5 percent of total tax revenue until 1989, and about 6 percent in 1991. In Korea, however, there has been a great deal of political and public concern with land speculation. An anti-speculation sentiment was an important factor in the development of the capital gains taxes. A primary rationale for the capital gains taxes has been to deter real estate speculation.

Policy-makers in Korea have assumed that a few speculators drive up land values and that the most commonly advocated remedy to the problem of speculation is taxation. They believe that tax policies can be used

to alter land prices in a desirable manner. In other words, if land prices are too high, taxes may be used to reduce the level of land prices. Similarly, if land prices are increasing too rapidly, taxes may be used to slow down the rate of increase. Therefore, they place a heavy tax on capital gains in the real estate market and also impose high transfer taxes designed to discourage speculation.

But little has been written about how effective various tax approaches have been in discouraging real estate speculation. Of course, it is well known that tax capitalization can cause various changes in land-holding taxes to lower land prices. However, once tax changes have been fully capitalized, it is questionable whether these higher tax rates can or will cause the rates of increase in the land prices to be less than they otherwise should be. Furthermore, the effect of capital gains taxes on the land market has rarely been analyzed in terms of formal economic models. Little empirical work has been done on the effectiveness of capital gains taxes in curbing real estate speculation, but evidence to date has been fairly inconclusive.

Also, as rapidly rising incomes and increasing wealth produce more rapid growth in capital gains than in ordinary income, capital gains taxes will be expected to play a more important role to retain the equity of the tax system. This study is based upon the notion that income is an appropriate measure of taxpaying ability, which is measured by the sum of consumption and accretion of net wealth enjoyed by a taxpayer during a given period. This accretion definition of income implies that capital gains constitute an accretion of economic or spending power, conferring on the recipient an increased taxable capacity which should be taken into account if the burden of taxation is to be equitably spread. Furthermore, the basic concept underlying this accretion definition of income suggests that the distinction between capital gains(losses) and ordinary gains(losses) should be eliminated, and that taxes ought to be levied in full on capital gains as they accrue.

The major purpose of this paper is twofold: to examine critically the current system of capital gains taxes in Korea; and to suggest an alternative proposal for reform, not only as a more effective measure to solve the

land problems, but also to improve equity and efficiency. This paper examines the issues on capital gains tax policy primarily in the context of land problems in Korea.

Broadly speaking, there are two sequential dimensions of issues we should deal with in designing a new capital gains tax policy in Korea: (1) whether capital gains tax should be raised or lowered; (2) and then how the capital gains tax system should be reformed. Sections 2 and 3 will address the issue (1). Based upon both the analysis on the causes of the land price inflation in chapter I, and a theoretical investigation on the effect of land capital gains tax on land market in Section 3, the conclusions in Section 3 will propose the basic direction which a capital gains tax policy should take to solve the land problems.

Sections 4 and 5 will address the issue (2). Section 4 will critically examine the current system of capital gains taxes. Proposals for reform to solve lock-in and bunching problems of capital gains tax on a realization basis, and for widening the tax base and the rate reduction, will be suggested in Section 5. Section 6 will summarize the package of reform proposals.

## **2. Basic Issues on Capital Gains Tax Policy**

Conventional wisdom suggests that when the cost of land (property tax) is too low, it encourages speculative demand in real estate. Based upon this conventional wisdom, most economists in Korea and Japan recommend raising the assessments of land for property taxes (Comprehensive Land Value Tax in Korea). Economists, however, are divided as to whether the capital gains tax should be raised or lowered. There are two major factors for the difference in judgment: whether the land price contains speculative bubbles and whether the lock-in effect is considered adequately large.

Increasing property taxes and lowering capital gains taxes are advocated by the market fundamentalists who consider the bubble component in land prices to be small and the lock-in effect to be large (for example, Mera (1993)). Even those who consider land prices to contain significant bubbles may favor lowering capital gains if the lock-in effect is considered

large and/or if the tax can easily be passed on to the buyers so that an imposition of capital gains would not deter speculative activities (for example Noguchi, 1990).

If land price increases happen to have a bubble component, transaction taxes and short-term capital gains taxes are an effective way to curb a bubble. Increasing capital gains tax is favored by those who believe the following: that land price increases are due to speculative activities; that an imposition of capital gains taxes would deter speculation; and, that the lock-in effect is small-that is, the decision to sell a property is prompted by factors other than taxes such as interest rates(for example, Iwata (1977, 1990)). Those who believe that an equitable distribution of wealth or income has top priority also tend to oppose lowering capital gains taxes.

Thus, in order to clarify the basic direction of capital gains tax policy, there are two main issues that need to be clarified: the primary issue includes the causes of the land price inflation, and the optimal policy set that should be implemented, and the second issue concerns the effect of capital gains taxes on the land market.

We have analyzed the first issue in Chapter 1, and concluded that it seems plausible to view the rapid land price appreciation in the last thirty years as being due in part to a speculative bubble, and the bubble component in the current land prices is substantial. We will examine the second issue in the following Section 3.

### **3. The Effect of Land Capital Gains Taxes on Land Markets**

The effect of capital gains taxes on land market can rarely be analyzed in terms of formal economic models. A closely-related issue is the incidence of a capital gains tax. The incidence of taxes on gains in property values is unsettled. Several economists have offered theories, some concluding that the tax is paid by the original owner, some concluding that it is passed on to buyers, and some arguing that it depends on the circumstances. Most are, however, far from rigorous economic analyse. Little empirical work has been done on the incidence of capital gains taxes, but

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8. See Misczynski for a survey of incidence studies of real estate capital gains tax, chapter 6 in the book edited by Hagman and Misczynski(1978).

the evidence is hardly conclusive.<sup>8</sup> This section will investigate theoretically the effect of land capital gains tax on the demand for and price of land, relying mainly on Iwata's analysis (1977) with an expected utility maximization model in the following.

### *A. The Basic Model*

Iwata's (1977) analysis is a theoretical exercise in a standard portfolio selection model such as Stiglitz (1969). An investor has initial wealth  $W_0$ . There are two assets in which he can invest his wealth. The risky asset, land (X), yields a random return per dollar invested of  $e(\theta)$  where  $e(\theta)$  has a probability distribution  $F(\theta)$ . The rate of return on land consists of two components: income return (rent) and capital gain, that is,

$$e_1(\theta) = \frac{R}{p}, \quad e_2(\theta) = \frac{P^e - p}{p}$$

$$e(\theta) = \frac{R}{p} + \frac{P^e - p}{p} \quad (3-1)$$

where  $P$  is the current land price at the beginning of the period,  $R$  is the expected rent for the land in the period,  $P^e$  is the expected price of land at the end of the period.

The safe asset, bank deposit (D), yields a sure rate of return per dollar invested of  $i$ . It is assumed that  $e(\theta)$  does not depend upon the amount of invested in land, and that  $i$  is nonnegative. At the initial period, the investor held  $X_0$  and  $D_0$ . The investor wishes to maximize the expected utility of his wealth at the end of the period. If he invests  $D$  in the deposit and  $X$  in the land at the price of  $P$ , then his budget constraint is

$$W_0 = PX_0 + D_0 = PX + D \quad (3-2)$$

and his wealth at the end of the period,  $W$ , is

$$W = (1+e)PX + (1+i)D \quad (3-3)$$

If we denote by  $E$  the expectation operator, then he wishes to maximize

$$E\{U(W)\} = \int \{U[(1+e)PX+(1+i)D]\}dF \quad (3-4)$$

If  $U'' < 0$ , in the absence of taxes a necessary and sufficient condition for utility maximization is

$$EU' e = EU' i \quad (3-5)$$

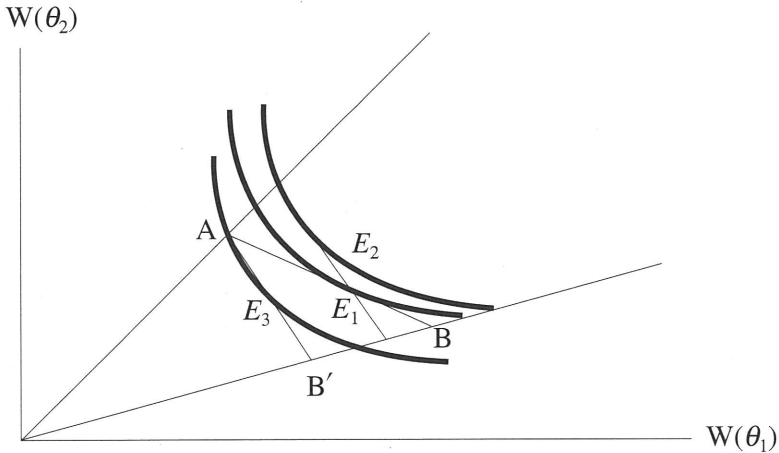
This result can also be seen graphically as follows. We consider the special case where there are only two states of the world,  $\theta_1$  with probability  $\pi_1$  and  $\theta_2$  with probability  $\pi_2$ . If the investor purchases only the safe asset—bank deposit—his wealth at the end of the period is represented by the point  $A$  in Figure 1, with  $W(\theta_1) = W(\theta_2) = W_0(1+i)$ . If the investor purchases only the risky asset—the land—his wealth at the end of the period is represented by the point  $B$  with  $W(\theta_1) = W_0(1+e(\theta_1))$  and  $W(\theta_2) = W_0(1+e(\theta_2))$ , where  $e(\theta_1) > e(\theta_2)$ . Then by allocating different proportions between the two he can obtain any point along the line  $AB$ . We have drawn in the same diagram indifference curves for different values of  $EU$ , where

$$EU = \pi_1 U(W(\theta_1)) + \pi_2 U(W(\theta_2)) \quad (3-6)$$

As  $W_0$  increases, the budget constraint giving different possible values of  $W(\theta_1)$  and  $W(\theta_2)$  moves outward, but with unchanged slope. The investor maximizes expected utility at the point of tangency, i.e., where the marginal rate of substitution equals the slope of the asset budget constraint:

$$\frac{\pi_1 U'(W(\theta_1))}{\pi_2 U'(W(\theta_2))} = \frac{e(\theta_2)-i}{e(\theta_1)-i} \quad (3-7)$$

&lt; Figure II-1 &gt; Land Capital Gains Tax on a Accrual Basis



### *B. Land Capital Gains Tax on an Accrual Basis*

Assume no tax on income gain such as interest income and rent (also no tax on capital gain from financial asset) and a proportional tax on capital gain from land. This tax assumption may be a good approximation for the reality of taxation in Korea. Most interest income has been exempted or taxed at a special low rate, and rent has rarely been captured by the tax net; capital gains on corporation shares and bonds have not been recognized as taxable income, only real estate capital gains have been heavily taxed.

We begin the discussion with an investigation of the effects of the land capital gains tax on an accrual basis, since this is the simplest case of analysis. A proportional land capital gains tax with full loss offset at the rate  $t$  means that the wealth at the end of the period is given by

$$W = (1 + e_1 + (1 - t)e_2)PX + (1 + i)D \quad (3-8)$$

This case is sufficient of the analysis with the case of only two states of

nature. In <Figure II-1> we have drawn the before-tax budget constraint  $AB$  and the optimal point is  $E_1$ . The after-tax budget constraint is the line joining  $A$  and  $B'$ , and the optimal point is moved to  $E_3$ . The movement from  $E_1$  to  $E_3$  can be divided into two parts: since the relative rate of return of land is decreased by the tax, the demand for land will decrease, and the optimal point is moved from  $E_1$  to  $E_2$ . Hence the substitution effect is negative. The movement from  $E_2$  to  $E_3$  indicates that the demand for land decreases, since the expected wealth would decrease due to the tax. The wealth effect is negative if the land is normal. Thus, if land is normal, both the substitution effect and the expected wealth effect are negative, hence the demand for land will decrease and the land price will decrease.

Intuitively, the land capital gains tax on an accrual basis causes a reduction in the expected net (after tax) price, the extent of the reduction being dependent upon the tax rate. The net sale price will be further reduced as buyers offer less, realizing that they too will benefit less from future price appreciation. Thus the result of the land capital gains tax should cause land prices to be lower than they otherwise would be.

### *C. Land Capital Gains Tax on a Realization Basis*

This reduction in price may not, however, occur if the tax applies to realized rather than accrued increments. The capital gains tax on a realization basis is double-edged. On the one hand, it helps to pop a bubble and restore equity. On the other hand, the capital gains tax is known to cause a lock-in effect. Thus the impact of a capital gains tax on a realization basis on land prices depends on whether the amount of land that the owners withhold from the active real estate market in order to avoid paying the capital gains tax is greater or less than the amount of land which is no longer desired by a prospective purchaser who, being discouraged by the capital gains tax from entering real estate market, invests elsewhere. Let the former be a reserved demander for land (or net seller), and the latter be a new demander for land (or net buyer). In other words, the capital gains tax on a realization basis is likely to produce both a supply and demand withdrawal impact with no answer yet as to which is most influential. It is

even possible that the tax may cause land prices to be higher rather than lower. This possibility has not been sufficiently appreciated by policy makers, probably because factors affecting supply side of the market place are frequently neglected. As a result, capital gains taxes on a realization basis have proved to be ineffective on a number of occasions (Case, 1992).

### 1) New Demander and Reserved Demander

Assume, for simplicity, that the investor sells all his land at the end of the period. The effect of land capital gains tax with full-loss offset is different between the reserved demander and the new demander. The budget constraint for the new demander for the prospective purchaser of land is

$$PX_0 + D_0 = PX + D \quad (3-9)$$

where  $X \geq X_0$ , and his wealth after tax at the end of the period is

$$W = (1+e_1+(1-t)e_2)PX-t(P-P')X_0+(1+i)D \quad (3-10)$$

where  $P'$  is the purchasing price of the land held by the investor at the beginning of the period.

On the other hand, the budget constraint for the reserved demander is

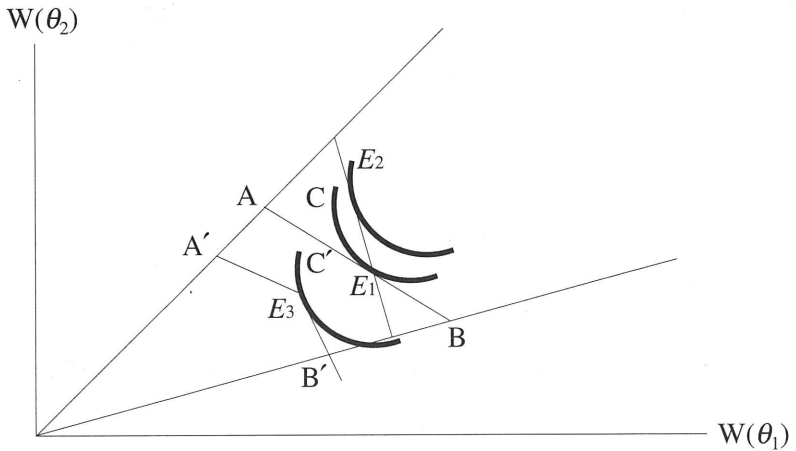
$$PX_0-t(P-P')(X-X_0)+D_0 = PX+D \quad (3-11)$$

where  $0 \leq X \leq X_0$ , and his wealth after tax at the end of the period is

$$W = (1+e_1+(1-t)e_2)PX-t(P-P')X+(1+i)D \quad (3-12)$$

Thus the budget constraint for the reserved demander is different from that of the new demander, resulting in a difference in the effect of capital gains tax on a realization basis.

&lt; Figure II-2 &gt; Realization-based Land Gains Tax: New Demander



## 2) The Effect of Land Capital Gains Tax on the New Demander

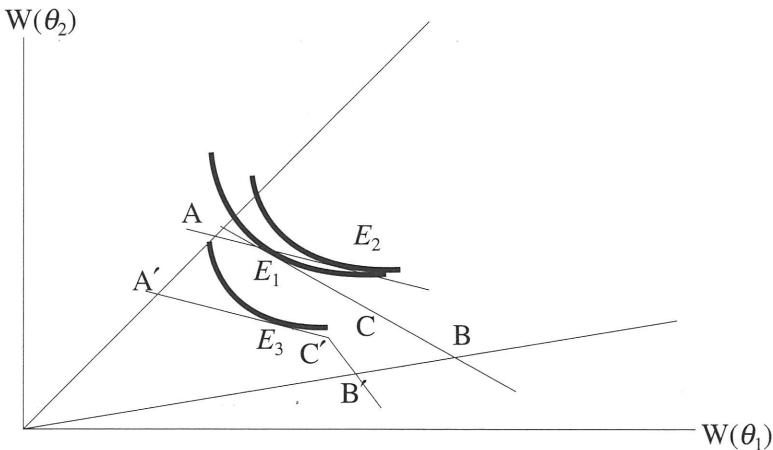
It is easy to analyze the effect of the capital gains tax on realization on the behavior of the new demander for land. In <Figure II-2> we have drawn the before - tax budget constraint  $AB$ , and the point  $C$  is the investor's initial endowment at the beginning of the period. The budget constraint after the capital gains tax on realization is the kinked line joining  $A'$ ,  $C'$  and  $B'$ . The after-tax budget line for the new demander is the line  $C'B'$ , and that for the reserved demander is the line  $A'C'$ . The fact that the slope of  $A'C'$  is flatter than that of  $C'B'$  reflects the tax deferral advantage.

If the capital gains tax on realization is imposed, the optimal point of the new demander moves from  $E_1$  to  $E_3$ . The substitution effect (the movement from  $E_1$  to  $E_2$ ) is negative, and the expected asset effect (the movement from  $E_2$  to  $E_3$ ) is negative if the land is normal. Hence the effect decreases the demand for land of the new demander if land is normal.

### 3) The Effect of Land Capital Gains Tax on the Reserved Demander

The case of the reserved demander is slightly more difficult to analyze. We begin the analysis with the case of only two states of nature. In <Figure II-3> the investor is willing to sell a part of his land (the movement from  $C$  to  $E_1$ ) before the tax. After the tax, the optimal point will move to  $E_3$ : The movement from  $E_1$  to  $E_2$  indicates the substitution effect of the tax. This substitution effect in <Figure II-3> increases the reserved demand for land, as a particular case. But, in general, whether the substitution effect of the tax increases the reserved demand for land or decreases such demand depends on the relative amount of advantage of deferring the sale of the land to the end of the period, compared to the disadvantage. We will discuss this further in the following subsection. The movement from  $E_2$  to  $E_3$  indicates the two kinds of wealth effect: 1) the current wealth effect which reflects the decrease of the wealth at the beginning of the period by the amount of the tax payment if the investor would sell the land; and 2) the expected wealth effect which reflects the decrease of the expected wealth at the end of the period due to the tax payment. Both

< Figure II-3 > Realization-based Land Gains Tax: Reserved Demander



types of wealth effect will decrease the demand for land if the land is normal.

It is usually argued that the benefit from the postponement of tax liabilities under the realization principle makes the investor willing to hold his land, which will increase the price of reserved demand. But this is only a part of story. The usual argument focuses only on the benefit from deferring sale of the land. Thus, the usual argument is not necessarily correct in the following two respects: 1) the substitution effect of the tax does not necessarily increase the reserved demand for land; 2) the usual argument ignores the wealth effect which will decrease the reserved demand for land if the land is normal.

It is straightforward to investigate these issues in the more general case. Differentiation of the first order condition for expected utility maximization of the wealth in (3-12) subject to the budget constraint in (3-11) yields

$$\begin{aligned} \frac{\partial X}{\partial t} = & \{EU'(e_2P-i(P-P'))\} \frac{A_{11}}{A} \\ & + \{EU''((e_1+(1-t)e_2)+q) \frac{A_{11}}{A} + EU''(1+i) \frac{A_{21}}{A}\} (Ee_2P+P-P')X \\ & + (P-P')(X_0-X) \frac{A_{31}}{A} \end{aligned} \quad (3-13)$$

where  $q = P-t(P-P')$  and  $A$  is the Hessian matrix, which is positive if the investor is risk-avert.

The first term on the right hand side of equation (3-13) indicates the substitution effect of the tax: The first term and the second term in the parenthesis indicates the benefit and loss in tax payment of deferring sale of the land until the end of the period, respectively. Assume  $P$  is greater than  $P'$ . If the investor chooses to hold rather than sell, the tax on the accumulated gain is deferred, without interest, to the end of the period (the deferral "tax advantage" of realization-based systems is  $ti(p-p')$ ). On the other hand, he should pay the additional tax of the amount  $te_2P$  (the deferral "tax disadvantage" of realization-based systems).

The second term on the right-hand side of the above equation indicates

the expected wealth effect of the tax, which is negative if the land is normal. And the third term indicates the current wealth effect of the tax, which is also negative if the land is normal.

Let's summarize our discussion so far. Assume land is normal. If the amount of benefit is greater than that of loss from deferring sale of the land (Case A), then the tax can either increase or decrease the reserved demand for land depending on the relative magnitude of substitution effect and wealth effect of the tax, working in the opposite direction. But if the amount of benefit is smaller than that of loss from deferring the sale of the land (Case C), both the substitution effect and the wealth effect of the tax will decrease the reserved demand.

#### 4) Land Market

The equilibrium in the land market is determined at the point where the new demand curve and supply curve derived from reserved demand curve intersect. In <Figure II-4>, D and S are a new demand curve and a supply curve before the tax, respectively. The equilibrium land price is P and the trade volume of land in the period is L.

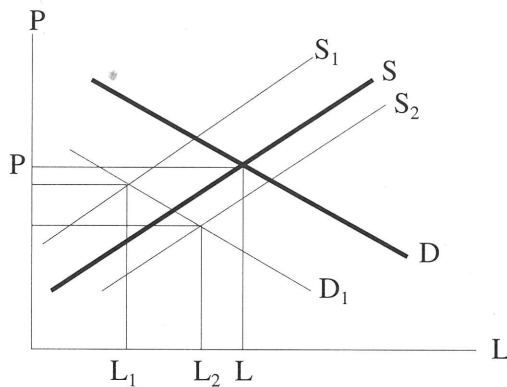
If the land capital gains tax on a realization basis is imposed, the new demand curve will shift downward: substitution effect is always negative because there is no benefit from deferring sale of land, and also wealth effect decreases the demand for land if land is normal. However, whether supply curve shifts upward or downward can not be a priori known.

The magnitude of vertical shift of supply curve in either direction is likely to be smaller than that of the new demand curve, hence, the trade volume of land will be decreased. The tax imposed on accumulated capital gain, which has accrued before on a realization basis, has two kinds of discriminatory effects between a new demander and a reserved demander for land. With respect to the substitution effect, the tax will discriminate against a new demander relative to a reserved demander because the new demander does not have room for benefit from deferring sale of land. With respect to the wealth effect, however, the tax will discriminate against the reserved demander because the negative wealth effect through accumulated capital gains so far affects the reserved demander, but not the

new demander. As a result, if the substitution effect dominates the wealth effect, the tax will decrease demand price more than supply price.

In <Figure II-4>, after the tax, the demand curve will shift downward from  $D$  to  $D_1$ . The supply curve will be likely to shift upward from  $S$  to  $S_1$  in the Case A, and will shift downward to in the Case C. In Case A, the transaction volume in the land market will decrease from  $L$  to  $L_1$ . Whether land price will increase or decrease depends on the relative magnitude of upward shift of the supply curve to that of the downward shift of the new demand curve. The land price may increase if the accumulated capital gains accrued before the tax is much greater than prospective capital gain. In Case C, both transaction volume and price of land will decrease.

< Figure II-4 > Land Market



#### *D. Lock-in Effect*

To investigate the lock-in effect as a part of the substitution effect of realization-based capital gains tax on reserved demand further, let us simplify further our model above. Assume still that the reserved demander for land sell his land until the end of the second period. Consider a simple

two-period model without uncertainty in which an reserved demander for land, having accrued a first-period gain, must decide whether to sell at the price  $P$  and realize the gain, and reinvest at the rate of return,  $i$ , or hold the land for an additional rate of return  $e$  until the second period. Assuming all land capital gain is taxed at the same rate,  $t$ , and his purchase price of the land is  $P_0$  then the investor's terminal wealth under the first strategy is

$$W_R = (1+i)[P-t(p-p_0)] \quad (3-14)$$

In the second period units, total taxes equal those paid in the first period, accumulated at the interest rate.

If the investor chooses to hold rather than sell, the terminal wealth after the tax is

$$W_H = R_1 + P_1(t) - t[p_1(t) - p_0] \quad (3-15)$$

where  $P_1(t)$  is the expected land price after the tax being introduced.

The reserved demand price after taxation is determined when the two equations are equal, that is:

$$(1+i)p - it(p-p_0) = R_1 + P_1(t) - t[P_1(t) - P] \quad (3-16)$$

It is usually argued that the benefit from the postponement of tax liabilities, without interest, makes the investor willing to hold the land, even for a range of return  $e < i$ , so increases reserved demand price. But this is only a part of the story, as noted in section C.

If the investor chooses to hold rather than sell, the tax on the first-period gain is deferred, without interest, to the second period (the deferral 'tax advantage' of realization-based systems). This tax advantage makes the investor willing to hold the land. The larger  $[P-P_0]$  is, the larger the deferral tax advantage and, hence, the lower  $i$  must be to induce the investor to sell. On the other hand, he should pay the additional tax of the amount  $t[P_1(t) - P]$  (the deferral 'tax disadvantage' of realization-based systems).

The effect of land capital gains taxation on the reserved demand price

for the land, and the lock-in effect, depends on the relative magnitude of the two working in opposite directions. If the tax advantage is greater than the tax disadvantage (Case A in <Table II-1>), the lock-in effect will work, and the substitution effect of real estate capital gains taxation will raise the reserved demand price for the land held before introducing the taxation, so that the supply curve derived from the reserved demand curve will be likely to shift upward.

<Table II-1> The Substitution Effect of Land Capital Gains Tax on Reserved Demand Price of Land

case A	$it(p-p_0) > t[p_1(t)-p]$	reserved demand price for the land will increase
case B	$it(p-p_0) = t[p_1(t)-p]$	the reserved demand price for the land will remain constant
case C	$it(p-p_0) < t[p_1(t)-p]$	the reserved demand price for the land will decrease

The discussion above, however, implicitly assumes that asset markets are efficient, so that the following arbitrage condition holds:

$$(1+i)P = R_1 + P_1(t) \quad (3-17)$$

This assumption is not realistic in Korea because interest rates have been controlled by the Government in the last three decades, as was discussed in chapter I. Under this situation, there is little room for the lock-in effect of realization-based capital gains tax on a landowner's choice for timing

a sale.

Assume both  $P_0$  and  $R_0$  are equal to zero. This case is not rare in Korea where the price of land increases rapidly and the primary purpose of owning land is capital gain rather than income gain. Under the case without tax, the landowner will i) sell the land if the expected increase rate of land prices is lower than the interest rate, ii) hold it if the expected increase rate of land prices is higher than the interest rate, and iii) be indifferent between selling and holding if the two rates are equal.

It is easy to show that the effect of introducing realization-based real estate capital gains tax on landowner's choosing the timing of sale may be negligible. For example, in the case iii) above, the tax advantage is also equal to the tax disadvantage, so the tax does not affect landowner's choice. In the case ii), the tax advantage is smaller than the tax disadvantage, but the net tax effect is not likely to offset the deferral advantage because the amount of capital gains tax is a part of the capital gains accrued, so that the tax will hardly affect the landowner and owner's choice.

It is easy to extend the analysis into the more general cases: the greater the rent is relative to the capital gain, or the smaller the purchasing price of the land is relative to the current price, the greater the probability of the lock-in effect is. On the other hand, the progressive rate structures of Capital Gains Tax and estate tax in Korea will mitigate the lock-in effect of the realization-based capital gains tax.

It is likely that Korea is the case ii) above. Many landowners in Korea choose to hold land idle, rather than selling it, because the expected increased rate of land prices is higher than the interest rate caused by the government control of the financial sector, rather than due to the lock-in effect of realization-based capital gains tax. Therefore, investment opportunities are given the low level of development of the financial market due to financial repression by the government in Korea, and investors are likely to put off realization by holding onto a piece of property in order to avoid heavy taxation.

Thus, the usual argument is not likely to be true that the lock-in effect is so large that an imposition of realization-based capital gains tax would not

curb a bubble, hence lowering capital gains taxes is desirable. The decision to invest between real estate and financial asset in Korea is prompted by factors other than taxes, such as interest rate and investment opportunities in financial sector.

### *E. Conclusion on the Basic Direction of Capital Gains Tax Policy*

In sum, our analysis in chapter 1 implies that the bubble component of the land prices in Korea is substantial, and the analysis in this section have shown that the lock-in effect may be small. Thus we may conclude that the imposition of well-designed capital gains tax on a realization basis would contribute to curb a bubble, hence raising the effective rate of capital gains tax is desirable.

In theory, as Iwata (1977) showed, capital gains tax is a more effective measure to curb a speculative bubble than a land-holding tax, as the expected increase rate of land prices is higher. In practice, administrative problems inhibit the effective use of capital gains taxes which tend to be more complex. Given imperfections in capital markets and liquidity problems which force the sale of land, land holding taxes may exert a greater downward pressure on land prices than capital gains taxes on realization basis. Therefore, while increasing the effective tax rate of Comprehensive Land Value Tax be needed, it is also desirable to increase the effective tax rate of Capital Gains Tax for curbing a bubble in land prices as well as improving equity of taxation. We will investigate the way how the capital gains taxes in Korea should be reformed to raise the effective tax rate in the following.

## **4. Problems with the Current Capital Gains Taxes**

Among the three major types of real estate capital gains taxes in Korea, the Capital Gains Taxes under income tax (CGT) and Excessively-Increased Land Value Tax (EILVT) are levied on real estate value increments attributable to factors other than readily identifiable public projects, while the former is levied on a realization basis, but the latter on an

accrual basis. On the other hand, the Land Development Charge(LDC) is a tax on increments in land value that accompany developing a piece of land. Also when zoning is changed from farm land or forest to urban, Conversion Charges are levied on the land.

< Table II-2 > Capital Gains Tax Revenue

	1985	1986	1987	1988	1989	1990	1991	1992	1993
1. Total Land Value	652.3	700.0	802.9	1023.6	1315.2	1614.5	1812.2	1789.2	1657.2
2. Accrued Aapital Gain	17.7	29.4	78.4	173.4	274.3	135.1	30.7	-133.6	-216.1
3.1 Individual Capital Gains Tax (land)	237.1	150.5	167.5	336.2	556.2	1038.3	1198.5	1331.6	1666.8
3.2. Individual Capital Gains Tax (building)	87.4	52.0	53.7	87.5	154.4	271.0	297.9	161.1	152.1
4.1. Corporate Income Tax (real estate)	77.2	74.1	79.9	89.8	148.6	303.7	521.6	1046.2	904.4
5. EIVLT	36.0	45.5	45.4	38.0	65.7	126.4	252.6	379.9	404.3
4.2. Special Additional Tax	6.6	5.4	21.5	40.2	143.2	33.9	103.1	36.5	122.2
4.3. Asset Revaluation Tax(land)	-	-	-	-	-	-	462.9	34.1	696.0
6. Total Capital Gains Tax	444.3	327.5	368.0	591.7	1068.1	2236.2	2047.8	2989.4	3945.8
6/2(%)	2.5	1.1	0.5	0.3	0.4	1.7	7.8	-	-

Notes: 1) The unit for 1 and 2 is trillion Won, and for 2-6 is billion Won.

2) Accrued capital gain is an estimated real capital gain from land, based upon total land value, average increase rate of land prices and GNP deflator.

3) The figures for tax revenue is, in principle, in terms of tax amount finalized.

4) 4.1 is calculated by applying the marginal tax rate 34 percent to the tax base of a Special Additional Tax.

### *A. Capital Gains Tax under Income Tax System*

The Capital Gains Taxes (CGT) have been used as the most important instrument for various policy measures to curb real estate speculation. Policy-makers in Korea have never been seriously concerned with tax revenue since 1976, (when the Value Added Tax with a high tax rate of 10 percent was introduced, without a significant expansion of government expenditure including the social welfare program) but with regulatory purposes particularly in the case of the Capital Gains Taxes (CGT). The Korean government adopted cyclical control measures and reactivating measures, mainly through the frequent revision of the real estate Capital Gains Tax law. In response to the surge in speculative buying of real estate, the government moved toward a harsh tax treatment of capital gains on transactions in real estate. But, in response to economic recessions, the government relaxed the tax treatment of capital gains.

In 1967, an Anti-speculation Tax was enacted. It applied to Seoul, Pusan, and other areas only, specified by presidential decree. It was incorporated into the income tax system in 1975. Capital Gains Taxes existed as a supplementary tax to back up the ordinary income tax. Capital Gains Tax in Korea are levied separately from ordinary income when property (mainly land, building and rights to real estate) is sold.

Korea appears to have a commendable approach to the taxation of capital gains compared to most industrial countries. Korea's Capital Gains Tax rate is very high. If a property was held by an individual for more than two years, the marginal tax rate is 40 percent for up to 30 million won, 45 percent for up to 60 million won, 50 percent for the value beyond 100 million won, 55 percent for up to 500 million won, and 60 percent for over 500 million won.

The tax rate schedule is much higher for property held less than two years: The flat tax rate is 60 percent without any deduction, and the flat tax rate of 75 percent is applied for assets transferred without registration. These provisions are introduced to prevent speculative demand on real estate. During the periods when the real estate prices rose sharply, many real estate traders still made large profits by quick turnovers.

By international standards, Korea's scheduler progressive real estate Capital Gains Tax rate is unusually onerous. Among OECD countries with a scheduler capital gains tax, only Denmark begins to approach the Korean level of tax rates, with a flat tax of 50 percent on all capital gains. However, in Denmark, the cost of real property is indexed according to the length of ownership and other adjustments. In other countries, the rate varies from 10 percent in Portugal to 40 percent in Switzerland.

Although the Capital Gains Taxes apply extremely high tax rates to real estate that is held for a relatively short period of time, real estate held for a relatively long period are not exempted. This is a basic difference between the Capital Gains Taxes in Korea and those anti-speculation taxes in Ontario, Vermont, New Zealand, or Malaysia.

The tax base is calculated on the sales price less purchase price less capital improvements less the basic deduction less appreciation at the rate of increase of the wholesale price index. Thus, the law basically taxes only real and not nominal capital gains. Basing the tax on real rather than money capital gains represents a degree of economic sophistication that is rare among even advanced country governments. There are additional deductions in calculating taxable capital gains. Special deduction for long-term holding is given 10 percent of capital gains to the assets held for 5 years through 10 years and 30 percent of capital gains to those held over 10 years.

For corporations with capital gains, two types of taxes simultaneously apply: real estate capital gains is primarily included in the taxable income for corporation income tax, and, after the ordinary taxation, Special Additional Tax on capital gains which is separately levied at the rate of 25 percent (40 percent for the transfer without registration) for the equity with individual income tax on capital gains and for the restraint of holding real estate for "non-business purposes".

Capital Gains Tax on real estate sale have, in fact, affected few persons mainly because many who should come within the tax net avoid the tax and partly because anonymous 'no-name' assets makes it difficult for the tax authorities to cross-check real estate transactions and ownership until recently. The most serious drawback of the real estate Capital Gains

Tax is that non-recognition, the exemptions and reductions have been widely permitted. Tax loopholes have been widened mainly during recession periods such as the early 1970s and 1980s. Exemptions or relieves for gains on some classes of asset are provided in all OECD countries. Probably the most important class in terms of revenue forgone is the principal residence. Exemptions for productive assets, so far as they exist, are found in the areas of agriculture and forestry; but in some OECD countries, the tax on gains referable to other types of business asset may be rolled over if the gains are reinvested in business assets(OECD, 1988). In Korea, however, it has been permitted to exempt the capital gains on the sale of primary residence, forestland, farm land, pasture ground, factory site, reclaimed land and so on, under some conditions which can be easily satisfied.

Capital gains from an individual taxpayer's transfer of securities or shares have not been recognized as taxable income. Thus wealthy landowners can avoid the real estate Capital Gains Taxes by transforming capital gains on real estate into those on financial securities. To protect such avoidance, the government made a provision for tax capital gains of securities and shares in the following cases: 1) transfer of 50 percent or more securities or shares of a corporation whose holding of real estate amount to 50 percent or more of its total assets; 2) transfer of securities or shares of a corporation which runs a golf club, a ski club, a condominium or, a recreation business, and whose holdings of real estate amount to 80 percent or more of its total assets. Again recently, the new provision was introduced where capital gains from an individual taxpayer's transfer of shares in an unlisted company is taxed at the rate of 20 percent. Capital gains from an individual taxpayer's transfer of shares in a listed company is still not recognized as a taxable income.

Exemption or substantial relief for gains arising on the disposal of principal private residences appears to be almost universal in OECD countries; Switzerland is an exception. The detailed conditions attached to the relief vary from country to country. Generally, of course, it is necessary that the property has genuinely been the taxpayer's own residence. In a number of countries such as the United States, Spain and Sweden, relief is

not allowed unless the taxpayer buys another residence within a certain time after disposing of the previous one. The tax in Korea, however, is entirely exempted for a primary residence if the owner has occupied it for more than three years or held it for more than five years. Otherwise, a preferential tax rate of 30 percent is applied for small homes. Also the tax is entirely exempted for a factory site and pastoral land if the owner has used it for more than two years; and for a farmland if the owner cultivated directly for more than 8 years .

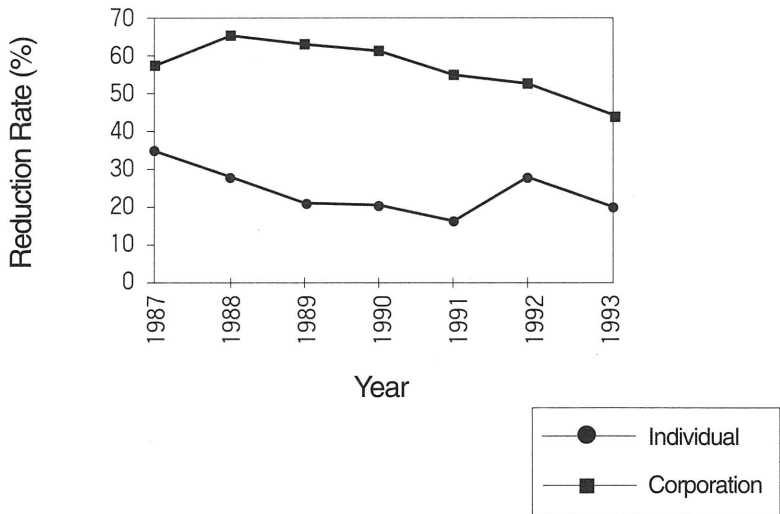
A fifty percent reduction in the tax rate is applicable for a property sold because of the government's forceful acquisition (eminent domain in the United States, as for construction of a road, an airport or public development of housing site); and for land transferred to a government, public project, or a project undertaken within an urban redevelopment district. Additionally, the exemption of Capital Gains Taxes has been used for mitigating housing problems: Capital Gains Taxes are exempted when a newly built house is transferred after renting for 10 or more years and 50 percent reduction of the tax is applied to land transferred to a constructor of small homes (called "national house").

At the corporate level, it doubles taxes on gains arising from real estate transaction, as noted above, without permitting any matching offset of real estate losses with gains. In fact, however, additional loopholes are open to corporations more than to individuals. It exempts from corporation tax accrued gains arising from voluntary revaluation of business assets, including land, under the Asset Revaluation Law and taxes them at a substantially preferential rate. The Assets Revaluation Tax provides potential tax benefits (a very preferential 3 percent rate and eligibility for increased capital deductions). Furthermore, various exemptions of the Special Additional Tax have been permitted to corporations for various policy purposes. For example, to promote a balanced regional development, the Special Additional Tax on capital gains arising from the factory, head office, etc., shall be reduced by 50 percent or may be deferred. The tax revenue from Special Additional Tax imposed on corporations has been negligible, although the big corporations are believed to have led the land speculation.

<Figure II-5> shows that the reduction rate (defined as the ratio of the total explicit exemption and reduction under the Tax Exemption and Reduction Control Law relative to the total tax amount calculated) for individual Capital Gains Tax was 34.5 percent in 1987. The reduction rate for the Special Additional Tax on corporate capital gains was above 60 percent between 1988 and 1990. As a result, the real estate Capital Gains Tax has never been effective. Tax loopholes allow land speculators to avoid Capital Gains Tax without difficulty. The situation has been considerably improved by a series of tax reforms since 1988, in which special exemptions and deductions for Capital Gains Taxes were partly eliminated. As a result, the reduction rate for individual Capital Gains Tax declined to 20.1 percent, and, in 1993, that for corporate Capital Gains Tax also declined to 43.6 percent (though the rates are still substantial).

It is likely that the stiffening of the Capital Gains Tax rate may have had a psychological impact on the real estate market, dampening speculative initiatives. On the other hand, such an extremely high nominal rate

< Figure II-5 > The Reduction Rate of Capital Gains Tax



constitutes, in part at least, a concession to those who maintain special relieves for many cases, and thus opens considerable loopholes for tax avoidance. Such manipulations have, in turn, evoked a complex system of rules and penalties designed to prevent such tax avoidance. These provisions, on the whole, have not only failed to effectively stop the avoidance and evasion but in many cases have also dealt harshly with individuals who happen to be caught by the legal provisions without having had any intention of avoiding taxes.

At least, the imposition of such an extremely high tax rate may have led many landowners to defer the sale of land in the hope that it will be ultimately reduced. Minimally, it may lead speculators to hold the land for two years in order to take advantage of the lower long-term rate. The high tax rate is likely to stimulate efforts at evasion. This may lead to a shift in the focus of speculators toward types of land and buildings for which evasion is more readily managed. This has already happened in Korea, because wide loopholes have been opened.

Security capital gains have been even unrecognized as taxable income. The income tax in Korea, in fact, has been similar to a scheduler income tax that exempts most capital gains taxes, regardless of the rate treatment of realized gains. The most important step government should take is to close all loopholes. It is also very important to abolish all exemptions and the preferential treatment of capital gains for improving tax administration. Checking whether a realized capital gain is taxable or not involves almost impossible administrative problems due to various exemptions permitted. Neither underdeclarations can be checked because cross-check mechanisms have collapsed due to various exemptions. The high rates of real estate transfer taxes have led to exacerbate the problem by discouraging legal registration although contractual relationships were made. The Acquisition Tax and Registration Tax are levied on the transferee at the time of exchange with tax rate 2 and 3 percent of the purchase price, respectively, rates which are relatively high when compared to the other countries (only Spain and Germany are higher). Thus, to improve tax administration as well as equity and efficiency, it is advisable to repeal the Acquisition Tax and the Registration Tax. As a second-best alternative,

policymakers must reduce these tax rates as the effective tax rate of Comprehensive Land Value Tax is raised.

Another important drawback of the tax is caused by lock-in effect. Taxing capital gains on a realization basis has undesirable consequences--the lock-in effect. An incentive is built on to postpone realization. Since this would postpone the payments of taxes, the land-owner whose value has increased will benefit from what amounts to an interest-free loan of the tax payment. This incentive would reduce the supply of marketed land, and thus tend to raise prices, shifting the tax to the buyer. In order to avoid this problem, it is necessary to tax capital gains on accrual rather than realization. Taxation on accrual, however, might force land owners to sell land prematurely in order to obtain the money to pay the tax (liquidity problem). So it seems best to levy regularly only what amount of an interest of the tax payment on accrual capital gain until the realization. The capital gains tax itself can then be taxed at the realization.

Capital gains on assets must be taxed at the point of gifts and bequest. Otherwise, a valuable estate can pass from generation to generation without ever paying capital gains tax--there is complete exemption of capital gains from the income tax. It encourages a lock-in effect as an asset-owner approaches the later years of his life. Because the present estate/inheritance duty operates inadequately, it is more necessary for gifts and bequests to be liable to capital gains tax.<sup>9</sup>

### ***B. Excessively-Increased Value of Land Tax***

As real estate inflation reemerged in late 1980s, the Government introduced the so called "Public Concept in Land" system. As a part of the system, two additional variations of real estate capital gains tax -the Excessively-increased Land Value Tax and Land Development Charge - was introduced in 1989, rather than reforming the existing Capital Gains Tax.

Excessively-Increased Value of Land Tax (EIVLT) is a tax levied on unrealized land value increments of "idle and non-business land" in excess

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9. These issues will be discussed in detail in section V.

of the "normal increase rate" in land value. The tax is assessed regularly every three years. But it is levied annually on land in the Special Region designated by the Commissioner of the National Tax Administration where land price rises beyond 1.5 times the normal increase rate. The tax levies a 50 percent tax on the portion of land value increments less the portion at the normal land price increase rate less improvement cost. The "normal increase rate" is defined as the increase rate which is interest rate of time deposit or national average increasing rate in land value, whichever is higher, and can be adjusted within the range of plus or minus 30 percent by the Commissioner of the National Tax Administration.

Given such problems of capital gains tax on a realization basis as lock-in and tax arbitrage, there is great appeal to the prospect of switching to a tax on accrued capital gains. Economists tended to emphasize the economic benefits of accrual taxation. Simplification of the tax law and complete elimination of lock-in were those most often cited.

Taxing capital gains on accrual, however, would suffer from serious administrative difficulties, which have generally been found to be insurmountable. Taxation of capital gains on an accrual basis would require the taxpayer to inventory his asset with each return, value them, and add the change in value during the year to his other taxable income. Accrual taxation would not be difficult to impose in the case of liquid, marketable assets such as publicly-traded corporate shares and bonds. However, there are two problems in other assets. First, some assets (notably real estate and closely held enterprises) are difficult to value; until they are sold they are almost insuperable (the "valuation" problem). These valuation difficulties would probably favor assets that are hard to value, just as property assessment tends to favor properties with rare characteristics whose value is uncertain. Second, investors might encounter difficulty in raising the funds to pay taxes on assets they have not sold. Liquidity constraints could enforce the premature sale of indivisible assets simply to pay the accruing taxes (the "liquidity" problem). Also accrual taxation would increase annual compliance and auditing costs.

A possible solution to valuation problem was suggested wherein the value of assets which lack a readily determinable market value could be

assessed by the owner with an accompanying (publicly announced) offer to sell the asset at, say, 20 percent above the valuation price. This is currently practiced in Taiwan. But this would be both cumbersome and expensive in terms of administration. These problems have led to the proposal that the taxation of capital gains on accrual should be limited to periodic intervals of some arbitrary number of years, like EILVT in Korea and Land Value Incremental Tax in Taiwan. If taxpayers could anticipate the year of paying taxes, they could arrange for the necessary liquid balances and valuations at less cost than if paying taxes were required annually. In addition, under a comprehensive income tax, periodic accrual would be linked to some scheme of averaging to determine tax liabilities, to avoid undue progression in the year of paying periodic accrual gains tax through either accumulative averaging (suggested by Vickrey) or proration method (suggested by David), which will be discussed in section V. Ease of administration, simplicity, and flexibility in realizing gains and incurring the corresponding tax liability, all favor the cumulative averaging scheme over periodic accrual.

Hence the capital gains tax on an accrual basis is, in fact, rare, found only in Italy, Denmark and Taiwan. A 1963 Italian law imposed a value increment tax on increases in the market value of building lots transferred or used for building. The tax is imposed when ten years have elapsed from the date of institution, even if the property has not been transferred, and every ten years thereafter. Tax rates are progressive and range from 15 percent on increases less than 30 percent in value to 50 percent on increases in value in excess of 500 percent. Denmark from 1933 to 1964 also taxed unrealized increments in land value. The tax was based upon assessments made at four-year intervals and was applied at an annual rate of 4 percent. The Taiwanese Tax is graduated and ranges from 20 percent on the first 100 percent increment to 80 percent on increments in excess of 300 percent. The tax is applied at ten-year intervals as well as at the time of sale (Smith, 1977). 20 percent of tax amount can be deducted if the taxpayer has improved the idle land. However, such provisions which tax on an accrual basis at ten-year interval have never been implemented so far.

Ideally, a capital gains tax should be imposed on appreciation of all kinds. The tax base of EIVLT, however, is extremely narrowly defined. The taxable objects under the EIVL Tax are restricted. Only the lands which satisfy both of the following conditions at the same time: 1) the land is designated as "idle land" or "land held for non-business purposes" as of the end of the taxable period; and 2) land whose price increases at faster rate than the "normal increase rate of land prices" during the taxable period (1.5 times faster rate for the annual EIVLT on a land in the Special Region designated by Commissioner of the National Tax Administration). The Official Land Value placed on an individual piece of land shall apply in calculating the land value. The tax base is not the capital gains itself of land accrued, but the capital gains of land accrued at the rate beyond the normal increase rate. Furthermore, the tax is applied only to land designated as "idle land" or "land for non-business purposes" (collectively "idle land"); that is, only the land presumed to be held for speculative purposes.

In principle, the lines of demarcation between investment and speculation and between capitalized future income and property cannot be rigorously drawn. The current EIVLT system has many of the arbitrary, unpopular, and complicated provisions designed chiefly to delineate speculators from investors. The "idle land" is usually defined as unused or underused land based upon the appearance of usage or the income to value ratio. For example, the land on which no building or trees are situated or the land on which only a small portion is covered by a building or by trees is recognized as idle land for tax purposes. Such arbitrary provisions raise not only the administrative problems--how to determine the degree of lower use of the land, but also efficiency and equity problems. It is not difficult to satisfy the legal requirements for avoiding the tax if the landowner has appropriate caution and sufficient liquidity to implement such a tax-avoiding strategy as building at a lower intensity. As one might expect, the tax incited a construction rush during 1990-93 to avoid the tax, which resulted in wasted resources and an inefficient use of scarce developed land, and also led to a sharp increase in wages and the price of construction materials by worsening an shortage condition.

The crucial drawback of EIVLT is the narrowness of its tax base. The regular EIVLT, assessed for the first time in 1993, was levied on only 0.8 percent of the total landowners, and 0.2 percent of the total land area owned by the private sector. The Annual EIVL tax revenue from Special Region was 463 billion won in 1991 and 34 billion won 1992. The Regular EIVL tax revenue from 94,147 land owners was 948 billion won. The tax revenue so far, however, is a transitory phenomenon, but will eventually disappear in the long run because the tax base erosion mechanism is built in the tax system. The tax is a sort of penalty on carelessness or lack of legal knowledge or adaptability to a new tax law; hence the tax base will become narrower and narrower as potential taxpayers adapt to the new tax law.

Also the tax works against the equity principle, due to arbitrary and narrow definition of the tax base. In principle, it is inequitable to levy a capital gains tax only on land presumed as idle and held for non-business purposes, because there is no difference with respect to ability-to-pay; that is, capital gains accrued between used and idle land. What seems all too likely is that EIVLT is going to have its greatest effect on the smaller land investors who, due to their liquidity position, cannot afford to hold the land for long periods of time and wait for it to appreciate. Also it can be convincingly argued that because the tax does not apply to land that has been used, the tax favors the big land holders who are large enough to systematically accumulate and develop land. It is actually observed that most of big land owners, including big conglomerates, can easily avoid the tax by disguising the use of their land as though it were for business purposes. Only the small landowners shall be subject to the tax, because they cannot afford to disguise in such a way, mainly because of liquidity constraint. As a result, the concentration of land ownership will be accelerated by this act. Though the initial effect of the tax may be to lead to a decrease on the price of land, this advantage may in the long run be offset by more rapidly increasing land prices as land accumulates in the hands of large landowners. These provisions, on the whole, have not only failed to effectively stop curbing land speculation but have also in many cases dealt excessively harshly with individuals who happen to be caught by the legal

provisions without having had any intention of land speculation.

The narrowness of the tax base such as a capital gains tax on an accrual basis with high tax rate of 50 percent may be inevitable in order to mitigate such insuperable administrative problems such as liquidity, valuation, and compliance problems, as well as administrative costs. Efforts to avoid such problems resulted in an extremely narrow tax base. Because of this, the tax is not only ineffective in curbing land speculation as intended but also has led to serious inefficiencies and inequities of tax burdens.

There has been strong resistance, as might be expected, among the affected land owners toward the surprisingly high taxes. Many appeals have been initiated from the taxpayers. 6.9 percent of the total taxpayers appealed the annual levies of both 1991 and 1992, comprising 43.0 percent of the total tax amount calculated. The appeal rate against the Regular levy of 1993 was lowered to 4.0 percent of the total taxpayers, with 21.9 percent of the total tax amount calculated.

The major disputes have arisen from arbitrary definition of taxable objects, and the intrinsic problems of a capital gains tax on an accrual basis, such as liquidity and valuation problems. Hot disputes between taxpayers and the tax administration office were raised how to determine the degree of land use intensity. Many taxpayers argue that the standards of designating "idle land" or "land for non-business purposes" are not reasonable. Many taxpayers argue that they hold the land for use in the future, rather than for speculative purposes. Due to political pressure, the standard has been frequently revised in the direction of narrowing the tax base. As a result, the tax revenue is expected to become negligible in the near future, because of two factors: the government's frequent revision of the standard to delineate a speculator from a user, and a taxpayer's efforts to avoid the tax by under optimal use of land.

The liquidity problem was serious because it is not rare that tax liability due is beyond the taxpayer's annual income. Additionally, it is difficult for an ordinary taxpayer to borrow money to pay the tax, due to the low level of development of capital market. This liquidity problem makes an ordinary taxpayer skeptical about the legitimacy of the capital gains tax on an accrual basis. To mitigate this liquidity problem, the EIVLT Law has the

provision to allow installment and payment in kind: When a person is liable to pay taxes over 10 million Won, he may be allowed to pay by installment or in-kind within 3 years. Also, he can ask the government to sell the land if his offer to pay the tax in-kind is rejected.

As not only whether a parcel of land is a taxable object, but also how much tax is due depend upon the valuation of land, the focus of resistance from the taxpayers has been on the valuation of the potential taxable land. Almost every taxpayer complains that the Official Land Value, which is the basis of EIVLT assessment, was higher than that perceived by him. There is virtually no way to resolve this problem because it is very difficult to evaluate the land price before the land is actually sold. Furthermore, the land-value system in Korea is not sophisticated enough to support a 50 percent tax rate on accrual basis.

The Official Land Value in Korea is a two-stage appraisal system. 1) On January first of each year, the value of each Representative Sample Land is appraised by Publicly-Certified Appraiser based upon conventional property appraisal techniques. Preparation of the Comparison Table is based upon the statistical technique of multiple regression, and survey data of land value and its physical and economic characteristics. 2) The Individual Land Value for the tax purposes is assessed on the basis of the appraised values of one or more neighboring Representative Sample Lands and the Comparison Table, considering the characteristics of the relevant land. This system has been criticized mainly on two points: Too few land samples are selected. For example, in 1994, only 300,000 lots (1.2 percent) of the total 25,000,000 lots were selected as Representative Sample Lands. In addition, the Individual Land Value has been assessed by non-experts.

It is not rare that the assessed value of a parcel of land be halved, and the tax liability be halved when a taxpayer appeals to the authority. A great deal of corruption is involved in this process, which leads to seriously distort the land valuation system as a whole.

Finally, on July 30, 1994, the Constitutional Court ruled that the EIVLT law is inconsistent with the intent of the Constitution. Assuming that the EIVLT has played a critical role in curbing the real estate speculation, the

Government decided to sustain this law for the time being until the Comprehensive Land Value Tax is strengthened, while amending some inconsistencies with the Constitution according to the court's decision.

After the Court pointed out the unconstitutional nature of the flat tax rate in the case of income tax, the tax rates were changed to 30 percent for the first taxable income of 10 million Won and 50 percent for amounts exceeding 10 million Won. The original EILVT Law did not have any provision of loss-offset. According to the Court's recommendation, the Law is revised in the way that the unrealized loss is allowed to be carried forward to offset the unrealized gain for subsequent taxable periods under restrictive conditions.

In order to avoid double taxation, the amount of the EIVLT already paid should be credited against the amount of the capital gains taxes imposed on the relevant land at the time of transfer. But the original EIVLT Law allows only a partial tax credit against the capital gains taxes. The tax credit rate differs depending on the timing of the transfer of the land in question after paying the EIVLT: 80 percent, 60 percent, and 40 percent respectively if the land is transferred within 1 year, 3 years, or 6 years after the taxation of EIVLT. The taxpayer may opt to deduct the entire amount of the EIVLT as necessary expenses from the taxable capital gains, instead of selecting a tax credit against the Capital Gains Tax. The intention of this rule is to reduce the lock-in effect by granting the incentive for earlier sales of the land. The Court, however, held that this partial credit system still has a double taxation problem. To compromise the Court's decision, the rule of the tax credit rate is revised in the following way: 100 percent, and 60 percent respectively if the land is transferred within 3 years, or 6 years after the taxation of EIVLT. If the land is then transferred after 6 years, the EIVLT can then be deducted as a necessary expense from taxable capital gain.

### *C. Land Development Charge*

The Land Development Charge (LCD) is another special capital gains tax on an accrual basis, which is levied on 30 kinds of development pro-

jects specially designated in the Law. Such projects consist of housing construction, residential land development, industrial site development, golf course development, and land use conversion for urban uses. LDC is equal to 50 percent of the land value differentials before and after the project, less development cost, less the "normal land price increase." LDC is only applied to projects that are larger than 660 square meters in the largest 6 cities (990 square meters in the other cities, 1650 square meters in rural areas).

LDC is regarded as a special EIVLT imposed only on large development projects; hence EIVLT is exempted when land is the object of LDC during the tax period of EIVLT. Also, in order to avoid double taxation, the amount of the LDC already paid should be credited against the amount of the Capital Gains Taxes imposed on the relevant land at the time of transfer, or vice versa. But the Laws have inadequate provisions to prevent double taxation between LDC and the Capital Gains Taxes; the LDC Law allows only the landowner to deduct the entire amount of the LDC paid as necessary development expenses from the taxable capital gains, instead of tax credit against the Capital Gains Tax.

The amount of LDC levied reached 22.7 billion Won from 189 projects in 1990, 143.5 billion Won from 627 projects in 1991, 133 billion Won from 627 projects in 1992, and 115 billion Won from 115 projects in 1993.

Ministry of Construction and Transportation administers the LDC, and local autonomies collect it. It is not directly linked to the public cost of a development project, and there is no flexibility for local autonomies. Half of LDC collected is spent for a general regional development project by local autonomy, but the other half is taken by the central government and allocated as a transfer to local autonomies. Thus LDC is not a kind of a development charge in the usual sense. Generally speaking, development charge is a special form of cost recovery for urban infrastructure projects. This principle feature is a lump-sum charge designed to recoup the public costs of developing urban infrastructure from the beneficiaries. This is usually imposed on the property owners in areas improved by public action. Development charge differs therefore from a capital gains tax or a land value increment tax in that it does not attempt to tax the increase in

the land value per se but aims to allocate infrastructure costs across benefiting properties. Thus LDC is closer in nature to a real estate capital gains tax, whereas Land Readjustment is a development charge, directly linked - in principle - to the cost of providing services.

LDC can be regarded as a charge on development permission. The Korean land-use control system is less a zoning system and more a permit system. Charges on development permission are a kind of price for the right to develop. It is hard to find a similar measure in other countries. The LDC may be similar in nature to the Development Charge or the Betterment Levy which was levied before 1970 in the United Kingdom.

A tremendous amount of windfall gains have been created from land use conversion primarily due to the rigidity of the land use control system, which is also one of the fundamental causes of the cyclical land price inflation in Korea, as pointed out before. For example, in Seoul, the land price increases by the factor of 10.8 for the up-zoning from Greenbelt to residential area, and by a factor of 22.8 for the up-zoning from Greenbelt to commercial area. Such windfall gains, however, were neither the object of LDC nor the object of EIVLT if the land is not recognized as an idle land in the EIVLT Law. The Government reformed the National Land Zoning System to increase the supply of urban land in 1994. The government revised the LDC Law in 1993 adding a device to recapture the gains from massive land use conversion expected from the changes in the national land use zoning system in 1994.

As LDC is a capital gains tax on an accrual basis, it also has the same problems as EIVLT--that is a valuation and liquidity problem. From the beginning, this measure generated many more appeals from the affected developers than EIVLT did in terms of the appeal rate: the appeal rate against LDC was 29.3 percent while that against EIVLT was 6.9 percent in 1990.

The single greatest practical problem asked about the impact of development permission or rezoning on property values is whether the impact can be measured. The capital gains for LDC is assessed based upon the Official Land Value or appraisal value by two Publicly Certified Appraisers using conventional property appraisal techniques, both of which may

deviate significantly from the actual prices. The conventional techniques are likely to be inaccurate if the land use control causes a major change in the way land is used in the area, thus creating a dramatic change in the price of the land. The 71.8 percent of appeals in 1992 disputed valuation. Accounting of capital expenditure for a project is also problematic: it accounted for 16.0 percent of appeals in 1992.

The liquidity problem is raised more seriously than EIVLT because the average amount of LDC levied per project reached 242 million Won while that of EIVLT levied per taxpayer was 10.6 million Won in 1992. The LDC is, however, less socially problematic than EIVLT because LDC is mainly imposed on the developers and EIVLT mainly on individuals. To mitigate this liquidity problem, LDC Law also has a provision to allow installment payment or payment in kind. When a developer is liable to pay taxes over 10 million Won, he can make an application to pay by installment or in-kind within 1 year if accepted by the authority.

LDC is likely to discourage land development. In particular, private development will be affected because most public developers are either totally exempted or reduced by 50 percent. This will harden the existing rigidity in supply of urban land, and also raise the prices of urban land, often contradictory to the major purpose of this measure of reducing land prices.

The most crucial drawback of LDC is the narrowness of the tax base. In general, the development project's effects on land value and zoning will be distributed widely throughout the area. They include the likelihood that one land use may make neighboring uses more or less desirable (externalities). There may be a jump in land prices at the zoning boundary, but it is hard to define the affected area. Thus LDC can, at best, only recapture those windfalls known at the time of development permission, and some windfalls would remain unrecaptured. The Development Charge approach cannot recapture the windfalls or the side effects of the adjacent area affected by a development project or a zoning change, which is likely to result in inequities among taxpayers affected. As the 1943 report of the English Uthwatt Committee pointed out, betterment recapture was only practical if all increases in value were included, other than those attribut-

able to the owner's own activities. Prior English legislation of Development Charge called only for recapture of value increases due to planning or public works.

### **5. A Proposal for Reform of Capital Gains Taxes**

Our analysis in section IV implies that the current system of real estate capital gains taxes has many drawbacks, such as a narrow tax base with high nominal tax rate, and that LDC or EIVLT can be neither a substitute for generally based (real estate) Capital Gains Taxes under income tax system (CGT) nor a satisfactory complement of them. Unless the transfer taxes such as Acquisition Tax and Registration Tax are not based upon increases in value, they cannot be considered as a windfall recapture devices.

The distinguishing feature of Capital Gains Taxes under income tax system (CGT) is their tax base, which is the increase in value of real estate. They are not limited to the recapture of increases in the value of private property caused by particular projects or actions, neither are they limited to the abnormal increases in the value of idle land. Capital Gains Taxes (CGT) can be designed to replace EIVLT or LDC. Capital Gains Taxes can be reformed to serve the ends of such taxes more efficiently and more equitably and with much less compliance and administrative costs. If Capital Gains Taxes assume the leading role by being reformed in terms of moderate tax rates and a comprehensive base, EIVLT and LDC will be redundant ultimately the increase in land value will be caught by the Capital Gains Tax. Further, the administration of EIVLT and LDC is complex and costly because government agencies have to decide whether such accrual-basis capital gains taxes is due, how much the increase in value is, and how it relates to the Capital Gains Taxes. Hence, it is advisable that both EIVLT and LDC should be repealed with reforming CGT. We will concentrate on how to reform Capital Gains Tax under income tax system in Korea in the following subsections.

In the analysis below, an attempt is made to develop a reform proposal of Capital Gains Taxes at the points of equity and efficiency, also con-

sidering probable compliance and administrative problems. This proposal aims for improvement, not perfection of the tax system. As emphasized before, widening the scope of asset transactions eligible for Capital Gains Taxation by eliminating special provisions of reductions and exemptions and including capital gains on financial asset would be a major step in improving efficiency and equity. A change in the Capital Gains Taxation of assets transferred by gift or bequest would be another, perhaps larger, step. Periodic interest charges on deferral tax payments, together with constructive realization, would offer a solution to the problem of lock-in. The proration of gains would make the full inclusion of gains in comprehensive income reasonably equitable under a progressive tax system.

For convenience, however, we will begin the discussion with revision of the underlying framework to solve the lock-in and bunching problem. The paradigm of economic policy should be reformed before such reform proposals are actually implemented.

### *A. The Purposes of the Capital Gains Taxes*

Clarifying the purposes of capital gains taxes is fundamental to devising a workable policy. Broadly speaking, there are two approaches in taxing capital gains: a general capital gains tax based on the general ability-to-pay principle and the accretion definition of income; and a special real estate capital gains tax which is selective capital gains tax that is imposed on a restricted class of capital gains pertaining to real estate for the purpose of anti-speculation and/or windfalls recapture. The special real estate capital gains tax has been usually experimented with in some states or provinces of the countries that do not have general capital gains taxes, like Canada, Australia, New Zealand, and England. Most of these taxes were either short-lived or loosely enforced. There is yet no proven evidence that a special real estate capital gains tax may work well either as tax or regulation.

As shown before, there has been a great deal of political and public concern with land speculation. Policy-makers in Korea have had combats with real estate speculators, despite lack of evidence on the role of specu-

lators in the development of land problems. It is likely that policy-makers regard investor's rational behavior to exploit arbitrage opportunities in disequilibrium states of asset markets due to government intervention as speculators. Such anti-speculation sentiment was an important factor in the development of Capital Gains Taxes in Korea, similarly to the Ontario Land Speculation Tax, New Zealand Land Speculation Tax and Vermont Land Gains Tax.

A primary rationale for the capital gains taxes in Korea has been to deter either the sale or purchase of real estate in which a short holding period is anticipated and the intended principal economic return will come from value increments rather than rents. So, policy-makers made a complex set of provisions in every land-related tax law to arbitrarily distinguish speculators from productive users of land in its own way, and then imposed a heavy penalty on speculators in an effort to curb real estate speculation. On the other hand, these high tax rates inevitably provided tax relief via various exemptions, and deductions for productive users of land.

This policy assumes that the land problem in Korea has been caused mainly by a few speculators, and that it is possible for government authority to distinguish speculators from ordinary productive users. However, neither of these two assumptions may be true.

In principle, it is not possible to precisely distinguish speculators from ordinary productive users among land holders, at least from the point of view of government authorities, because land has a dual character: it is an input in the production of all goods and services. Also it is an asset for saving. Corresponding to this dual character, land provides two kinds of income streams to the owner-income return (e.g. rent) and capital gain, even though these two are closely related. Speculators can be defined as persons who buy and sell land for the sake of anticipated capital gain. Speculators may also be using land at the time of anticipation. Homeowners are typically speculators in part, as are farmers and owners of factory sites, woodlands and pastures. In Korea the average rate of return on land has been much higher with less risk than the other assets such as financial assets. Almost all land owners have been provided with rent and capital gains at the same time. Thus it is almost impossible for the tax authority

to distinguish a speculator from a productive user among various land owners without ambiguity and arbitrariness to some extent.

Although exemptions and deductions for productive users may be inevitable under such high tax rates, these, in turn, result in almost insurmountable administrative problems, widespread tax avoidance, and evasions. Also these complicated tax provisions provide government officers with tremendous discretion, and make it difficult to audit the process of the tax administration, resulting in widespread corruption in the process of implementing tax law.

The role of speculation in land prices is also an unresolved issue. Most economists believe that speculators help the market function properly. Speculation is often hailed as a good thing because it may cause the market to adjust more rapidly to its true equilibrium price, hence giving more accurate price signals to resource users and improving the efficiency with which resources are allocated. Speculative returns are merely the returns of those who take the risk of market middlemen. Ultimately, the price is determined by user demand. These notions, however, have developed largely from the studies of speculation in other than real estate markets, notably foreign exchange markets, agricultural product future markets and stock exchanges.

On the other hand, Henry George(1946) and his followers-Fred Harrison (1883)- argue that speculation in products tends to stimulate production, whereas speculation in land tends to check production. Speculation in products tends to increase the price, which induces more production and tends to lower the price again. Throughout this cycle there is a stimulating effect on production. Speculation in land also increases its price. Since the total supply of land is fixed, land prices rise beyond the level at which labor and capital can profitably engage in production. The inevitable result is to check production. Real estate markets adjust more slowly, are marked by substantially imperfect information, and are influenced by expectations far into the future than are other production markets. Quite likely, due to these factors, speculation causes property prices to deviate from equilibrium values for extended periods of time (Misczynski, 1977).

Apparently no one has any defensible evidence of the relative impor-

tance played by speculators in contributing to the cyclical land price inflation in Korea. Our analysis on the causes of land price inflation in Korea in chapter 1 implies that "speculators"--defined in the tax laws in Korea as seeking short-term windfalls without the intention of using land for productive purposes--may simply be scapegoats for land price inflation which is principally due to government failure.

In sum, the regulatory purpose of the Capital Gains Taxes in Korea has inevitably been a self-defeating one: the taxes inevitably fail in curbing real estate speculation because the target is pointless and the tax base becomes narrower in the process of pursuing the false purpose. Such taxes also raises various problems in terms of equity and efficiency. For instance, it is often observed that large-scale investors have expert tax advice and are able to use various exemptions to avoid the tax while the small investors are caught.

The lessons from past experiences are the following: it is virtually impossible for the government to control land prices with discretionary measures such as Capital Gains Taxes and/or direct intervention in a economy which is fundamentally distorted by a centrally administered economic order. This is primarily due to an informational problem, or the permanent limitations of our factual knowledge. Thus, it is fundamental in devising a new economic policy to convert the policy paradigm from constructivist rationalism to evolutionary liberalism in the Hayek's (1982) sense<sup>10</sup>. More specifically, the new Capital Gains Tax should not be motivated by a desire to prevent transactions in real estate or to prevent development. It is thus recommendable to switch policy from a special real estate speculation tax to a general capital gains tax. A special real estate capital gains tax, for example, permits avoidance of the tax by transfer of corporation shares or dissolution. Trying to solve it simply magnified the complexity. The Capital Gains Tax system with a moderate tax rate and a broad base is superior to that with a high tax rate and narrow base in terms of the effectiveness of curbing land price inflation as well as equity and efficiency.

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10. See Lee(1995) for a detailed discussion.

### ***B. Proposals for Reducing Lock-in Effect***

Virtually every other country in the world that taxes income imposes a capital gains tax only upon the realization of gains rather than on accrual. As long as the taxpayer is allowed to determine the timing of realization of accrued gains, he can benefit from the postponement of tax liabilities in three ways: (1) under a comprehensive income tax, he may defer tax payments to years in which he is taxable at low marginal rates; (2) he may use the interest free loan resulting from postponement of tax liabilities; and (3) he may have the capital gains held until his death are not taxed at all.

Hence the effective tax rate on accrued capital gains is well below the statutory rate. The system of taxation upon realization distorts behavior because the rate at which it taxes the income arising from assets depends on the size of the previous unrealized gains. This induces both the lock-in effect and deferral-related tax arbitrage.

The most frequently discussed problem arising from capital gains upon realization is the lock-in effect--the desire to hold appreciated assets in order to defer taxes on gains already accrued. This effect leads investors to accept a lower before-tax rate of return than they would for new investment without such accrued gains, resulting in a distorted allocation of resources and an inefficient portfolio selection. This implies that scarce land can not be most efficiently used due to lock-in for the current owner, further resulting in a failure of dynamic efficiency. This means that it may prevent land from being transferred to those who will use it more productively, and it could reduce the amount of land which otherwise would be available for development purposes.

The amount of the lock-in effect varies with the length of the remaining useful life of the asset. The shorter the period over which the taxpayer could defer his realization of gain by retaining the asset, the smaller the lock-in effect. Since land has indefinite useful life, the lock-in effect would occur most substantially to the landowners. Also the amount as well as the therapy of lock-in effect is quite different between a landowner who is concerned about the timing of sales and one with the intention to hold land permanently. Hence we will examine these two cases separately in the fol-

lowing subsections.

### **1) The Timing of Asset Sales**

We begin the analysis with the former case. Lock-in effect in the case of a reserved demander for land who is concerned about timing of sales is caused by the benefit (2).

Closely related to the lock-in effect is the general problem of tax-avoidance facilitated by the voluntary nature of realization. Because losses as well as gains have their tax burdens deferred until realization, aggressive application of the simple rule of holding gains and realizing losses permits taxpayers to generate tax reductions (Constandindes, 1983; Stiglitz, 1983). In order to prevent this arbitrage possibility, the present Korean tax system does not allow deduction for such losses. This also distorts the choice of investment away from more risky assets which are more likely to produce losses. This will lead to deduction of venture capital. In order to make Capital Gains Tax equitable, avoid reducing risk-taking and satisfy the demand by the Korean Constitutional Court in the case of EIVLT, the Korean tax system might incorporate a full-loss offset. Then, a realization-based income tax with full-loss offset could create a tax arbitrage opportunity.

So far, we have assumed that there are only two assets to focus on the imbalance between financial markets and land markets (which is regarded as one of the major causes of land problem as noted in Section II). In reality, however, there are various assets in land markets as well as in financial markets. Hence two different kinds of problems for efficient resource allocation in Korea exist: One is inefficient allocation of resources between financial markets and land (or real estate) markets and the other is inefficient allocation within land markets.

The above analysis implies that financial liberalization is required to solve the former problem and to pop the speculative bubble in the land market in Korea. As the financial liberalization progress, the capital gains tax will be likely to emerge as a major factor in lock-in problem. In order to solve the latter problem, that is, to improve allocative efficiency of scarce land, gains and losses on land may be made taxable on accrual. But

our discussion in Section 4 showed that capital gains tax on an accrual basis is not practical.

a) Capital Gains Tax with the Accrued Interest.

The taxation of capital gains on accrual poses almost insuperably difficult compliance and administrative problems. An alternative solution to the liquidity problem is a realization-based tax that offsets the deferral advantage of holding gains, which was proposed by William Vickrey (1939) as part of a system of cumulative averaging for income tax.

Under this system, capital gains taxes are computed on an accrual basis but allow deferral of payment of these taxes, and collected with interest only upon realization. This would reduce the benefit from deferring tax liabilities by crediting the taxpayer with the interest on the cumulative value of tax payment and computing tax liabilities on the basis of an adjusted cumulated total income. From comparison of (3-14) and (3-15), it is clear that charging interest on the taxes accruing unrealized gains would eliminate the deferral advantage. By construction, it would eliminate the lock-in effect and the tax arbitrage possibilities generated by selective realization, because of equivalence to accrual tax. At the same time, it would remedy the liquidity problem of accrual taxation by collecting the tax only when sales actually occurred.

However, this approach is plagued by the first problem of accrual taxation mentioned above, that of valuation, for it requires information not only of total gain, but the pattern of the gainer's accumulation over time. Taxes on gains accrued earlier in the asset's holding period should be charged more interest. For example, if an asset has increased in value over ten years, the taxes in the realized gain needed to simulate accrual taxation would be ordinary tax rate if the gain occurred entirely in the tenth year, but this tax rate compounded by one plus the relevant interest rate to the ninth power if the entire gain occurred during the first year of ownership. Thus Vickrey's system of cumulative averaging requires information on the past time pattern of accrued gains.

For assets that are difficult for tax authorities to value except when sold, it will be hard upon sale to compute tax liability because the tax

authority must evaluate what the time pattern of accrual of realized gains was. This makes it almost impossible to make the retrospective tax liability equal in present value to an annual tax on the asset's accrued gains (Green/Sheshinski, 1978). Clearly, many capital assets, such as publicly traded corporation shares and bonds, could be marked to market each year to avoid the valuation problem. However, hard-to-value assets, such as land and closely-held corporation shares, raise the valuation problem. To avoid such a problem, Auerbach(1991) suggests method of retrospective capital gains taxation that does not require knowledge of the potentially unobservable pattern of gains over time. His system, however, presupposes that the before-tax return on capital asset is equal to the before-tax return on the safe asset, adjusting for risk. Auerbach's system is not holding period neutral if the expected increase rate of land prices is higher than the expected interest rate like in Korea, and can not be regarded as a capital gains tax.

This valuation problem in real estate capital gains tax with the accrued interest may not be serious in Korea. Because the Official Land Value of each parcel of land on January first has been evaluated every year since 1990, the price can be used for tax purposes as a good approximate. Disputes over valuation would be relatively minor, at least less serious than under pure accruals-based tax of Excessively Increased Value of Land Tax.

But in the real world, tax laws change so frequently (notably, capital gains taxes in most countries, like the United Kingdom), that investors may have a wait-and-see strategy until the capital gains tax law is repealed or weakened. Capital gains tax has been intrinsically weak in politics because it is not imposed recurrently but incidentally. Korean experience of capital gains taxes over 27 years was a case in point. This, however, is not peculiar to Korea only. Development Land Tax in the United Kingdom and Land Gains Tax in Vermont in the United States, for example, have a similar history (Baker/Andersen,1982). Announcement effects, as Bailey (1969) noted, occur when the relationship between expected taxes and expected income depend upon factors such as the industry or activity in which the income is earned, and other factors which the recipi-

ent of income can control or influence by deliberate choice. If investors actually expect that the capital gains tax with an interest charge on deferral could be repealed eventually, the announcement effect, the effectiveness of the tax to curb land price inflation will be weakened to the extent.

Thus, a mixed version of Vickrey's cumulative averaging and Excessively Increased Value of Land Tax would be a better policy option in practice. That is, the interest charge on deferred tax payment would be imposed annually (or periodically) and the principle of tax liabilities would be imposed at the time of final realization. If the system is based on the annual assessment system of the Official Land Value, annual interest charge on deferred payment of capital gains tax could be quickly and cheaply calculated in the following way.

$$\text{annual interest charge on deferred tax payment} = (1-t) i \times t \times (\text{current price} - \text{acquisition cost}) \quad (3-17)$$

Along with an Aggregate Land Value Tax bill, each landowner would receive a statement for an accrued capital gains tax liability and an interest charge payment due on it during the year. The initial base value from which to measure accrued capital gain would be the assessed value on the date this new system takes effect to avoid the problem of retrospective taxation. It might base the interest rate for calculating accrued interest charge on the yield of government bonds, or on prime commercial paper, or on brokers' loans. For simplicity, the interest rate might be tied by formula into some moving average rate. Note that the interest rate should be a post-tax interest rate to reflect the net rate of return which the taxpayer could have obtained on the postponed payment of tax. Under a progressive tax rate schedule, it would be difficult to calculate each taxpayer's marginal tax rate for calculating an interest charge for deferral. The practical alternative may be to use the single fixed tax rate, or the maximum marginal tax rate for individuals. The nominal interest rate would be reduced by the chosen tax rate to give a post-tax interest rate. To save administrative cost, the interest charge may be exempted if the increase rate of the property is less, say, 10 percent or less.

While some investors, under this system who access investments that earn above the government's credited rate of interest and/or who face above average marginal tax rate, would still find it in their interest to defer tax payment, this interest adjustment substantially reduces the extent to which it would be advantageous. If the proposed system is associated with an interest rate that adequately reflected the market rate of return, it would be even more effective than periodic accrual taxation with a narrow tax base like EIVLT., because it can have a much broader tax base with less valuation and liquidity problems. Such a system would eliminate the incentive for deferment. Under this system, each investor would decide for himself when trading of assets and payment of taxes were most appropriate. There would be no need to arbitrarily distinguish various investor groups, including speculators from investors, to avoid valuation and liquidity problems. Electronic data processing would make accounting easy and exact if the registry of real estate were additionally electrolyzed. This would make it possible to widen further the Capital Gains Tax base including not only all land but all appreciated assets such as corporation shares and bonds. When the capital gains on financial securities is included in the income tax system, the method proposed by Shakow(1986) can be adopted for valuation and administration.

## **2) Permanent Holding during Lifetime: Constructive Realization versus Carry-over of Basis**

The discussion so far does not take into consideration the possibility of holding land permanently. But some land is bequeathed from generation to generation. Under these circumstances, the landowner's problem is to choose between holding land permanently or selling it at a point in time. The lock-in effect of capital gains tax on a realization basis tends to be strong, due to the benefit (3) above from the postponement of selling the land.

The rules on basis and recognition permit the exemption of gain passing into the taxpayer's estate. Accrued capital gains on the property of a taxpayer at the time of his death are not recognized as income on the final return of the decedent. At the same time, the property passes to the heirs

with a stepped-up basis so that the appreciation that took place during the decedent's lifetime is never subject to income tax. There is no justification for the present step-up of basis at death.

In the United States, David (1968) estimated that at least three-fourths of the gains on stocks are unrealized during the lifetime of the investor. This appreciation passes to the hands of the succeeding generation with a stepped-up basis for taxation. This zero rate of taxation at death due to step-up basis is a major cause of lock-in in any country which adopts the step-up basis. It increases as an investor becomes older and his accrued capital gains becomes larger. The share of real estate in taxable bequests is over 80 percent in Korea, about 60 percent in Japan, while the comparable ratio in the United States is about 25 percent--partly attributed to the wide-spread avoidance of real estate Capital Gains Taxes in Korea and Japan.

Taxation of capital gains on assets in a decedent's asset would be appropriate on equity grounds. This lock-in effect could be eliminated in either of two ways:<sup>11</sup>

a) Property transmitted at death could be taxed on the presumption that passage into the estate constitutes a realization of taxable income (constructive realization).

b) The transferee could be required to consider the decedent's basis as their basis for computing the capital gains tax owing on the transferred property in the future (carry-over of basis).

Although either method would ultimately subject assets to capital gains taxation, they differ in administrative aspects. If the principle of constructive realization was followed, capital gains would have to be subject to tax prior to bequest. The only incentive to hold assets beyond an optimum time of sale would arise from the deferral of taxes. If the advantage of deferral tax could be removed through periodic interest charge on

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11. Section B and C is based mainly on a classical work on capital gains tax by David(1968). See David(1968) for more details.

deferred tax payment, constructive realization would create some incentive for taxpayers to realize gains prior to death. This may also provide transferee with enough liquidity for the payment of capital gains tax on the appreciation in an estate, which might prevent unfavorable sales at death. Constructive realization might entail administrative difficulties of valuation and liquidity for tax payment if the real estate and the closely held business were included in the inheritance. These problems, however, are already present in estate/gift tax computation and compliance. Payment of taxes in installments could be extended to the terminal capital gains taxes to minimize the liquidity problem. Some exemption might be provided for the widow and dependent children to alleviate the economic problems of survivors. The estate and gift taxes would be changed in order to avoid double taxation in such a way that the value of any capital gains taxes paid on estates and gifts should be deducted from the value subject to those transfer taxes.

If the carry-over of basis were applied to bequests, no new problems of liquidity or loss credits would arise as is in the case of constructive realization. This is because the timing of realization would be voluntary and would be accompanied by cash receipts in most cases. The heirs would always have the option of retaining assets rather than paying taxes. Carry-over of basis would not solve, and might aggravate the existing use, of voluntary realization to defer tax liability. This would create less incentive to dispose of assets at the optimum time of sale than would constructive realization. Assets could still be held indefinitely without being subject to tax. But such problems of lock-in and tax arbitrage can be overcome, at least in theory, if an interest adjustment on deferred tax payment is charged.

Also carry-over of basis would entail substantial difficulties due to allocation problems and information that would be required under such a system. Providing exemptions for widows and dependents would be cumbersome, since the value of the exemption would have to be allocated to particular assets. Executors of estates and fiduciaries would have to allocate both the current value of an estate and its basis to the various heirs. Carry-over of basis also would create administrative difficulties in allocating

basis. Each asset in the estate would additionally carry with it a basis value that could mean tax liabilities or benefits to the heir. The benefits and liabilities inherent in the decedent's basis would have to be apportioned among heirs according to the testamentary formula. This would require each taxpayer to maintain records of the basis of property acquired by gifts or bequest. Although knowledge of basis would also be required under constructive realization, record-keeping problems would be less difficult. Under constructive realization, the basis would always be the market value of the asset on the date acquired, and only the ownership of the present asset would have to be considered. Under carry-over, however, the basis could be different from the market value on the date of acquisition by the present holder; making it necessary to trace the ownership of the asset through the previous owners to determine its basis value. Any break in the chain of records required would make it difficult to assess capital gains taxes properly when the asset was ultimately sold. This problem could be overcome in the case of real estate if the price in each transaction is registered, but not in the case of financial securities.

In short, constructive realization might be preferred to a carry-over of basis: constructive realization would be a more effective instrument for applying taxes to appreciated assets. This effect makes asset markets more efficient. Constructive realization would also create less administrative difficulties. Furthermore, since the population subject to the estate tax would account for nearly all the appreciation in capital assets, the administrative mechanisms applied to estate taxation could be easily extended to constructive realization of capital gains on all such transfers. The treatment of transfers between living individuals should correspond with the treatment of property passing to new ownership at death. Otherwise, property donated in anticipation of death would be taxed differently from bequests, thus creating tax-avoidance behavior. So gifts between living individuals ought also to be presumed to be realized for tax purposes. Consideration of need to justify exempting small estates from transfer taxation may also justify exemption from capital gains tax of any appreciation inherent in those assets. If the increase in tax burden resulting from constructive realization of capital gains would create dislocations in the

operation of small business or radical changes in consumption by a surviving spouse, it would be desirable to raise the exemption level and/or reduce tax rates. Typically death taxes need not be paid immediately. Some similar leeway should be allowed to pay the capital gains tax.

To increase the administrative feasibility of constructive realization, certain classes of assets could be excluded on which gains were unlikely or hard to value, such as household furniture, jewelry and other items which are presently exempted from the estate tax. It is natural to allow a decedent to carry back losses if constructive realization were enacted. However, if losses could be deducted from the net value of the estate, then a rough reduction in tax liability could be achieved through estate tax. The need to go back and amend past income tax returns would be eliminated.

### *C. Bunching Problem and Averaging*

One of the primary arguments for a separate treatment of income from capital gains, and the special Deduction for Long-term Capital Gains since 1989 in Korean Individual Income Tax is that such income has taken place over several tax years. With progressive tax rates and full taxation of capital gains in the year of realization, it could fall into higher marginal tax rate brackets and incur a tax liability significantly higher than if a part of the gain were taxed each year during which the asset was held. Under the comprehensive income taxation, the capital gains in the year of realization would be taxed at the taxpayer's highest marginal tax rate on ordinary income, thus creating undue progression on the resulting income.

This bunching problem has been widely recognized in general literature such as David(1968). Some experts contend, however, that the bunching problem, while potentially serious under particular circumstances, is not worrisome in practice. They see bunching as the result of the taxpayer's privilege to defer the realization of gain until a time of his choosing and thus defer taxation of the appreciation. Thus the deferral of taxes and the timing of realization render a significant benefit to recipients of capital gains, making the need for further preferences less urgent.

The bunching of capital gains in a single year under a progressive com-

prehensive (or scheduler) income tax can increase tax liabilities. On the other hand, if taxation is deferred over the years in which the gains accrued, it, in effect, constitutes an interest-free loan of the tax liability on the accrued gain from the government to the asset holder. And the taxpayer can choose the year in which they realize their gains to minimize their tax liability. In particular, a taxpayer who is an active trader in assets may time his realization along with his receipts of ordinary income and his itemized deductions, so that his income, including capital gains, is stable. Minarik (1981) found that this self-averaging was a significant benefit to higher-income taxpayers with a diversified portfolio in the United States. But the bunching of capital gains was found to lead to higher tax liabilities for about 88 percent of those who realized gains than he would under accrual taxation.

Thus it seems to be better to incorporate devices to offset both deferral advantage and bunching problems at the same time into the income tax system. The bunching problem could be avoided, without providing a special deduction for long-term holding, if provisions were made to average the fluctuation in reported income that are created by the irregular realization of gains and losses on assets. A variety of alternatives can be considered: to add a proration device for capital gains; or averaging for all income sources.

The simpler way to avoid rate progression would be to add a proration device for capital gains to the present law, since capital gains is taxed separately from ordinary income under the present system. David (1968) points out that proration, unlike averaging, would be based up only on the current year's tax return, and thus no information from prior tax years would be required. Proration in one year would not affect the tax rates on liabilities in other years.

The amount of prorated capital gains in a year would be used to find a suitable rate of taxation to apply to capital gains. With the current separate capital gains taxes, a simple "quotient" form of averaging, as the law in France, Spain and Australia, could be adopted. The quotient could be variable according to the period of ownership of the assets. The tax payable on the gain divided by the number of years of ownership of the assets is

ascertained, and this tax is multiplied by the number of years of the ownership to arrive at the tax payable on the gain as a whole.

With a tax reform in the future to tax gains comprehensively under income tax proration would be accomplished as follows, suggested by David(1968): (1) The tax on ordinary income, less exemptions and deductions, would be calculated; (2) The tax on ordinary income plus the capital gains taxable by law in that year would then be calculated; (3) The difference between (1) and (2) would be multiplied by a proration factor, described below, and added to the tax on an ordinary income. Thus the full gain or loss would be included in the tax computation at a reduced marginal rate.<sup>12</sup>

A suitable proration factor would be one that corresponds roughly to the mode of the holding period. Choosing the holding years as a proration factor would be simple.

If the application of progressive tax rates to annual income streams produces an inequitable burden of taxation on individuals with highly fluctuating results, income could be averaged to determine a rate applied to the entire taxable income realized during the year. It could cover a relatively short period, or it might be extended over longer periods up to the entire lifetime of the taxpayer. The integration of the ordinary income tax and the capital gains tax under one set of rates and general averaging would be best in theory. But general averaging schemes require that the taxpayer keep records on the taxable income that he has received in past years.

The general averaging system would achieve greater equity, but at the expense of record-keeping problems, whose burden would be extended to all taxpayers. Proration, on the other hand, would not require any past income data and would affect only those taxpayers who receive occasional capital gains. The merit of proration would be largely one of administration convenience, and of ease of taxpayer compliance and reduction in compliance costs. Prorating gains would be a way of avoiding a general averaging scheme with its need for data from past years.

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12. See David(1968) for more details.

*D. Tax Base Broadening to Eliminate Land-related Taxation Loopholes*

Various special provisions for exemptions and reductions in current Korean Capital Gains Tax create inequities and undermine the basic fabric of the tax structure. These leave the door wide open to tax avoidance and/or evasion. There have, in reality, been abuses in all of these areas. These provisions make difficult the accounting and enforcement involved in reducing tax avoidance and evasion. That is, they destroy the cross-check mechanism built into the Capital Gains Tax which is a type of transfer tax.

Despite such problems, various special provisions under the Tax Exemption and Reduction Control Law (TERCL) have been heavily used as the tax incentives for various policy purposes such as supporting the acquisition of land for public projects, encouraging balanced regional development, subsidizing small and medium enterprises, promoting the 'rationalization of industry,' encouraging housing construction, and so on. The amount of exemption and reduction of Capital Gains Tax under TERCL reached 989.8 billion Won in 1992, which is equivalent to 34.4 percent of the total Capital Gains Tax amount calculated in that year. These tax incentives may be introduced to mitigate the problems caused by government interventions under the centrally-administered economic order. Thus, these tax incentives were a result of the intrinsic character of the economic order, under which regulations invite more regulations.<sup>13</sup>

It is certainly appropriate to repeal various provisions for non-recognition, exemptions and reductions to achieve equity of tax burden, as well as to make Capital Gains Taxes more effective as a measure of deterring land investment. First of all, special provisions for exemptions and reductions of Capital Gains Taxes under TERCL should be abolished. These tax incentives would not be needed any more if the centrally administered economic order were reformed to a genuine market economy. The overinvestment in speculative real estate that is now encouraged would be redu-

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13. See Lee(1995) for more discussion.

ced and horizontal and vertical equity would be substantially increased by narrowing the scope of exemptions and reductions. The inclusion of capital gains within the framework of a more general comprehensive income tax, as is done in many advanced countries, seems to be a more logical way to tax capital gains.

### **1) Roll-over for Primary Residence**

Under the current system, the capital gain of a primary residence is totally exempt from taxation. This might be examined to be replaced by a roll-over treatment. A roll-over technique would mitigate the lock-in effect of capital gains taxation by allowing the taxpayer to postpone tax liabilities as long as the proceeds of an asset transaction are appropriately reinvested. Compliance with the proposal would require little more effort than is required with the present law. The taxpayer would have to allocate his gains to the basis of new property acquired during the year. The necessary accounting is required when gains on sales of primary residences or not recognized exchange are reported for tax purposes. However, simplicity for the taxpayer does not mean a corresponding ease of tax administration. The accounting required would be more difficult to police than under taxation on realization since the market does not provide an automatic check on the amount of appreciation in an individual's portfolio. Verification requires that the taxpayer maintain a record of gains allocated in the year of purchase. This record entails a complete tax history for any taxpayer who has done a significant amount of asset trading. Maintenance of a tax history could easily become extremely difficult for any taxpayer and tax administrator alike. If it were enacted, the roll-over would have to be restricted to a narrower set of transactions, or the tax base could again become seriously eroded.

It would seem desirable to establish a way to limit roll-over to a case such as the primary residence. The United States and most other advanced countries were limited in this way. The United States rules are strict: if the sale price of the old residence exceed the cost of the new residence, tax is payable on the gain, up to the amount of the excess. Relief is only due on so much of the gain as must have been used to pay for the new residence.

Further the relief is a deferment of tax rather than an exemption, since it is deducted from the cost of the new residence for capital gains purposes. There is, however, an outright exemption for a person of 55 or older, who may exclude any capital gain attributable to the first \$125,000 of the sales price of his residence. Until 1988 in Japan, the capital gains tax on residential housing was waived under conditions that the house be replaced by another house with equal or greater value within a certain period. However, in the wake of sprawling land price increases from the center of Tokyo to the suburbs, the Ministry of Finance suspended the provision during the spring of 1988, and replaced it by a relatively low tax rate applicable to capital gains for owner-occupied homes only. It may be advisable to replace the current total exemption in Korea by the United States rules with an outright lifetime exemption.

A system providing for the roll-over of capital gains taxes clearly calls for constructive realization of capital gains at death. Otherwise, roll-over would mean zero taxation of capital gains of the assets which were privileged to a roll-over and accumulated for bequest. The small amount of capital gains taxes that were paid would be paid principally by aged persons who were consuming their lifetime accumulation of wealth, and by a few unfortunate individuals who were unable to maintain an inventory of assets. If constructive realization were combined with roll-over for capital gains taxation on primary residence, the tax advantage of capital gains over ordinary income would consist only of lifetime deferment of actual tax payment. This remaining incentive to avoid tax payment on gains could be eliminated by an periodic interest adjustment. The cumulative value of gains and losses rolled-over could be used as the principal upon which the government would apply an interest charge at an appropriate rate. It seems to be desirable to pay interest adjustment, rollover gains when the asset is sold, and apply capital gains taxes later when the stock of the assets decrease, a lifetime exemption.

Some might argue that roll-over should be permitted to businesses and corporate properties in the process of reorganization. But roll-over would not generally be appropriate for corporate income taxation. If roll-over were applied to sales of capital assets by corporations, gains could be

deferred indefinitely. The burden of tax payment would fall only on those who were unable to maintain a beginning-of-the-year level of investment in capital assets, the same pool who were likely to have suffered losses in their business activities. This possibility could be avoided by excluding corporations from the privileges of roll-over.

In short, roll-over appears a rather mixed offering, appealing at first glance but presenting some problems on closer examination. Roll-over would probably create new administrative difficulties in the taxation of capital gains in return for some unlocking of individual movement. Also it would result in a difference between the tax treatment of corporations and that of individuals that does not appear desirable and would fail to solve lock-in problems of the corporation.

## **2) Financial Asset: Listed Corporation Stock**

The total unrecognition of capital gains originated from financial securities such as listed corporation shares and bonds not only undermines the basic fabric of comprehensive income tax structure, but also creates big loopholes for real estate capital gains tax and estate and gift duties. With the zero rate taxation on financial asset capital gains, the statutory bracket rates on income have little relevance for many high-income taxpayers, as the distribution of the capital is more heavily concentrated amongst the higher income groups, especially owners of Conglomerates in Korea. The same is true for statutory bracket rates on estate for these taxpayers, because they can easily covert the wealth passed to the next generation into capital gains which is not recognized as taxable income.

There is no clear a priori reason to discriminate against real property in favor of financial securities in tax treatment. The primary justification for this peculiar tax treatment in Korea might be to promote economic growth. Over the last three decades, economic growth has been a prime goal of policy-makers. Their leading policy tool for seeking these goals has been financial control, and budgetary policy and various specific policies concerning the tax structure have been used in supporting roles. The total unrecognition of capital gains on financial assets in taxation is relevant to the goal, primarily because it is expected to stimulate growth.

Those who defend the unrecognition of capital gains from financial assets in the tax treatment contend that to tax the capital gains would significantly impede the growth of the national product. The argument is seldom spelled out in full, but is based upon total exemption of capital gains tax on publicly traded corporation stocks, a kind of subsidy favors saving in the form of assets eligible for the preferential taxation. As a result, (1) more funds become available in the capital market; (2) businesses respond to the increase in the supply of funds with increased outlays on real capital; (3) increased outlays raise the level of productive capacity; (4) the economy benefits from increased growth.

In the United States, in general, the growth argument in favor of a preferential tax treatment of capital gains on publicly-traded corporation shares is not overwhelming; neither has it been completely refuted. While the volume of internally-retained earnings is certainly increased by the exclusion of publicly-traded corporation stock capital gains from income tax base, the exact effect on household savings and overall savings is in doubt. The effect on the capital market of an exclusion of capital gains would be mixed. Increased trading would be associated with a lower level of disincentives. However, the increased rates of retention of corporate earnings stimulated by the exclusion of capital gains might increase capital rationing and reduce the availability of funds to fledgling enterprises. Higher payout of dividends could create a broader market in new issues and reduce the capital rationing that exists under the present system. This, in turn, might impede the efficiency of capital allocation in a rapidly changing economy like Korea.

However, the major causes of a weak, unhealthy, undeveloped capital market in Korea were shown in Section II to be government control of and regulations on financial market which aggravate, rather than mitigate informational asymmetry intrinsic to security markets. The superiority of real estate relative to financial assets in terms of average rate of return and risk in Korea is not a natural result but an artificial one of government interventions and regulations. As Korea has cyclically experienced in the last two decades, if the supply of saving increases above and beyond the demand for investment funds at the boom, the entire increase in the supply

of savings can be translated into an increase in the price of land and existing securities, rather than an increase in new real capital.

It is well already known that countries that have applied a scheduler tax to income that excludes capital gains have discovered that a large proportion of the income of high-income persons escape taxation.<sup>14</sup>

The revision would encourage the early distribution of ownership interests to the public, and thus provide a useful stimulus for broadening the capital markets. Eliminating these special provisions and unrecognition of capital gains originating from publicly-traded corporation shares would create a foundation on which other reforms of the tax structure could be based. If this preferential treatment were not eliminated, tax reform in other areas would frequently result in the creation of additional loopholes, or additional capital gains unrecognized in the tax treatment.

## **6. Summary and Conclusion: More Equity and Rate Reduction**

In summary, the most recommended would include the full taxation of all capital gains, a periodic interest charge on the deferred tax payment as compensation for implicit interest-free loans from the government to holders of appreciating asset, constructive realization at gift and bequest, and proration under a progressive tax rates.

The tax devices discussed in the preceding sections closely approximate an income tax based upon an accretion definition of income. Capital gains would be fully taxed when realized. The cumulative averaging of income with interest credits (or with periodic interest charges on the deferred tax payment) would remove incentives to defer asset sales; and constructive realization would remove the tax advantage in postponing sales in anticipation of death. Under this new system, income would receive much more equal taxation, whether it were earned or derived from the sale of assets. Tax avoidance by a broad group of asset holders would become vastly more difficult. Existing serious inequities in tax treatment between

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14. Richard M. Titmus, *Income Distribution and Social Change: A Study in Criticism* (London: George Allen & Unwin, 1962).

those with large net worth and those with little net worth would be eliminated.

The nominal rate structure of the tax system would more nearly approximate effective vertical progression. In addition, much more tax revenue with current nominal rate structure would be yielded. The constructive realization of capital gains at gift and bequest would yield revenue comparable to the revenue yield of the present estate tax. This resulting increase in tax revenue would make a substantial reduction of overall current tax rates in income tax as well as sales taxes possible.

It would be fairer and simpler to institute proration to take care of the bunching problem and eliminate the separate tax rate for capital gains. Simplicity of administration and enforcement is also important. The burden of the administration will be reduced if the tax be paid in order to register real estate and obtain clear title, as the Alberta Unearned Increment Tax. Transaction price should be written in the registration card of a real estate. If all provisions for exemption and reduction of Capital Gains Taxes be eliminated, and Capital Gains Tax be based on reported transaction prices rather than appraised values, the buyer will have a strong incentive to reveal the transaction price truthfully. If he agreed to under-report the transaction price for reducing the seller's Capital Gains Tax burden, he would pay more tax to the extent when he would sell the property in the future.

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## Reform Proposals for Raising the Tax Burden on Land-holding

Sung-Wook Lee

### 1. Introduction

Korea has a plethora of problems: high land inflation<sup>15</sup>, a heavy concentration of land ownership in the upper-income class<sup>16</sup>, a large amount of capital gains, an absolute preference for land to other assets, a severe speculative demand of land, a land price overvalued in comparison to land productivity, the decline of firms' competitiveness, and the rise in housing prices.

While the supply of urban lands has been restricted<sup>17</sup>, Korea has

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15. During 1964~70, Korea experienced the first land price inflation. After the first oil shock, Korea experienced a second land price inflation during 1975~79. During 1987~90, Korea experienced a third land price inflation. If the land price index at the end of 1974 would be 100, the land price index was 373(505 in Seoul) at the end of 1979. At the end of 1985, the land price index became 678(1,354 in Seoul). At the end of 1990, land price index became 1,691(3,349 in Seoul). By the introduction of "public" concept of land, however, the land prices have been stabilized since 1992.
  16. Korea has a total area of 99,300 square kilometers and a taxable area of 66,053 square kilometers (66.5% of the total area), which was assessed 974 trillion won by the publicly declared land value(PDLV) in 1993. The taxable area is owned by 8.5 million people and 148 thousand corporations. Individuals own 88%(80% in value) and corporations own 12%(20% in value) of taxable area. The upper 5% of individual landowners own 44% of the total land value (826 trillion won) owned by individuals, while the upper 5% of the 148 thousand corporations own 86% of the land value owned by corporations.
  17. The farm lands make up 22% of the total area, and the forest lands take 66%, while the urban lands (housing and building sites: 2%, factory sites: 0.3%, and public sites: 2.2%) make up only 4.5% of the total area.

achieved rapid economic growth since 1960s and the demand for urban lands has increased to a great extent. Land prices have risen greatly while farm and forest lands have been developed into housing, building and factory sites. Due to high land price inflation and a weak tax burden on land-holding and land gains, lands have been preferred absolutely to other financial assets and speculative demand for lands has increased greatly. This has led to a rapid increase in land prices.

Firms have been aggressively purchasing idle lands for future factory and business sites in advance as a result of both high land price inflation and banks' usual practice of requiring real estate as security. Firms which purchased the idle lands have had to pay a high purchase price. Thus firms had difficulty expanding its capacity, developing its technology or entering into new businesses; firms' competitiveness has naturally declined. Land prices have appreciated relatively highly when compared to land productivity, that is, GDP.<sup>18</sup>

In order to solve the land problems mentioned above, the aim of the land system should be changed from 'conservation and regulation' to 'utilization and development'. The supply of urban lands should be increased greatly by allowing some of the farm and forest lands to be developed more easily. If the tax burden on a land-holding and land gains is to be increased and the macro-economic situation continues to be stabilized, the speculative demand for lands will be decreased greatly while being more efficiently utilized.

Section 2 analyzes the comparison of tax burdens on land holdings between Korea and other countries, and then suggests the direction for reform. Section 3 tries to find out the optimal tax burden on a land holding. Section 4 explains the structure of the aggregate land tax (ALT) and analyzes the effective tax rates on a land-holding. Finally, Section 5 sug-

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18. The total value of the 24.4 million pieces of private lands (area of 73,893km<sup>2</sup>) which were assessed by the PDLV was 1,068 trillion won in 1993, while the nominal GDP in 1993 was 267 trillion won. The ratio of the land value over the nominal GDP was 4. In 1991, the total value of the private lands increased by 155 trillion won (1992: 1073 trillion, 1991: 918 trillion), while the nominal GDP in 1991 was 216 trillion won.

gests the problems and the reforms of the issues on the ALT, the acquisition tax, and the registration tax, and others.

## 2. A Comparison of the Real Property Taxation

In Korea, a real property is distinguished by land and the structure on it, and registered separately in the registry. Thus a piece of land and the structure on it are assessed and taxed separately. Real property taxes are imposed in the process of acquisition, possession and transfer.

On acquiring a real estate, the acquisition tax (2%) and the registration tax (3%) are imposed on the basis of the real market value or the reported price of the purchased land and building<sup>19</sup>.

While holding a real estate, the aggregate land tax<sup>20</sup> is imposed on the land, while the property tax<sup>21</sup> is imposed on the building. The city planning tax (0.2% of the tax basis) and the education tax (20% of the ALT) are also imposed on a land, while the city planning tax (0.2% of the tax basis), the community facility tax (0.06-0.16% of the tax basis) and the

19. Since 1996, the acquisition tax and the registration tax are imposed on the basis of the real market value or the PDLV.

20. Until 1989, the property tax assessed on a land was by a uniform tax rate of 0.3%. Since 1990, the aggregate land tax has been introduced in order to tax landowners who hold a lot of land; with the new tax, land is assessed at a higher marginal tax rate. Thus the ALT has a progressive marginal tax rate system and is imposed differently according to the use of land. A land used for a building site is distinguished as a Special Combined Tax Base, and imposed by progressive tax rates (0.3~2%: 9 steps). The Separate Tax Base (farmland and separate taxable forests (0.1%), pasture lots, factory sites, the lands for sale in lots supplied and rented by the Korea Land Development Co. and the Korea Water Resources Development Co., and the lands for electric facility and within mining areas (0.3%) are imposed separately by lower tax rates. But the lands for golf courses, high-class amusement and housing exceeding 660m<sup>2</sup> are imposed separately by a higher tax rate (5%). The General Combined Tax Base includes all the lands (housing sites, farmlands, forests and pastures except for the separate tax base, the idle lands, et cetera) except for the special combined tax base and the separate tax base, and is imposed the more progressive tax rates (0.2~5%: 9 steps).

21. The residential houses are imposed by progressive tax rates (0.3~7%), while other buildings are imposed by 0.3% and factory buildings located in residential areas are imposed by 0.6%.

education tax (20% of the property tax) are also imposed on a building. Since the "public concept" of land use was introduced in 1990, the excessive value increase land tax (EVIL Tax), the development charge, and the excessively-owned housing-site charge were introduced to curb land speculation and land price inflation.

If capital gain is realized on selling a real estate, the capital gains tax is imposed separately by progressive tax rates (30~50%), which is higher than income tax rates (10~40%)<sup>22</sup>. For a corporation, the realized capital gain (the sale price minus the book value) is added up to the corporate income and levied by the corporation tax rate (16%, 28%)<sup>23</sup>, and then 20%<sup>24</sup> of the capital gain (sale price - acquisition price) is also levied by the special added tax. If the value of fixed assets increases, the asset revaluation tax (3%) is also imposed.

From <Table III-1>, we know that the tax burden on a land-holding has increased since the aggregate land tax was introduced in 1990. The tax burden on a land-holding in 1993 has become four times that of 1989. The tax burden on a building-holding in 1993 has become two times that of 1989. By the introduction of the EVIL Tax, the development charge and the excessively-owned housing-site charge, the recurrent tax burden on a real property has increased 5.4 times from that of 1989.

Although land transactions have decreased since 1990, a lot of apartments have been built by the Five New Town (Pundang, Pyungchon, Ilsan, Sanbon, Chungdong) Construction Project, and a lot of the buildings have been built in order to avoid the EVIL tax and the excessively-owned housing site charge. Thus the tax revenue from the acquisition

22. Since 1996, due to the 1994 tax reform, financial income which exceeds 40 million won is added up to the regular income and levied by the progressive tax rate. On the other hand, the marginal tax rates of the income tax has declined to 10~40% from 5~45%. Thus, the marginal tax rates of the individual capital income tax has declined to 30~50% from 40~60%.

23. The tax rates of the corporation income tax were 32% and 20% until 1994. The tax rates of the corporation income tax have declined to 30% and 18% in 1995, and 28% and 16% since 1996.

24. By the tax reform in 1994, the tax rates of the individual capital income tax have been decreased since 1996. Thus the tax rate of the special added tax has been decreased to 20% from 25% since 1996.

and registration taxes has increased greatly. The reason why capital gains tax has increased is due to the introduction of 'the Publicly Declared Land Value System(PDLV System)'<sup>25</sup>

< Table III-1 > Tax Revenue Related to a Real Property

(Units : Billion Won, %)

	1989	1990	1992	1993
Total Revenue	26,195	33,215	44,681	50,287
Local Tax	4,961(18.9)	6,367(19.2)	9,462(21.2)	11,026(21.9)
National Tax	21,234(81.1)	26,847(80.8)	35,218(78.8)	39,261(78.1)
Land-holding Tax	299(1.1)	591(1.8)	939(2.1)	1,189(2.4)
Building-holding Tax	365(1.4)	420(1.3)	638(1.4)	743(1.5)
Education Tax	73	135(0.4)	209(0.5)	244(0.5)
Public Concept Land	-	23	485(0.8)	1,879(3.7)
Real Property Tax	757(2.7)	1,146(3.5)	1,786(4.0)	2,190(4.4)
Acquis.&Regist. Tax	1,418(5.4)	2,104(6.3)	3,157(7.1)	3,827(7.6)
Capital Gains Tax	1,608(4.1)	1,773(5.3)	2,182(4.9)	2,374(4.7)
Total	3,151(12.0)	5,049(15.2)	7,610(17.0)	9,763(20.4)

Notes: 1. The land-holding tax includes the aggregate land tax, the city planning tax and the education tax, while the building-holding tax includes the property tax, the city planning tax, community facility tax and education tax.

2. The tax on public concept of land includes the excessive value increase land tax, the development charge and the excessively-owned housing site charge.

3. The capital gains tax includes the capital gains tax for an individual, the special excise tax, the asset revaluation tax and the corporation tax for corporation.

4. The number inside ( ) is the ratio to the total revenue.

Sources: National Tax Administration, *Statistical Yearbook of National Tax*.  
Ministry of Home Affairs, *Yearbook of Local Tax Administration*.

25. By the introduction of the PDLV System, both the sale price and the acquisition price are applied on the basis of the PDLV, usually readjusted to 80~90% of the real market value. Until 1989, the standard values announced by the National Tax Administration were applied in calculating the capital income, only if the individual could not reveal their real market value of both the sale price and the acquisition price. The standard value of a land announced by the National Tax Administration had reached the level of 70% of the real market price, and that of the apartment has reached the level of 70~75% of the real market price. The standard value of the building, announced by the Bureau of Home Affairs, has reached 30~35% of the construction cost.

The total tax revenue on a real property became 20% of the total tax revenue in 1993, but the composition of the total tax revenue is not satisfactory. The recurrent tax revenue related to holding a real property is only 4.4% of the total tax revenue and capital gains tax is 4.7%, while the tax revenue related to acquiring a real property is 7.6% of the total tax revenue.

The tax revenue of both the acquisition and registration tax related to a real property holds 1/3 of the local tax revenue, but both the acquisition tax and the registration tax have had little effect on stabilizing land price inflation, while the recurrent tax on a land-holding has had an effect on stabilizing the land price because land supply as well as land demand are relatively inelastic. Thus the tax burden related to holding a real property should be heavier, but tax burden related to acquiring a real property should be lowered.

In Korea, the tax burden in relation to holding a real property is 4.0% of the total tax revenue and 0.8% of the current GDP, while the tax burden related to transferring a real property is 7.1% of the total tax revenue and 1.3% of the current GDP. Tax burden related to holding a real property is relatively too low, but tax burden related to transferring a real property is relatively too high.

Since landowners are taxed every year for holding a real property, it has an effect in stabilizing land inflation and utilizing land efficiently without leaving it idle. Taxation on transferring a real property can prevent frequent transactions by speculators and raise revenue without tax resistance, but it can shrink the usual transactions and does not have an effect in stabilizing land price inflation and utilizing land efficiently. Thus tax burden on holding a real property should be higher, and tax burden on transferring a real property should be lower.

< Table III-2 > International Comparison of the Tax Burden on a  
Real Property  
(Year 1992 Ratio to Total Tax Revenue)

(Units : %, Billion Currency)

	Korea	Taiwan	Japan	U.S.A.	England	Germany	France
Holding Real Estate	4.0	7.5	9.7	14.7	8.1	1.4	3.9
Transferring	7.1	1.3	0.7	-	-	0.7	1.6
Estate & Gift tax	0.5	0.9	2.9	1.2	0.7	0.4	1.6
Others	0.8	-	-	-	-	1.7	1.1
Property Tax	12.4	9.7	13.4	16.1	8.8	4.3	8.3
Total Tax Revenue	44,681	748.5	91,965	1,207.2	172.5	738.2	1,692.0
Tax Burden Rate	18.6	19.0	19.8	20.6	28.9	24.4	24.2

(Year 1992 Ratio to Nominal GDP)

(Units : %, Billion Currency)

	Korea	Taiwan	Japan	U.S.A.	England	Germany	France
Holding Real Estate	0.8	1.4	1.9	3.0	2.4	0.4	0.9
Transferring	1.3	0.2	0.1	-	-	0.2	0.4
Estate & Gift tax	0.1	0.2	0.6	0.3	0.2	0.1	0.4
Others	0.1	-	-	-	-	0.5	0.3
Property Tax	2.3	1.8	2.7	3.2	2.6	1.1	2.0
Current GDP	240,392	5,307	463,850	6,039	595.3	2,794	6,999

Notes: 1. Tax burden on holding real property means recurrent taxes on immovable property.

2. Tax burden on transferring real property includes the acquisition tax, the registration tax and others.

3. Others include taxes in relation to "public concept" of land in Korea, the net wealth tax in Germany and France, and the development tax in England.

4. The tax burden rate is the ratio of total tax revenue excluding social security to the current GDP.

5. Exchange rate in '92: Korea(760.8₩), Taiwan(26.8NT\$), Japan(144.8¥) England(0.6£), Germany(1.6DM), France(5.5Franc).

Sources: OECD, *Revenue Statistics of OECD Member Countries*, 1994.

IMF, *International Financial Statistics*, 1994.

### 3. The Optimal Tax Burden on a Land-holding and the Effect on Land Price Decrease

There is no right answer in the analysis for the optimal tax burden related to a land-holding. This paper tries to find out the optimal tax burden which makes the after-tax return of land(real asset) and that of financial asset in equilibrium. The absolute preference for land will be lowered, only if the optimal tax burden on a land-holding is determined to set the after-tax return of land lower than the after-tax return of financial asset.

The return on a real estate consists of both rent and capital income. Since rent is only 3~4% of the market value of a real estate in Korea<sup>26</sup>, we regard rent as an income for the building and capital income as an income for land.

It is impossible to estimate the average increase rate of a land price in the future. Since the trend of the average land price increase rate has been similar to the trend of nominal economic growth rate in the past<sup>27</sup>, our analysis assumed that the same will follow in the future<sup>28</sup>.

The taxation on land includes the acquisition tax (2%), the registration tax (3%) and the education tax (20% of the registration tax) when acquiring lands, the aggregate land tax, the city planning tax (0.2%), and the

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26. Korea, the return rate of one-year time deposit is 10%, and that of the treasury bond is 13~14%.

27. The trend of land price increase has usually been similar to the trend of nominal economic growth, but the amplitude of land price cycle has been larger than the amplitude of the economic growth cycle. During 1975~79, the annual average increase rate of land price was 30.6% and that of the nominal GNP was 32.4%. While the economy had achieved rapid economic growth, the annual increase rate of land price was higher than that of the nominal GNP. During 1980~86 when the economy had sluggish or stable economic growth, the annual average increase rate of land price(9.8%) was lower than that of the nominal GNP(16.2%). During 1987~91, the annual average increase rate of land price was 22.3%, higher than that of the nominal GNP(18.0%). Thus the trend of land price fluctuation has had a similar cycle to the nominal GNP fluctuations, but the range of land price fluctuation has been larger than that of nominal GNP fluctuation.

28. The target of the nominal economic growth rate in the future is set as 12~13% by the government.

education tax (20% of the local tax) every year when holding lands, and the capital income tax when selling lands. On the other hand, the taxation on a financial asset includes the income tax on a financial income (interest, dividend, and capital gains).

The following condition should be satisfied in order to make the after-tax returns on land and financial asset equal:

$$\begin{aligned} & (1+g)^n - t_c [(1+g)^n - (1+t_p)] - (1+r)^n t_p \sum_0^{n-1} (1+r)^{n-s} (1+g)^s t_1 \\ & = (1+r)^n - t_y [(1+r)^n - 1] \\ t_1 & = \frac{1}{(1+r)^n - (1+g)^n} [(1-t_c)(1+g)^n + t_c(1+t_p) - (1+r)^n(1-t_y+t_p) - t_y] \end{aligned}$$

where,

$t_p$  = tax burden on acquiring land (acquisition tax and registration tax)

$n$  = the period holding land (5 years or 10 years)

$t_1$  = tax burden on holding land

$t_c$  = tax burden on selling land (64.5% or 55%)<sup>29</sup>.

$g$  = the average increase of land price (1981~85: 10.3%, 1986~90: 20.4%, 1981~90: 15.4%, the average increase of land price in the future is supposed to be 12~13% which is the estimated nominal economic growth rate)<sup>30</sup>

29. The average tax rates on capital income and interest income are 43~64.5% and 21.5%, respectively. For simplicity, the tax rate on capital income is supposed to be 64.5% and that on interest income is supposed to be 21.5%. Since 1996, the tax rate of interest income is supposed to be 44% because the financial income should be added up to the ordinary income and levied by progressive tax rates (10~40%), and the tax rate of capital income is supposed to be 55%. The resident tax as a local tax is imposed 7.5% of the income tax, but it has been imposed 10% of the income tax since 1996.

30. In the 1980s, the annual increase rate of the nominal GNP rates were 16.3% during 1981~85, and 17.0% during 1986~90. Thus the annual increase rate of the nominal GNP was 16.6% during 1981~90.

$r$  = the interest of one year time deposit(10%)

$t_y$  = the withholding tax rate(21.5%) or the top marginal rate(44.0%)<sup>31</sup>.

The tax burden on a land-holding is affected by the increase rate of land price, the holding period, the tax burden on capital income, financial income, and land-acquiring. As the increase rate of land price get higher, or the tax burdens on capital income and on acquiring land get lower, or the tax burden on financial income gets higher, the tax burden on a land-holding should get higher.

Since each piece of land is different in the rate of land price increase and the holding period, the optimal tax burden on a land-holding should be determined considering the average rate of land price increase and the average holding period. Thus, lands with a lower rate of land price increase than the average should get a lower after-tax return than financial assets, while lands with a higher rate of land price increase than the average should get a higher after-tax return than financial asset.

According to <Table III -3>, acquiring lands which have the annual rate of land price increase higher than 15.4%(the average annual rate of land price increase in 1980s) had been better than acquiring a financial asset, while acquiring lands with the annual rate of land price increase lower than 15.4% was worse than acquiring financial asset. The effective tax burden rate on a land-holding should have been 0.4~0.7% for the individual<sup>32</sup>, and 0.2~0.4% for the corporation<sup>33</sup> when they held their lands

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31. The financial income which is less than 40 million won is withheld by a withholding tax rate of 15%(the resident tax: 1.5%), and the financial income which exceeds 40 million won is added up to the ordinary income and imposed by the progressive tax rate. It is rational to assume that the tax rate of the financial income is to be 44% because the individual who hold a lot of lands also usually earns a lot of income.

32. Individuals usually did not reveal the real market price of their purchased land, thus the acquisition tax and the registration tax had been imposed on the basis of the standard value which had reached lower than 20%. The tax burden on acquiring land for the individual had been about 1% of the PDLV.

33. Corporations should pay 5.6% of the real transaction price of an acquired land. For the corporation, financial income and capital income are added up to their business income, and is imposed by the rate of 32%(30% in 1995, 28% since 1996). Additionally, capital income is imposed by the special additional tax of 25%(20% since 1996).

for 10 years. Since the real tax burden on a land-holding was lower than 0.05% during the 1980s, acquiring and holding a land during 10 years had been better than saving on ten year time deposit.

Suppose the rate of land price increase is expected to be 13~13.5%. The optimal tax burden on a land-holding should be 0.3~0.5% only if the acquisition tax and the registration tax remain unchanged. If the tax burden on acquiring land is lowered to 3%(or 1%), the optimal tax burden on a land-holding should be 0.5~0.7%(or 0.6~0.8%).

< Table III-3 > The Optimal Tax Rate on Land-holdings

(Units : %)

Tax Rate on Interest Acquis & Regis Tax Holding Period	21.5(r=10%)				43.0(r=10%)					
	5		1		5.6		3.2		1.2	
Increasing Rate	5	10	5	10	5	10	5	10	5	10
11	-2.4	-1.6	-2.0	-1.4	-1.1	-0.6	-0.8	-0.4	-0.5	-0.3
12	-2.0	-1.2	-1.6	-0.9	-0.7	-0.2	-0.3	0.0	-0.1	0.1
12.5	-1.8	-1.0	-1.4	-0.7	-0.4	0.1	-0.1	0.2	0.1	0.4
13	-1.6	-0.7	-1.2	-0.5	-0.2	0.3	0.1	0.5	0.3	0.6
13.5	-1.4	-0.5	-1.0	-0.3	0.0	0.5	0.3	0.7	0.6	0.8
14	-1.2	-0.3	-0.7	-0.1	0.2	0.7	0.5	0.9	0.8	1.0
14.5	-0.9	-0.1	-0.5	0.2	0.5	1.0	0.8	1.1	1.0	1.3
15	-0.7	0.2	-0.3	0.4	0.7	1.2	1.0	1.4	1.2	1.5
15.5	-0.5	0.4	-0.02	0.7	0.9	1.4	1.2	1.6	1.4	1.7
16	-0.3	0.7	0.2	0.9	1.1	1.7	1.4	1.8	1.6	1.9
16.5	-0.03	0.9	0.4	1.2	1.3	1.9	1.6	2.0	1.9	2.2
17	0.2	1.2	0.7	1.4	1.8	2.4	2.0	2.4	2.3	2.6
18	0.7	1.7	1.1	1.9	2.2	2.8	2.5	2.8	2.7	3.1

Notes: 1. r=10% is the interest rate of one year time deposit during 1980s.

2. Interest income is withheld by the rate of 21.5%.

3. The burdens of the acquisition tax and the registration tax are 5.6% of the real market value for the corporation, but is estimated to be 1% for the individual because he doesn't reveal the real market price.

4. Since financial income has been added to an ordinary income from 1996, financial income is supposed to be imposed by the highest marginal tax rate of 44%(including the habitant tax), and capital income is supposed to be imposed by the highest marginal tax rate of 55%.

It is difficult to determine the optimal tax burden on a land-holding. If the tax burden is determined to be too heavy, acquiring a land where the rate of land price increase is lower than 10% is more unfavorable than acquiring a financial asset. Even though the tax burden on a land-holding is determined to be too heavy, it is impossible to prevent the speculative demand for land; changes in the zoning, the category of land, the development of land and others can result in the rapid rise of land prices to more than 2~3 times that of before.

Therefore, the optimal tax burden should be determined considering the average increase rate of land price, and the taxation on land and financial asset. Raising the tax burden on a land-holding makes the after-return of land lower, reduces the absolute preference for land, prevents the speculative demand, and then keeps the stability of land price increase.

If the tax burden on a land-holding is raised up to the level of 0.4~0.5% and the market interest rate is expected to be 12%, the capitalization<sup>34</sup> of the tax burden on a land-holding has the effect of lowering the land price to the level of 3.3~4.2%. Since the real tax burden on a land-holding was less than 0.05% until 1990, the tax burden on a land-holding did not affect the decrease of land price. The average tax burden on a land-holding was 0.16% in 1994, and thus land price might decrease only by 1~1.6%. As long as market interest rate comes down further and the economic business fluctuation becomes stabilized, the capitalization effect of tax burden on a land-holding gets larger.

The heavy tax burden on a land-holding has an effect on the landowners' decision of whether to develop or dispose of their lands. If the tax burden on a land-holding is raised up enough, some landowners would utilize their lands efficiently rather than leaving their lands idle in order to cover their holding cost, or some landowners short of cash flow cannot but sell

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34. A purchaser has to bear the recurrent tax burdens on a land-holding as long as he holds land. The recurrent tax burdens on a land-holding correspond to a land-holding cost. Since a buyer wants to lower the purchase price by the amount of the present value of the recurrent tax burdens on a land-holding and the supply of land is relatively inelastic, the market price of land decreases by the amount of the present value of recurrent tax burdens on a land-holding. This is the capitalization effect of the tax burden on a land-holding.

their lands. The supply of land increases and the speculative demand for land decreases, and thus the market price of land will decrease more than the capitalization effect.

The tax burden on acquiring lands does not have a capitalization effect, even though it can prevent frequent transactions. The acquisition tax and the registration tax are only paid when a buyer purchases land. Thus buyers regard the tax burden on acquiring land as a sunk cost, not as a holding cost. After the tax burden on acquiring land is imposed, it does not affect the landowners' decision of whether to develop or dispose of their lands<sup>35</sup>.

#### 4. The Structure of the Aggregate Land Tax

##### *A. Tax Base of the Aggregate Land Tax*

Until 1989, Korea had a property tax where lands and buildings were levied by a flat rate(0.3%) and houses were levied by progressive tax rates(0.3~5%). When an individual or a corporation held idle land, the excessively-owned land tax (ELT) had been imposed by progressive tax rates(0.5~5%) since 1988.

In 1990, the property tax on land and the excessively-owned land tax were integrated into the aggregate land tax(ALT) in order to prevent a person from holding a lot of land and leaving land idle. Tax basis of the ALT is the current standard land value(SLV)<sup>36</sup> determined by the Ministry of Home Affairs. The lands are classified into three parts as follows;

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35. The tax burden on acquiring land is similar to a "sunk cost". After a firm invests on production capacity, the average variable cost affects the decision of whether to continue production or not, but the fixed cost does not. Similarly, the tax burden on a land-holding affects the decision of whether to hold or sell land, but the tax burden on acquiring land does not.
36. The SLV determined by the Ministry of Home Affairs is about 30% of the PDLV determined by the central government. In 1990, the SLV was on average 15.3% of the PDLV, but the SLV has increased to 26.9% of the PDLV in 1994 and 31.6% in 1995. Thus, tax revenue of the ALT has increased from 448 billion won in 1990 to 1,089 billion won in 1995.

### **1) General Combined Taxation**

The values of all taxable lands (housing site, farmland, forest and pasture except for the separate tax base, idle land, et cetera) except for Special Combined Tax Base(SCTB) and Separate Tax(STB) among all the lands owned by an individual or a corporation are added up to the General Combined Tax Base(GCTB), and imposed by 9 progressive tax rates (0.2%, 0.3%, 0.5%, 0.7%, 1%, 1.5%, 2%, 3%, and 5%).

### **2) Special Combined Taxation**

The value of all the lands where buildings are located is added up to the Special Combined Tax Base, and imposed by 9 progressive tax rates (0.3%, 0.4%, 0.5%, 0.6%, 0.8%, 1%, 1.2%, 1.5%, and 2%).

### **3) Separate Taxation**

When lands are used for agriculture or manufacturing, they are imposed separately by flat tax rates (0.1%, 0.3%, and 5%). Farmlands and separate taxable forests are imposed by 0.1%, while Pasture lots, factory sites, lands for sale in lots supplied and rented by Korea Land Development Co. and Korea Water Resources Development Co., and lands for electric facility and within mining areas are imposed by 0.3%. Lands for golf courses, high-class amusement and residences exceeding 662m<sup>2</sup> are separately imposed by 5%

## ***B. The Tax Revenue on a Land-holding***

The landowners have to pay the ALT, the city planning tax (0.2% of tax base of lands which are located in city planning areas), and the education tax (20% of the ALT). The average effective tax burden on a land-holding was 0.08% in 1990. Since the tax burden on a land-holding has increased radically by pulling up the ratio of the SLT over PDLV and land prices have fallen since 1992, the average effective tax rate on a land-holding became 0.17% in 1994 and will be 0.23% in 1995.

By the 'new' economic plan (NEP), the SLV is to be unified to the PDLV and tax rates are to be adjusted in 1996, and thus the average effective tax

rate on a land-holding is to be 0.3~0.4%.

< Table III-4 > Tax Revenue on Land-holdings

(Units : Billion Won, %)

	1990	1991	1992	1993	1994	1995	1996
Total PDLV	761.0	917.6	1,072.6	1,068.1	989.3	983.6	983.6
Realiz'n Ratio	15.3	15.3	17.3	21.3	26.9	31.6	50.0
GCTB	-	-	3,979	4,981	5,977	7,161	11,113
SCTB	-	-	1,924	2,511	3,202	4,540	6,971
STB	-	-	925	1,420	1,714	1,747	1,878
ALT	4,477	5,314	6,951	8,911	10,892	13,447	19,962
Effective Rate	0.06	0.06	0.06	0.08	0.11	0.14	0.20
Total Burden	6,830	8,194	10,780	13,672	16,629	20,425	32,200
Effective Rate	0.09	0.09	0.10	0.13	0.17	0.21	0.33

Notes: 1. Total PDLV is the sum of PDLVs of 24.4 million pieces of all the lands (area: 73,893km<sup>2</sup>, 74.4% of the total territory, 99,300km<sup>2</sup>). All the taxable lands(66,056km<sup>2</sup>, tax exempt or reduction: 5,302 km<sup>2</sup>) and some state lands(24,519km<sup>2</sup>) are included.

2. The realization ratio is the ratio of total SLV to total PDLV.

3. The effective tax rate is the ratio of the total tax burden on a land-holding to the total PDLV.

4. Tax amount in 1989 is the sum of the property tax on land(1,79.9 billion won) and the excessively-owned land tax(28 billion won).

5. The data in 1996 is estimated assuming that the SLV is raised up to 50% of the PDLV, tax rates for the GCTB are adjusted, and the SCTB is imposed by a flat rate.

&lt; Table III - 5 &gt; Distribution of Tax Burden of the ALT

(Units : Won, %)

	1992				1993			
	Taxpayers Thousand	Tax Amount 100 Mill W	Tax Base 100 Mill	Tax per Capita Won	Taxpayers Thousand	Tax Amount 100 Mill	Tax Base 100 Mill	Tax per Capita Won
Below 1 Thousand W	847 (9.8)	3.7 (0.05)	2,783 (0.2)	436	754 (8.4)	3.3 (0.04)	2,474 (0.1)	438
1 - 5 Thousand W	1,842 (31.0)	52.8 (0.8)	37,575 (2.3)	2,866	1,711 (27.5)	49.2 (0.6)	34,690 (1.8)	2,876
5 - 10 Thousand W	1,597 (49.5)	117 (2.4)	77,099 (6.8)	7,326	1,571 (45.0)	115 (1.9)	75,256 (5.4)	7,320
10 - 30 Thousand W	2,494 (78.2)	441 (8.7)	267,320 (22.3)	17,682	2,670 (74.7)	472 (7.2)	284,204 (19.1)	17,678
30 - 50 Thousand W	771 (87.1)	293 (12.8)	163,312 (31.8)	38,003	867 (84.4)	331 (11.0)	185,087 (28.1)	38,178
50 - 100 Thousand W	565 (93.7)	394 (18.3)	189,573 (42.8)	69,735	701 (92.3)	491 (16.5)	236,891 (39.5)	70,043
100-500 Thousand W	432 (98.7)	870 (30.6)	320,404 (61.4)	201,389	550 (98.4)	1,106 (29.0)	429,918 (60.2)	201,091
0.5 - 1 Million W	59 (99.3)	412 (36.4)	111,650 (67.9)	698,305	75 (99.2)	524 (37.9)	142,697 (67.1)	698,667
1 - 5 Million W	48 (99.9)	924 (49.4)	211,675 (80.2)	1,925,000	61 (99.9)	1,182 (48.2)	261,356 (79.7)	1,937,000
5 - 10 Million W	4.87 (99.9)	338 (54.1)	54,606 (83.4)	6,940,000	6.16 (99.9)	427 (53.1)	70,068 (83.1)	6,932,000
10 - 50 Million W	3.57 (99.9)	697 (63.9)	90,952 (88.7)	19,524,000	4.44 (99.9)	866 (62.8)	114,414 (88.6)	19,505,000
50 - 100 Million W	376P (99.9)	266 (67.7)	29,611 (90.4)	70,745,000	451P (99.9)	314 (66.4)	33,693 (90.2)	69,623,000
0.1 - 1 Billion W	392P (99.9)	1,044 (82.4)	84,535 (95.3)	266,327,000	506P (99.9)	1,366 (81.8)	109,676 (95.5)	269,960,000
Above 1 Billion W	50P (100)	1,253 (100)	81,117 (100)	2.5 bil	63P (100)	1,612 (100)	94,258 (100)	2.6 bil
Total	8,665,252	7,106	1,722,211	82,002	8,971,803	8,858	2,074,682	98,733

Sources: Ministry of Home Affairs

The <Table III - 5> shows the distribution of tax burden of the ALT. It shows that about 9 million taxpayers<sup>37</sup> pay 886.8 billion won, 0.43% of the tax base, and tax amount per capita was 98,733 won in 1993.

Of the 9 million taxpayers in 1993, 92.3% paid less than 100 thousand won (\$130). Their tax payments make up only 16.5% of the total tax revenue. Tax payers who paid less than 1 million won made up 99.2% of the 9 million tax payers, and their tax payments was 38% of the total tax revenue. Only the upper 1%(about 8 thousand owners) paid more than 1 million won for the ALT. Their tax payment made up 62% of the total tax revenue, while their tax base was 33% of the total tax base.

63 corporations paid more than 1 billion won (\$130,000), and their average tax burden was 2.5 billion won. Their tax payments made up 18% of the total tax revenue, while their tax base was 4.5% of the total tax base. 506 landowners who held a lot of land paid 15.4% of the total tax revenue, even though their tax base made up only 5.3% of the total tax base. Therefore, we know that the distribution of tax burden of the ALT is highly progressive.

### *C. The Effective Tax Rates*

The effective tax rate is the ratio of the tax burden on a land-holding to the market value of the land. Since it is impossible, however, to collect the market values of all taxable lands, the Ministry of Construction & Traffic assesses the PDLV of all taxable lands. Thus, the effective rate is to be the ratio of the tax burden on a land-holding to the PDLV of the land which is determined around 80% of the real market value.

The <Table III-6> shows the distribution of land ownership. All the lands which come under General Combined or Special Combined Tax

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37. In 1993, there were 8,971,803 aggregate land tax payers (individual: 8,399,472, corporation: 133,419, unidentified: 438,912). The landowners who held GCTB were about 7.8 million(individual: 7.7 million, corporation: 80 thousand). The landowners who held SCTB were 546 thousand (individual: 520 thousand, corporation: 26 thousand). The land owners who held only STB were 520 thousand(individual: 490 thousand, 30 thousand).

Base are owned by 7.9 million individuals and 0.1 million corporations. 95% of the 8 million landowners hold lands of which the PDLV is below about 300 million won. 95~99% of 8 million landowners hold lands of which the PDLV is 0.3~1 billion won. 99~99.9% hold the lands of which the PDLV is above 1~5 billion won. The upper 0.1% (about 8 thousand landowners) hold lands of which the PDLV is more than 5 billion won.

For the individuals, 80% hold lands of which the PDLV is less than 0.1 billion won. No one holds lands of which the PDLV is more than 100 billion won. For the corporations, 80% hold lands of which the PDLV is less than 0.4 billion won. 95% hold lands of which the PDLV is less than 3 billion won. 95~99.9% hold lands of which the PDLV is 3~200 billion won.

< Table III - 6 > The Distribution of Land Ownership

(Units : Billion Won, %)

GCTB + SCTB PDLV	Individual		Corporation		Indiv + Corp	
	Ratio	Cum Ratio	Ratio	Cum Ratio	Ratio	Cum Ratio
Below 0.1	79.70	79.70	59.35	59.35	79.45	79.45
0.1 ~ 0.2	12.85	92.56	11.24	70.59	12.83	92.28
0.2 ~ 0.3	3.16	95.72	5.45	76.04	3.19	95.47
0.3 ~ 0.4	1.34	97.05	3.96	80.00	1.37	96.84
0.4 ~ 0.5	0.76	97.82	2.88	82.88	0.79	97.63
0.5 ~ 0.6	0.47	98.29	1.55	84.43	0.49	98.12
0.6 ~ 0.7	0.36	98.65	1.15	85.57	0.37	98.48
0.7 ~ 0.8	0.21	98.85	1.54	87.11	0.22	98.71
0.8 ~ 0.9	0.18	99.03	0.92	88.03	0.19	98.89
0.9 ~ 1	0.12	99.15	0.54	88.57	0.13	99.02
1 ~ 2	0.56	99.72	4.97	93.54	0.62	99.64
2 ~ 3	0.14	99.85	1.78	95.33	0.16	99.80
3 ~ 4	0.06	99.92	1.11	96.44	0.08	99.87
4 ~ 5	0.03	99.94	0.61	97.04	0.03	99.91
5 ~ 10	0.04	99.99	1.40	98.44	0.06	99.97
10 ~ 100	0.01	100.00	1.21	99.66	0.03	100.00
100 ~ 200	0.00	100.00	0.28	99.94	0.00	100.00
Above 200	-	-	0.06	100.00	0.00	100.00

Notes: The number of individuals who hold lands which come under GCTB or SCTB is 7.9 million, and the number of corporations is 100 thousand. The number of individuals who hold lands which come under separate tax base is 490 thousand, and the number of corporations is 30 thousand. Thus, the total number of land owners is about 8.5 million.

The <Table III-7> shows the concentration of land ownership. The concentration of land ownership for the corporations is more severe than for individuals. The upper 5% of the individual landowners hold lands of which the PDLV is 44.2% of the total PDLV and of which the area is 30.3% of the total lands owned by 8.4 million individual landowners. The upper 5% of the corporations hold lands of which the PDLV is 85.9% of the total PDLV and of which the area is 63.5% of the total lands owned by 133 thousand corporations.

< Table III - 7 > The Concentration of Land Ownership

(Units : %, Trillion Won, km<sup>2</sup>)

Land Owners	Individual				Corporation			
	PDLV		Area		PDLV		Area	
	Ratio	C.Ratio	Ratio	C.Ratio	Ratio	C.Ratio	Ratio	C.Ratio
1%	23.7	23.7	12.9	12.9	68.4	68.4	34.9	34.9
2%	7.7	31.4	6.1	19.0	8.0	76.5	25.3	60.2
3%	5.3	36.7	4.4	23.3	4.3	80.7	1.7	61.8
4%	4.1	40.8	3.7	27.0	2.9	83.7	1.2	63.0
5%	3.4	44.2	3.3	30.3	2.2	85.9	0.5	63.5
6 - 10%	11.7	55.9	12.7	43.1	6.2	92.1	6.1	69.7
11 - 20%	13.9	69.7	13.0	56.1	4.5	96.5	6.6	76.3
21 - 30%	9.1	78.8	7.4	63.5	1.6	98.2	2.7	79.0
31 - 40%	6.4	85.2	5.4	68.9	0.8	99.0	4.8	83.8
41 - 50%	4.7	89.9	4.4	73.3	0.5	99.5	1.9	85.7
51 - 60%	3.7	93.6	3.8	77.1	0.3	99.7	6.3	92.0
61 - 70%	2.9	96.5	3.6	80.8	0.2	99.9	4.0	96.0
71 - 80%	2.0	98.5	6.9	87.7	0.1	100.0	2.5	98.4
81 - 90%	1.2	99.7	8.3	96.0	0.0	100.0	1.1	99.6
91 - 100%	0.3	100.0	4.0	100.0	0.0	100.0	0.4	100.0
Total	779.2		58,088		194.8		7,980	

The <Table III-8> shows the effective tax rates of GCTB. The effective tax rates of GCTB were estimated to be 0.046~0.9% in 1993. Since the average ratio of SLV to PDLV has been raised up to 31.6% from 21.3%, the effective tax rates of GCTB were estimated to be 0.06~1.45% in 1995.

The lands which correspond under the GCTB are held by 7.7 million individuals and 80 thousand corporations. 95% of 7.8 million land-owners hold lands of which the PDLV is lower than 0.2 billion won. 95~99% of taxpayers hold lands of which the PDLV is 0.2~0.6 billion won. 99~99.9% hold lands of which the PDLV is 0.6~3 billion won. The upper 0.1%(about 8 thousand land-owners) hold lands of which the PDLV is more than 3 billion won.

The effective tax rates of 95% of the general combined taxpayers are 0.06~0.08%. Those of the 95~99% are 0.08~0.16%. Those of the 99~99.9% are 0.16~0.29%. Those of the upper 0.1% are 0.3~1.45%. Thus, the only 0.1% of the 8.8 million General Combined Tax payers pay a tax burden higher than the optimal tax burden on a land-holding.

The <Table III- 9> shows the effective tax rates of SCTB. The effective tax rates of SCTB were estimated to be 0.06~0.23% in 1993. The effective tax rates of SCTB were estimated to be 0.09~0.5% in 1995. The lands which correspond to the SCTB are held by 520 thousand individuals and 26 thousand corporations. 90% of 546 thousand landowners hold lands of which the PDLV is lower than 0.7 billion won. 90~99% of tax payers hold lands of which the PDLV is 0.7~4 billion won. The upper 1%(about 5.5 thousand landowners) hold lands of which the PDLV is more than 4 billion won.

The effective tax rates of the 90% of SCTB payers are 0.09~0.1%. The effective tax rates of the 90~99% are 0.1~0.13%. The effective tax rates of the 99~99.9% are 0.13~0.23%. Those of the upper 0.1% are 0.23~0.5%. The effective tax rates of SCTB are much less than those of GCTB, even if the PDLV of SCTB are much higher than the PDLV of GCTB.

&lt; Table III-8 &gt; Effective Tax Rates of General Combined Tax Base

(Units : Billion Won, %)

GCTB Assessed by PDLV	Individual		Corporation		Indiv Cum Ratio	Corp Cum Ratio	Total Cum Ratio
	1993	1995	1993	1995			
	Effective Rates		Effective Rates				
Below 0.1	0.046	0.061	0.048	0.061	81.26	66.53	81.11
0.1 - 0.2	0.046	0.076	0.050	0.076	94.18	78.04	94.02
0.2 - 0.3	0.054	0.100	0.057	0.101	96.95	83.54	96.81
0.3 - 0.4	0.065	0.118	0.072	0.117	98.11	86.47	97.99
0.4 - 0.5	0.073	0.138	0.082	0.137	98.70	89.03	98.60
0.5 - 0.6	0.083	0.151	0.080	0.152	99.03	90.44	98.94
0.6 - 0.7	0.091	0.160	0.094	0.161	99.27	91.46	99.19
0.7 - 0.8	0.095	0.167	0.114	0.167	99.41	92.96	99.35
0.8 - 0.9	0.098	0.172	0.101	0.172	99.53	93.37	99.47
0.9 - 1	0.105	0.176	0.091	0.177	99.60	93.79	99.55
1 - 2	0.116	0.209	0.108	0.216	99.89	97.07	99.86
2 - 3	0.148	0.291	0.140	0.298	99.94	98.14	99.93
3 - 4	0.179	0.350	0.169	0.346	99.97	98.62	99.95
4 - 5	0.207	0.403	0.237	0.407	99.98	98.91	99.97
5 - 6	0.213	0.442	0.261	0.441	100.00	99.08	99.98
6 - 7	0.256	0.461	0.286	0.462	100.00	99.23	99.98
7 - 8	0.356	0.485	0.245	0.483	100.00	99.34	99.99
8 - 9	0.298	0.497	0.260	0.497	100.00	99.40	99.99
9 - 10	0.219	0.506	0.254	0.507	100.00	99.51	99.99
10 - 20	0.298	0.614	0.381	0.623	100.00	99.75	100.00
20 - 30	0.442	0.917	0.496	0.887	100.00	99.83	100.00
30 - 40	0.553	1.023	0.707	1.106	100.00	99.87	100.00
40 - 50	0.481	1.189	0.688	1.184	100.00	99.91	100.00
50 - 60	0.459	1.249	0.686	1.235	100.00	100.00	100.00
60 - 70	0.338	1.284	0.651	1.278	100.00	100.00	100.00
70 - 80	0.310	1.315	0.872	1.321	100.00	100.00	100.00
80 - 200	0.539	1.386	0.836	1.395	100.00	100.00	100.00
Above 200	-	-	0.904	1.451	100.00	100.00	100.00

Notes: The number of landowners (individual: 7.71 million, corporation: 80 thousand) who hold lands which come under General Combined Tax base is 7.8 million.

&lt; Table III - 9 &gt; Effective Tax Rates of Special Combined Tax Base

(Units : Billion Won, %)

GCTB Assessed by PDLV	Individual 1993 1995 Effective Rates		Corporation 1993 1995 Effective Rates		Indiv Cum Ratio	Corp Cum Ratio	Total Cum Ratio
Below 0.1	0.064	0.090	0.067	0.090	54.04	31.71	52.99
0.1 - 0.2	0.067	0.090	0.065	0.090	68.46	44.00	67.31
0.2 - 0.3	0.063	0.090	0.067	0.090	78.07	49.69	76.72
0.3 - 0.4	0.063	0.092	0.062	0.091	83.42	57.84	82.21
0.4 - 0.5	0.064	0.097	0.061	0.099	86.80	61.75	85.62
0.5 - 0.6	0.067	0.102	0.075	0.102	89.56	64.23	88.36
0.6 - 0.7	0.070	0.104	0.062	0.104	91.47	66.37	90.28
0.7 - 0.8	0.068	0.107	0.088	0.107	92.93	68.63	91.78
0.8 - 0.9	0.076	0.108	0.045	0.108	93.71	70.72	92.63
0.9 - 1	0.071	0.109	0.089	0.109	94.55	71.94	93.47
1 - 2	0.074	0.113	0.077	0.113	98.17	82.12	97.41
2 - 3	0.080	0.125	0.081	0.125	99.08	86.56	98.49
3 - 4	0.084	0.133	0.090	0.134	99.47	89.66	99.01
4 - 5	0.087	0.144	0.102	0.144	99.63	91.17	99.23
5 - 6	0.088	0.151	0.093	0.151	99.73	92.39	99.39
6 - 7	0.092	0.155	0.096	0.155	99.79	93.40	99.50
7 - 8	0.094	0.159	0.104	0.159	99.84	93.85	99.57
8 - 9	0.113	0.161	0.100	0.161	99.87	94.42	99.62
9 - 10	0.101	0.163	0.107	0.163	99.89	94.99	99.66
10 - 20	0.099	0.178	0.118	0.185	99.99	97.40	99.86
20 - 30	0.126	0.225	0.142	0.226	100.00	98.20	99.91
30 - 40	0.134	0.256	0.175	0.250	100.00	98.79	99.94
40 - 50	0.127	0.279	0.166	0.275	100.00	99.06	99.95
50 - 60	0.128	0.292	0.134	0.291	100.00	99.96	99.99
60 - 70	0.185	0.300	0.191	0.302	100.00	100.00	100.00
70 - 80	0.154	0.318	0.210	0.310	100.00	100.00	100.00
80 - 200	-	-	0.199	0.355	100.00	100.00	100.00
Above 200	-	-	0.226	0.500	100.00	100.00	100.00

Notes: The number of landowners(individual: 520 thousand, corporation: 26 thousand) who hold lands which come under Special Combined Tax base is about 550 thousand.

Even if the lands corresponding to the SCTB are much more expensive and provide higher revenue than the GCTB, the effective tax rates of SCTB are much less than those of GCTB. Only 0.1%(about 5 hundred landowners) of 546 thousand Special Combined Tax payers pay a higher tax burden than the optimal tax burden on a land-holding.

The lands which come under the GCTB or the SCTB are owned by 8 million landowners (7.9 million individuals and 100 thousand corporations). The <Table III-10> shows the effective tax rates of the ALT for individuals. Of the 7.9 million landowners, 80% hold lands of which the PDLV value is below 0.1 billion won. Their effective tax rates of the ALT were 0.06% and their total tax burdens on a land-holding were 0.12% in 1995. 95% hold lands of which the PDLV value is 0.1~0.3 billion won. Their effective tax rates of the ALT are 0.06~0.1% and their total tax burdens on a land-holding are 0.12~0.16%. 95~99% hold lands of which the PDLV is 0.3~0.9 billion won. Their effective tax rates are 0.1~0.14% and their tax burdens on a land-holding is 0.17~0.22%. 99~99.9% hold lands of which the PDLV is 1~5 billion won. Their effective tax rates are 0.14~0.23% and their tax burdens on a land-holding is 0.22~0.32%. The upper 0.1%(about 8 thousand landowners) hold lands of which the PDLV is more than 5 billion won. Their effective tax rates are 0.23~0.77% and their total tax burdens on a land-holding are 0.32~0.96%.

The <Table III-11> shows the effective tax rates of the ALT for the corporations. The effective tax rates of the ALT were 0.064~0.53%, and the total tax burdens on a land-holding were 0.11~0.69% in 1995.

&lt; Table III-10 &gt; Effective Tax Rates of Aggregate Land Tax(Individual)

GCTB+SCTB PDLV	1993 SLV/PDLV	1993 Effective Rates			1995 Effective Rates		
		GCTB	ALT	Total	GCTB+SCTB	ALT	Total
Below 0.1	22.96	0.046	0.045	0.086	0.061	0.061	0.122
0.1 - 0.2	20.47	0.047	0.046	0.091	0.076	0.076	0.144
0.2 - 0.3	20.13	0.055	0.053	0.097	0.097	0.095	0.163
0.3 - 0.4	20.18	0.063	0.062	0.106	0.109	0.106	0.174
0.4 - 0.5	20.33	0.069	0.068	0.114	0.121	0.118	0.189
0.5 - 0.6	20.43	0.074	0.074	0.121	0.128	0.124	0.197
0.6 - 0.7	20.48	0.078	0.077	0.125	0.130	0.126	0.200
0.7 - 0.8	20.17	0.080	0.079	0.129	0.137	0.133	0.210
0.8 - 0.9	19.90	0.083	0.083	0.133	0.143	0.140	0.218
0.9 - 1	20.70	0.088	0.085	0.134	0.142	0.135	0.211
1 - 2	20.13	0.090	0.091	0.143	0.151	0.146	0.226
2 - 3	19.98	0.103	0.102	0.156	0.185	0.177	0.263
3 - 4	20.21	0.113	0.117	0.174	0.199	0.188	0.277
4 - 5	20.10	0.130	0.128	0.187	0.234	0.223	0.318
5 - 6	19.47	0.127	0.128	0.187	0.241	0.230	0.327
6 - 7	17.11	0.132	0.133	0.187	0.311	0.301	0.403
7 - 8	19.45	0.134	0.151	0.215	0.247	0.234	0.331
8 - 9	20.36	0.150	0.152	0.217	0.250	0.241	0.342
9 - 10	18.40	0.145	0.147	0.204	0.302	0.292	0.392
10 - 20	20.56	0.120	0.120	0.276	0.321	0.306	0.422
20 - 30	19.18	0.217	0.216	0.292	0.425	0.394	0.523
30 - 40	17.85	0.243	0.238	0.315	0.522	0.497	0.641
40 - 50	21.65	0.344	0.327	0.429	0.533	0.492	0.646
Above 50	16.54	0.337	0.328	0.419	0.794	0.764	0.955

Notes: 1. 7.9 million individual landowners who hold the GCTB and the SCTB are divided by 80%, 95%, 99%, 99.9%

2. The effective tax rate of GCTB+SCTB is the ratio of the tax burden of GCTB+SCTB to the PDLV of GCTB+SCTB
3. The effective tax rate of ALT is the ratio of the tax burden of GCTB+SCTB+STB to the PDLV of GCTB+SCTB+STB.
4. The effective tax rate of the total tax burden on a land-holding includes the ALT, the city planning tax and the education tax.

&lt; Table III-11 &gt; Effective Tax Rates of Aggregate Land Tax(Corporation)

GCTB+SCTB PDLV	1993 SLV/PDLV	1993 Effective Rates			1995 Effective Rates		
		GCTB	ALT	Total	GCTB+SCTB	ALT	Total
Below 0.1	23.71	0.050	0.053	0.086	0.065	0.064	0.110
0.1 - 0.2	20.86	0.530	0.059	0.102	0.080	0.079	0.142
0.2 - 0.3	20.00	0.055	0.055	0.098	0.098	0.096	0.164
0.3 - 0.4	20.60	0.065	0.064	0.109	0.103	0.102	0.171
0.4 - 0.5	20.64	0.075	0.080	0.117	0.125	0.122	0.178
0.5 - 0.6	21.61	0.081	0.078	0.133	0.134	0.128	0.212
0.6 - 0.7	20.03	0.079	0.068	0.134	0.136	0.133	0.205
0.7 - 0.8	22.78	0.101	0.114	0.175	0.143	0.138	0.223
0.8 - 0.9	22.15	0.086	0.086	0.141	0.127	0.123	0.205
0.9 - 1	21.10	0.087	0.083	0.132	0.141	0.134	0.210
1 - 2	19.11	0.088	0.085	0.138	0.162	0.156	0.237
2 - 3	20.12	0.104	0.099	0.156	0.188	0.182	0.275
3 - 4	20.42	0.104	0.101	0.157	0.182	0.169	0.257
4 - 5	21.39	0.133	0.133	0.199	0.228	0.214	0.317
5 - 6	20.40	0.139	0.138	0.203	0.225	0.207	0.303
6 - 7	20.86	0.138	0.132	0.197	0.232	0.219	0.321
7 - 8	18.72	0.136	0.132	0.191	0.266	0.255	0.355
8 - 9	20.24	0.152	0.128	0.190	0.262	0.219	0.318
9 - 10	19.96	0.132	0.144	0.211	0.231	0.199	0.296
10 - 20	20.88	0.148	0.135	0.201	0.240	0.211	0.310
20 - 30	21.80	0.191	0.165	0.240	0.321	0.262	0.378
30 - 40	22.34	0.208	0.184	0.262	0.304	0.263	0.378
40 - 50	21.24	0.254	0.224	0.308	0.392	0.332	0.457
50 - 60	18.63	0.226	0.186	0.258	0.405	0.325	0.441
60 - 70	20.63	0.300	0.275	0.366	0.539	0.433	0.574
70 - 80	21.39	0.273	0.220	0.305	0.439	0.309	0.432
80 - 90	21.30	0.273	0.207	0.288	0.466	0.330	0.456
90 - 100	21.49	0.368	0.253	0.344	0.616	0.432	0.580
100 - 200	19.73	0.303	0.233	0.317	0.515	0.390	0.524
Above 200	17.49	0.382	0.294	0.387	0.683	0.529	0.687

Notes: 0.1 million corporation landowners who hold the GCTB and the SCTB are divided by 80%, 95%, 99%, 99.9%

Of 0.1 million corporations, 80% held lands of which the PDLV value was below 0.4 billion won. Their effective tax rates of the ALT were 0.064~0.1% and their total tax burdens on a land-holding were 0.11~0.17% in 1995. 90~95% held lands of which the PDLV value was 0.4~3 billion won. Their effective tax rates of the ALT were 0.12~0.18% and their total tax burdens on a land-holding were 0.18~0.28%. 95~99% held lands of which the PDLV was 3~20 billion won. Their effective tax rates were 0.18~0.21% and their tax burdens on a land-holding were 0.27~0.31%. 99~99.9% held lands of which the PDLV was 30~100 billion won. Their effective tax rates were 0.26~0.43% and their tax burdens on a land-holding were 0.38~0.58%. The upper 0.1%(about one hundred corporations) held lands of which the PDLV was more than 100 billion won. Their effective tax rates were 0.39~0.53% and their tax burdens on a land-holding were 0.52~0.69%.

Although the corporations hold much more land than the individuals, the effective rates for the corporations are lower than those for the individuals because the lands held by the corporations consist mainly of buildings (SCTB) and factory sites(STB) which are imposed by lower tax rates. The effective tax rates of the ALT are generally lower than those of GCTB and SCTB, because the effective tax rates of the ALT include separate taxation (0.1% & 0.3%).

## **5. Issues of the Aggregate Land Tax**

### ***A. Standard Land Value or Publicly Declared Land Value?***

The SLV announced by the Ministry of Home Affairs was on average 15.3% of the PDLV assessed by the Ministry of Construction and Traffic in 1990. The realization ratios(SLV/PDLV) had a big variation in 1990, but the variation of the realization ratios(SLV/PDLV) has gone down, step by step, since 1990. In 1995 the SLVs were on average 31.6% of the PDLVs. In 1993 the effective tax rate on a land-holding was estimated to be 0.13%(ALT: 0.08%) on average, and the effective tax rate on a land-holding in 1995 was estimated to be 0.2%(ALT: 0.14%).

According to the New Economic Planning, the tax burden on a land-holding should be raised up to 2-3 times the level of the tax burden in 1993. The SLV should be equalized and raised up to the level of 30% of the PDLV in 1995. In 1996, the SLV is to be replaced by PDLV or be unified at some level(40%, 50% or 60%) of the PDLV, and the progressive tax rates of the ALT are to be adjusted and then the effective tax rate on a land-holding is to be 0.26~0.4%(2~3 times of the tax burdens in 1993)<sup>38</sup>. But, the Ministry of Home Affairs tried to strengthen the tax burden on a land-holding by gradually raising up the ratio of the SLV to the PDLV.

There are some issues with the use of the SLV and PDLV:

a. If SLV is replaced by PDLV and tax rates are adjusted such that the average effective tax burden is raised up to 0.4%, there will be a severe tax resistance. If tax rates are adjusted such that the average effective tax burden becomes lower than 0.3%, however, the tax burden on a land-holding is not high enough to lead to efficient land use and to reduce the preference for land.

b. In 1996, the SLV should be realized up to 60% of the PDLV and the

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38. The states of the U.S.A. have different effective tax rates on a land-holding. The effective tax rates of many states are higher than 1%. The building is imposed by 2~3% in New York state. According to <Table II -2>, the ratio of the tax burden on holding a real estate to the nominal GDP was 3.0% in U.S.A., while 0.8% in Korea, even if the effective tax rates on a land-holding was 0.1% in 1992. The ratio of the tax burden on acquiring a real estate to the nominal GDP was 1.3% in Korea. By Japanese data, the total value of the American territory(\$3.4 trillion) was estimated to be 70% of the nominal GNP(\$4.9 trillion) in 1988. The Japan territory is only 4.1% of the American territory, but the value of the Japan territory is 4.2 times the value of the American territory. The total value of the Japan territory is 5 times the nominal GDP in 1988. The Korean territory is only 1.1% of the American territory, and a quarter of the Japan territory, but the total value of the Korean territory is 22% of that of the American territory. The average land price per square meter of Japan is 100 times of that of America, and the average land price per square meter of Korea is 20 times that of America in 1988. Thus the average tax burden on a land-holding of 0.3~0.5% is not too low considering that a land price in Korea is too high compared with the productivity of land and the land price in U.S.A..

tax rates should be adjusted such that the average effective tax rates of the ALT is 0.2%(total tax burden on a land-holding: 0.3%). If the SLV is realized up gradually to 70%, 80% and 100% of the PDLV from 1997, the average effective tax burden will be raised up enough to prevent speculating and leaving lands idle, and then the tax revenue for the local governments will be increased, step by step.

### ***B. Progressive Taxation or Uniform Taxation?***

The property tax is a major local tax and is usually imposed by a flat tax rate in almost all countries<sup>39</sup>. The tax rate is either fixed by law or determined in accordance with the budgetary needs and cycles of the local government<sup>40</sup>. It is rational that the property tax is considered as a charge for the benefit of the local government. But, in Korea, Taiwan and Japan where land problems have been severe, the property tax has progressive tax rates in order to prevent individuals and corporations from holding a lot of lands.

The values of all the taxable lands which an individual or a corporation holds are added up according to the use of land, and imposed separately by progressive tax rates in order to prevent holding a lot of lands. If the values of all the taxable lands were added up and imposed together, the tax burden on building sites, farmlands, forests, factory sites and so on would become too heavy and have an adverse effect on the agricultural and

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39. The tax rate may be a single rate for all classes of property, as in Chile, and varied rates for different categories of property use, such as in some provinces of Canada, Denmark(0.6~2.4%) and Sweden(1.5%, 2.5%, 3.5%), and some of the United States. The ALT in Korea and the land value tax in Japan have progressive tax rates based upon the size or value of the land.

40. Property taxes levied by national and state governments tend to be established by law at a fixed rate or percentage of value. This is the case with the land tax levied by the states in Australia, the nationally imposed property taxes in Chile, Indonesia, Sweden and the United Kingdom, and the ALT in Korea. The national governments of Denmark, France and Japan prescribe fixed limits or ceilings on the rate of taxes levied on property by local governments. In Australia, Canada, and in many parts of the United States, tax rates are set by local governments without limits imposed by a higher level governments.

industrial sector. Thus, the building sites are regarded as the SCTB, added up and imposed by progressive tax rates(0.3~2%) lower than those of the CGTB (0.2~5%). Farmlands, forests and factory sites and others are imposed by low flat tax rates(0.1% and 0.3%), while the lands for luxurious life are imposed by a high tax rate(5%).

There is consensus about progressive taxation on a land-holding, but there is disagreement about division and separate taxation between GCTB and SCTB.

a. The first suggestion is that the GCTB and SCTB should be integrated, and levied by new progressive tax rates but it will be less progressive than before. Pasture lots, lands for golf courses, high-class amusement and residences exceeding 662m<sup>2</sup> should be integrated. Farmlands and forests where development is restricted and factory sites should be imposed separately.

It can solve tax distortion caused by the distinction of land use, but tax burden becomes very heavy especially for big corporations (public companies, banks, department stores, and et cetera) which cannot but operate a lot of branch offices.

b. The second suggestion is that the GCTB is levied by progressive tax rates, but the SCTB, such as building sites, is levied by a flat rate. Since building sites are provided for production and service activities such as factory sites, they are not suitable for progressive taxation. Lands for building sites should be imposed by 0.2~0.3%(effective tax rate)<sup>41</sup>. The 99% of the landowners who hold building sites have an effective tax burden of 0.09~0.13%. The upper 0.1% pays an effective tax burden of more than 0.23%

### *C. Taxation by Local Government or by Central Government?*

The ALT is a local tax, but Ministry of Home Affairs determines the

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41. Factory sites are imposed 0.3%, and farmlands and forests are imposed 0.1%. Since the realization ratio was around 30% in 1995, the effective tax rate for factory sites was 0.1%, and that of farmlands and forests was 0.03%.

total tax amount and the tax amounts to be levied by local governments, and only the collection is done by local governments. Local tax amounts are determined based on the SLV of the lands which are located in every local autonomous body.

In order to restore the role of local taxation and strengthen tax burden of the landowners who hold a lot of land, the ALT may be divided into two taxation; flat taxation by the local governments and progressive taxation by the central government.

All taxable lands are imposed by flat rates(0.3~0.5%) by the local government. The central government determines the ceiling of the tax rates and the local governments determine tax rates based upon their revenue of the ALT and their budget condition. For the landowners<sup>42</sup> who hold lands of more than a set limit(1 billion won), the central government imposes a value which exceeds a certain amount by new progressive tax rates(0.3%, 0.5% and 1%). Lands for factory and building sites, farmlands and forests, and lands owned by governments are not levied by the central government.

#### *D. Aggregate Land Tax or Acquisition & Registration Tax?*

When a person purchases land, he has to pay the acquisition tax(2% of transaction price or PDLV) and the registration tax(3% of transaction price or PDLV). The revenue from the acquisition tax and the registration tax makes up one-third of the local tax revenue. The acquisition tax and the registration tax are a convenient measure without tax resistance, and thus are preferred by the local governments. The acquisition tax and the registration tax can repress frequent transactions in a short period, but has little effect on stabilizing land-price inflation. There are two opinions;

- a. Tax burden on a real property is almost 12% of the total tax revenue and 2.2% of the nominal GDP. Tax burden on holding a real property is

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42. The landowners who hold lands of more than 0.3 billion won are about 400 thousand people, that is, 5% of 8 million landowners. The landowners who hold lands of more than 1 billion won are 80 thousand people, that is, 1% of 8 million landowners.

only 4.0% of the total tax revenue and 0.8% of the nominal GDP, while tax burden on transferring a real property is 7.1% of the total revenue and 1.3% of the nominal GDP. So tax burden on holding a real property should be increased, while tax burden on transferring a real property should be lowered. Thus, the tax rate(3%) for the registration of a real estate should be lowered to less than 1%<sup>43</sup>.

b. The revenue from the acquisition tax and the registration tax makes up one-third of the local tax revenue without resistance. Few local governments can support itself yet, and thus they have to increase their tax revenue. The ALT is levied by local governments, but the acquisition tax and the registration tax are levied by state governments. Therefore, the Ministry of Home Affairs cannot lower the rates of acquisition tax and registration tax.

## 6. Reform Proposals for Land-holding Taxation

From the above analyses, we can reach the following conclusions. The tax burden on a land-holding should be raised up to the level of 0.3~0.5%. In order to raise the tax burden without severe resistance, the SLV should be raised up gradually to the level of 50%, 60%, 70% and 80% of the PDLV. The tax rates (0.2~5%) for the GCTB may be adjusted in order to get the progressiveness smaller when the SLV is raised up to the level of 50%. The progressive tax rates(0.3~2%) for the SCTB may be adjusted in order to get the progressiveness smaller or may be changed to a flat rate(0.4% or 0.5%)

Furthermore, the tax rate of the registration tax should be lowered to 1%. The city planning tax and the education tax may be integrated into the ALT in order to simplify the structure of the local tax and reduce the compliance and collection costs.

Lastly, the local governments should be allowed to impose all taxable lands located in the area by flat rates(0.4~0.5%). The central government

43. The rates for the other registrations are lower than 1%(registration by inheritance: 0.8%, registration for preservation:0.8%, registration for corporation:0.4%, et cetera).

can determine the ceiling of the tax rates<sup>44</sup>, and each local governments can determine the tax rates<sup>45</sup> based upon their revenue

of the ALT, the city planning tax and the education tax. For the landowners (the upper 1% of 8 million landowners) who hold lands worth more than one billion won<sup>46</sup>, the central government imposes a value exceeding a certain amount by new progressive tax rates (0.3%, 0.5%) in order to prevent lands in the hands of a few. Lands for factory and building sites, farmlands and forests, and lands owned by governments are not levied by the central government. The central government (Ministry of Home Affairs or National Tax Administration) collects tax amounts from the landowners, and allocates the tax revenue to the local governments.

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44. According to <Table IV-1>, the average tax rate of the ALT (tax amount/tax base) was 0.42% in 1990, 0.39% in 1991, 0.41% in 1992, 0.43% in 1993, 0.44% in 1994, and 0.46% in 1995. The effective tax rates of the ALT (tax amount/total PDLV) was 0.06% in 1992, 0.08% in 1993, 0.11% in 1994, and 0.14% in 1995. Total tax burden was 0.1% in 1992, 0.13% in 1993, 0.17% in 1994, and 2.1% in 1995.

45. Tax rates should be 0.4% or 0.5% in order to satisfy the tax revenue levied by the ALT. If the realization ratio of the SLV is raised up to 50% of the PDLV, tax rates may be lowered to 0.3%. If the city planning tax and the education tax are integrated into the ALT, the tax rates should be 0.5% in order to satisfy the total tax burden on a landholding.

46. According to <Table IV-2>, 1% of landowners pay more than 1 million won as the ALT. The total tax amount levied on 1% makes up 62% of the ALT revenue. The total tax base owned by 1% makes up 33% of the total tax base.

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### **The Reform Proposals to Raise Tax Burden on Land-holding**

While tax burden on land-holding is relatively very low, tax burden on land-transfer is very high. Thus tax burden on land-holding should be raised in order to have an effect on a stabilization of land price and an efficient utilization of land. By the analysis of the optimal tax burden of land-holding, which keep the balance between after-tax revenue of land and after-tax revenue of financial asset, the optimal tax burden rate of land-holding should be 0.4~0.5%. The tax burden rate in 1994 is 0.16%. Three proposals, by which tax burden is raised up to 0.3~0.4%, are presented according to the new 5-year economic plan. The fourth proposal, by which tax burden is raised gradually up to 0.5%, is also presented in order to mitigate tax resistance.



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**IV****Publicly-Declared Land Value System and Other  
Land Tax Assessments**

Younghoon Ro

**1. Introduction**

The PDLV system can be best described as a fiscal cadastre system developed to provide the land price information necessary for multiple policy purposes. The need for the central government's monitoring of land price movements both in regional markets and in land use types explains its *raison d'être* in Korea plagued by excessive land price inflation and speculative activities. Other land management functions that the PDLV system serves include providing information base for a variety of real estate taxation<sup>47</sup> and assisting in the control of land use development control.

Previous government land valuation systems were pluralized according to the valuation purposes, valuing agencies, and application of the systems.

In this chapter we review some of the basic features of PDLV system, and focus our attention mainly on the aspects of PDLV arising when applied to land taxation in Korea. Also, we will examine some issues on the tax assessment of capital gains tax and buildings tax. At the end we present some policy suggestions to improve the PDLV system and other assessment standards.

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47. By real estate taxation, we denote all national and local taxes imposed upon acquisition and possession of real estate property (land and buildings) as well as tax on capital gains from selling a real estate.

## 2. PDLV System and Other Land Information Systems

### A. Structures of PDLV: OVSP and OVIP

Publicly-Declared Land Value (PDLV) system is actually a two-tier system: the central government's official announcement of land values for selected parcels, called 'Official Value of Standard Parcels' (OVSP), and local government's determination of land values for the rest of the parcels, called 'Official Value of Individual Parcels' (OVIP). Both values have the same characteristic in that they are not observed transaction market prices, but are annually appraised values.

The PDLV system was instituted in 1989 to unify the previous separate land valuation systems used for property and transfer taxation, and eminent domain compensation through the legislation of 'Act on Land Value Announcement & Land Appraisal'(herein, "ALVA&LA"). Since the Act reserved the terminology of PDLV only for the management of OVSP and does not cover how to determine the OVIP<sup>48</sup>, the PDLV can be used interchangeably with OVSP in the narrow sense, but OVIP denotes only the value of Individual Parcels. Also, the OVIP is different from the OVSP in terms of its determination method, procedures, and the agencies in charge (See <Table IV-1>).

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48. As for the legal ground on which the OVIP is determined, there used to be a Premier's Decree called 'Guideline on Joint Investigation of Individual Parcel Prices', which was not legislated in the National Assembly but set up in the Premier's office. At the end of 1995, ALVA&LA was revised to incorporate most of the relevant provisions in Premier's Decree in order to strengthen the legal ground of OVIP.

&lt; Table IV-1 &gt; Comparison of OVSP and OVIP

Classification	OVSP	OVIP
Governing Law	Act on Land Value Declaration and Land Appraisal	Guidelines on Joint Investigation of Individual Parcel Prices (Premier's Decree)
Administrative Charge	MOCT <sup>1)</sup> , KAPA <sup>2)</sup>	Office of City · County · Borough
Surveyor	Licensed appraiser	Officials in City, County, Borough
Object	Normal <sup>3)</sup> Price of SP	OVIP
Coverage	150 → 300 → 450 Thousand SPs (1989) (1990) (1995)	25 Million Parcels (Including taxable private and public lands)
Standard	- Regional analysis & selects SP - Estimates idle land - Reflex of development profit - Reflex of district in public law - General situation in use	Standard of select as comparative SP
Method used	- Sales Comparison(Principle) - Discounted Present Value of Net Rental Income - Replacement Cost Less Depreciation	Mass Appraisal Using Comparison Matrix Tables (Statistical Extrapolation from SP's price)
Function & Application	- Benchmark Price - Benchmark Price in the Calculation of OVIP	- Adjustment of ALT taxable value(CSTV) - Calculation of Taxable value on EIVLT, CGT, SAT, Inheritance and Gift tax · Base of Development Charge and ERLOC · Usage Conversion Charges for Farmland and Forest - Rent or usage charge for public land - Eminent Domain Compensation

Notes: 1) Ministry of Construction and Transportation.

2) Korean Association of Professional Appraisers.

3) The definition of 'normal' price in the Act closely matches the market price.

As for the legal nature of OVIP, the declaration of OVIP alone before the imposition of tax thereupon was granted its legal bindings to be regarded as an administrative action, and then be subject to jurisdictional judgment. In January 1993, the Supreme Court made a ruling that the announcement of OVIP alone can be contested in the administrative court without waiting for the actual imposition of the tax based upon the OVIP. The court said that "...since the OVIP determined by the local government is directly used in the taxation of EIVLT and Excessive Residential Land ownership Charge, it affects the rights and duties of the citizen and the legal interests." Therefore, land taxation which uses OVIP in the calculation of its tax bases becomes more important than ever.

### **1) Official Value of Standard Parcels (OVSP)**

Ministry of Construction and Transportation selects a representative sample of approximately 450 thousand standard parcels throughout the country from a population of 25 million individual land parcels. A thorough, annual investigation and deliberate judgment upon each separate parcel of 25 million is physically impossible within the time available with just two licensed appraisers assigned for the individualized valuation of each Standard Parcel. These fee appraisers are required to follow the procedures and standards set by the 'Act on Land Value Announcement & Land Appraisal'(ALVA&LA). Normally they survey the parcel of land in question to check the land characteristics before filling out their appraisal report. Total number of factors listed in the report include the following site information: serial identification number, address, land area, land use type(nominal and actual), geographical location, environment, land use, slope, direction, shape, Street and alley access, land use regulations(zoning) and legal restrictions, building structure on surface, transportation, infra-structures, and others totaling 37 items (See <Table IV-2>).

&lt; Table IV-2 &gt; Survey Items

Items			# of Codes	Examples	Items	# of Codes	Examples
1. Land Use Type 2. Parcel Size(m <sup>2</sup> )			24	Orchard	10. Land Usage (Total 41)	Residential Business & Commercial Manufacturing(Major, Minor) Mixed Farming Cultivation Forestry Public use & etc.	
Use Regulation	3. Use Zone	Urban Rural	15 5	Suburban, Farm, Recreational			
	4. Use District	Urban Rural	14 5	Maximum Height Conservation			
	Other Restriction	5. Urban Planning Facilities Site	18	Park, Road, Playground, Cemetery	Topography	11. Height 12. Shape 13. Direction	5 8 8 Flat, Steep Slope Square, Triangle Southern
		6. Others	12	Military Camp	Road Access	14. Facing Road 15. Road Dist.	12 6 Facing One Broad Road Within 50m
					Amenities	16. Market 17. Public Service	7 6 Nearby Within 500m
Agricultural Land	7. Classification Difference		3	Reserved, ...	Proximity to Hazard	18. Rail-road	6 Within 100m
	8. Soil Fertility		3	Fertile, Barren		19. Environmental	7 Within 50m
	9. Readjustment		2				
10. Forest land			2	Preserved	20. Others		

Notes: The survey items above are extracted from the total 38 fields in the Land Characteristics survey form.

Sources: MOCT, Land Price Matrix Table, 1995.

The guidelines followed by the fee appraisers in appraising the value of SP are as follows: ① the assumption of vacant land, ② the evaluation standard of reflecting development gains, ③ the standard of taking account of limitations on rights and, ④ the standard of reflecting the usage of land. The main method used is the Sales comparison method, and a combination of the present value method of income streams and the replacement cost method is supplemented.

What distinguishes the OVSP from other countries similar systems is that the selected SP's are fixed and the market prices are not observed every year. So the OVSP is not the actual observed transaction prices, but the fee appraisers' opinion on the most probable selling prices of the SPs.

## **2) Calculation of Official Value of Individual Parcels (OVIP) with Land Comparison Matrix Tables**

With the OVSP available for the 450 thousand SP's, the value of the rest of the IP's can be estimated by the statistical method of multivariate regression analysis. The basic idea of statistically obtaining a value of an individual land parcel from the nearby appraised parcel's value is as follows: with the hedonic price equation model specified as a parametric functional form, parameters are estimated by the multiple regression method from the sample data on SP's, and the regressand values of IP's are calculated by simply multiplying the observed values of different characteristics with the associated price factors. The relationship between OVSP and OVIP can be described as a logical structure where the latter is forecasted from the out-of-sample characteristics extrapolated statistically from the in-sample information of the former.

### < Procedures for calculating OVIP >

1. Select the benchmark Standard Parcel from the pool of SP's to make comparison with the IP to be evaluated;
2. Identify the differences in characteristics enumerated in Land Characteristics Table between IP and SP (see <Table IV-2>);
3. Locate all the price multiplication ratios (PMR's) attached to each characteristic difference from the Land Price Matrix Table ; and,

4. Obtain the OVIP by multiplying OVSP to the multiplication product of the above PMR's.

< Selection Criteria of SP for the calculation of OVIP >

1. Select SP with the same land use zone and price range as IP;
2. Select SP with the same land usage (main and auxiliary) ; and,
3. If the land use zone and land usage criteria cannot be met, select SP with a similar price range.

### ***B. Problems and Improvements***

Problems with the current method of PDLV calculation and recommendations for improvement are as follows :

① The current guidelines imposed on the professional appraisers in evaluating the SP's are not stated clearly enough to eliminate subjective factors involved in the evaluation. More detailed stipulation of procedures and standards for the appraisers to follow is desirable.

② How to balance the trade-offs between increasing the number of SP's and the development of more elaborate statistical methods is an important issue. Especially after the non-uniformity rulings on the EIVL tax by the Constitutional Court, the total number of SP's has increased by 50% and the need for improving the statistical method must now take priority.

③ The current estimation method is based on the log-linear specification of the hedonic price function for the convenience of multiplying the estimated coefficients in the Land Comparison Matrix Tables to the factors of characteristic differences. With the advances in non-parametric and semi-parametric estimation methods in econometrics, we need to try different model specifications and cross-validation techniques.

### ***C. Relationship to Land Price Surveys***

To monitor the nationwide land price movements, the MOCT undertakes a quarterly Land Price Survey (herein, "LPS") with the help of the

local government officials. From 1991, a sample of 31,500 land parcels were selected from a pool of 300 thousand Standard Parcels, and their quarterly price movements have been kept track of. Previously only 15 thousand land parcels had been observed to monitor the price movements. There is criticism that the linkage of that LPS to PDLV is not tight enough, and that LPS does not even reflect the price movements of SPs correctly.

#### *D. Other Land Information Systems*

There are other types of land information systems in Korea: the land cadastre called 'Ji-juk' and the land title registration called 'Deung-gi', managed by the local governments and the local offices of Title Registry, respectively. In early 1995, for the purpose of formulating better land policies and implementing them more effectively, the government formed a computer network of land information systems run by the Comprehensive National Land Information Center. The network is not one unified system, but a network of smaller systems linked together. Three participating computer networks are Land Cadastre Network(at MOHA), Household Registration Network(at MOHA), and Publicly-Declared Land Value Network(at MOCT). From its incipient stage of establishing inter-connectivity among the above information systems, the National Tax Administration (herein, "NTA"), Ministry of Construction & Transportation (herein, "MOCT"), and Ministry of Home Affairs (herein, "MOHA") are supposed to provide the center with their up-to-date database files on on-line or batch bases.

### **3. PDLV as Land Tax Assessments**

#### *A. Assessment of Capital Gains Tax on Land (OVIP vs. Actual Transaction Price)*

Currently, Korean capital gains tax is a non-recurrent, voluntary tax which is imposed mainly upon the realized gains of real estate transfers<sup>49</sup>.

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49. While unlisted stocks and other rights on the real estate than the ownership are also

The tax is levied on the increase in the asset value between two points of time: the acquisition and sale time. (Brief explanations on the different Rate Schedules according to the holding period, and Exemptions, recent changes, etc.)

The usage of OVIP in the tax base of property holdings tax, whether fully or partially, does not present major problems as long as the assessment ratio maintains time- and spatial- consistency. But problems originate from real world constraints that by its very nature the recurrent ad valorem taxes, like the property tax, inevitably involve periodic evaluations before the taxation is due. However, it is not the case with the taxes imposed when owners change hands, such as capital gains, acquisition and registration taxes. Also, as capital gains taxes are levied on the realized gains, it is not bound to suffer from the problem of estimating the unrealized gains accrued between the two time points as in the case of EIVL tax. After the introduction of PDLV system, Korea is maintaining a policy of using in principle<sup>50</sup> the PDLVs of acquisition and sale points of time in assessing the taxable capital gains. So the current principle of using OVIPs in the calculation of realized gains results in administrative difficulties for the taxing authorities in their obtaining tax information and possibilities of corruption in administering the tax.

Since the summing-up of capital gains in each year's transactions is still not aggregated with other incomes to form the global income tax base under the present schedular and separate income tax system, the possibility of unequitable tax burden distribution due to the failure of assessing the

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subject to capital gains taxation, the percentage of capital gains tax on lands and buildings in terms of cases and amounts imposed constitute 97%, and 98.6% respectively, in 1994. In that sense, the Korean capital gains tax can be called the 'Real estate Transfer Income tax.' Most financial assets like listed stocks and bonds circulated in the secondary market are exempt from the capital gains taxation.

50. There are occasions where the transaction prices of either acquisition or selling become known to the taxing authorities due to the availability of transaction documents. For example, when the transaction involves as one party a corporation obliged to keep business accounts to be audited, the transaction price appearing on the account book prevails and then the auxiliary principle of using transaction price kicks in. Another category of cases that the application of the auxiliary principle becomes mandatory is where the real estate transaction in hand becomes suspected of being speculative.

full value of gains does not yet loom big enough. Hence, even under the current progressive tax rate schedule of CGT, the assessment uniformity of time-dimension both within and between asset types matters most now. And, it is actually equivalent to setting the tax burden through adjusting the value of tax base with the prescribed nominal rates. But the future plan of transforming capital gains realized during the holding period into annual streams of income and applying comprehensive income taxation will need a change of assessment method. The biggest disadvantage of using estimated values like OVIP is the possibility of including hypothetical gains due to the difference in assessment uniformity at acquisition and sale times.

Then what makes the adoption of transaction price based assessment method of CGT so difficult in Korea? The National Tax Administration has had a hard time in verifying the accuracy of reported sale prices, and made it a principle standard to determine the acquisition and sale prices by OVIP. However what followed is that the reported sale prices in other sources, for example the figure on the certified sales contract required by law, started resembling the OVIP figures. Thus, the principle of using OVIPs as the estimated purchase and sale prices in the calculation of realized capital gains induces both parties of transaction to concoct a sales agreement listing the lowest transaction prices they think they can get away with. This kind of collusion of underreporting the sales amount to the tax authorities got worsened by the purchaser's extra benefit of savings on his acquisition and registration taxes which also use OVIP as their taxable value with some deductions.

We are then faced with the choice of improving the PDLV system to estimate the transaction price as closely as possible or changing the method of calculating the CGT tax base. The major problem inherent in the current management of PDLV system is that there are no legal and practical devices to guarantee the evaluation uniformity of PDLV in time dimension. The current developmental stage of PDLV is at the stage of improving the regional balance of OVIP, and efforts to improve the quality of PDLV by reflecting price fluctuations in time can not be expected in the near future. In addition, announcement of PDLV once a year, even

with the temporal price adjustment methods for holding periods, causes other problems. Therefore, reforming the assessment method of CGT from the current OVIP calculation principle to real transaction price principle should take place step-by-step.

With the recent changes in the law governing real estate registration to the Office of Registry and CGT, we can think of the following alternatives in moving toward the system of transaction-price-based assessment method of CGT:

① Stipulation on the sales contract form to be used for certification purposes that the reported figure would be regarded as the purchase price when the buyer disposes the property after a certain set date in the future, and the revision of the relevant laws in this context. And the copy of the Certified Sales contract which is sent to the NTA's local office should be used in the next assessment tax data;

② Taking measures in parallel to reduce the incentive of the buyer to under-report the sales figure to lessen the burden of Registration and Acquisition taxes, the rate of which is currently set to a high level of 5.8% in total ; and,

③ Revising the current version of Sales-Reporting-Requirement-before-Registration system on transactions, which will be effective after January 1, 1997, to include the sales amount as one of the items to fill out in the form, and put the above-mentioned statement in the form.

In all, we recommend an institutional approach to solve the problem of under-reporting sale prices by making the interests of both transaction parties in conflict.

### *B. Assessments in the Comprehensive Land Tax: CSTV vs. OVIP*

#### **1) Current Standard Value for Taxation (CSTV)**

*Si · Gun · Ku*-level local governments (Korean equivalent of Small city · County · Borough) are required to assess the unit value of each land parcel in their jurisdiction every year for the purpose of administering local land taxes like Aggregated Land Tax. Upon the transfer of land ownership and title being reported to the Do-level governments (Korean equivalent of

Province) the local governments are also required to appraise the property price to impose local Acquisition and Registration taxes, which are imposed at flat rates of 2% and 3%, respectively. The actual sale prices are hardly ever reported in full in the transfer tax filings.

The assessment of ALT is called the 'Current Standard Value for Taxation' (CSTV), and then recorded on the cadastre(ji-juk) and the land tax roll is maintained by the local governments. The assessment ratio, as commonly called in Korea, represent the ratio of CSTV to OVIP, and should not be confused with Assessment - Sale price ratio.

The first round of announcing values for all privately held land parcels occurred during the summer of 1990, and the land-related national taxes like capital gains tax and the three new Gongkaenyum measures came to be imposed upon this tax base from then on. The government, however, failed to adopt OVSP and OVIP as the new assessment system of local land-related taxes like ALT.

Even if the national average of the assessment ratio for ALT hovered around 26.9% in 1994 and a goal to reach the level of 30% or higher by 1995 is sure to be achieved, previous low levels of 15% ratio with the introduction of ALT has made this taxation ineffective in spite of the progressive rate structure (See <Table IV-4>).

## **2) Use of Increasing Land holdings Tax burden through carrying out the ALT (Assessments Leveling Plan)**

Another issue, aside from the failure to use OVIP as the tax base of ALT, is the lack of uniformity in the assessment ratios across parcels, regions, and taxpayers. Due to the structural nature of the ALT that the aggregate value of a taxpayer's land holdings throughout the country becomes the tax base, non-uniformity of each taxpayer's assessment ratio results from that of different assessment ratios among parcels located in different regions. These assessment disparities present some serious equity problems to a taxation like ALT with a progressive tax rate structure (See <Table IV-5> and <Table IV-6>).

The original version of the 'New 5 year economic plan' has the following directives in the land taxation field: ① Assessment ratio be increased

annually to attain the level of 30% or higher by 1995, ② the base of ALT be converted to 100% level of OVIP, and ③ the rate schedule be adjusted to guarantee a 100 to 200% increase from that of 1993 in the resulting effective tax burden. It is now being hotly debated in the policy-making circles whether to follow the original plan, retard the time schedule or maintain the status quo. The problems found in the original assessment leveling plan are:

① A rapid increase in the tax burden under the current 9 step brackets of progressive rate schedule ;

② Setting a target level of assessment ratio to attain during the long period of 5 years during which the market prices and the PDLV will change ;

③ Large initial variations across the assessment ratios ;

④ Political difficulties in carrying out the plan during election years ;

⑤ Taxpayers evading their ALT burdens by registering the lands under the names of family members without any land holdings ; and,

⑥ A time lag of PDLV announcements and determination of CSTV.

As the assessment ratio of ALT goes up, either by adopting OVIP as the tax base of ALT or by linking the CSTV to some higher percentage of OVIP, ALT taxpayers will be increasingly particular about the annual OVIP movements of their lands. The accuracy of the OVIP, as perceived by the taxpayers, rests upon the relative levels both in time and spatial dimensions. A taxpayer tends to evaluate the correctness of this year's announced OVIPs of his lands by comparing it with the OVIPs of nearby parcels and last year's OVIPs of his lands. Therefore, an attempt to solve some of the spatial equity problems in one sweep will be confronted with another problem of creating time-dimensional inconsistency of OVIP. Trapped in this dilemma, the national government decided to improve the current version of OVIP gradually by minimizing a change in the distribution of matched SP and the statistical estimation method.

The latest developments on ALT revision and the current issues related to its assessments are as follows:

At the end of 1995, the Local Tax Act was revised at the initiative of MOHA such that taxable value of the land in the local jurisdiction would

be assessed to some specified fraction of PDLV which can be set within a range by its local legislature. The task of how to choose the proper 1996 assessment level and the ensuing adjustment of tax rate schedules to obtain a heavier effective tax burden has been stopped altogether. The ministry opted to grant some taxation autonomy to the local governments by allowing them to vary the fraction of PDLV on which the assessment is made.

Thus, the original 1990 plan on ALT to raise the CSTV gradually to the full PDLV coupled with a rate schedule change finally came down to a possible widening of assessment ratio under the same nationwide aggregation rule and rate schedule.

### **3) Problems arising in the Separate Taxation of Land and Buildings**

In the countries where the land and buildings are taxed together as a total property, they are evaluated and assessed together and the local property taxes are levied upon the whole property value. Korea, however, has two separate taxes with different rate structures on buildings and lands. The Building tax in Korea called the 'Property Tax', which is a misnomer, has a progressive rate schedule of 0.3-7% for the residential buildings and a flat

rate of 0.3% for other buildings. And the ALT land holdings tax has two progressive rate schedules of 0.2%-5% and 0.3%-2% for the General-combined and Special-combined categories respectively, and 3 flat rates for the Separate categorized lands. Therefore, the relative tax burden of the land and building under two separate taxes has an important implication for the efficiency of resources and equity of taxation.

Let's take an example of the land and building tax burdens for several apartment house units which now dominate in the new construction of houses and will outweigh the single-detached houses in a few years. We collected data of apartment units with different-sized floor spaces but in the same location by choosing an 'H' apartment compound developed by the same construction company in the southern part of Seoul.

<Table IV-3> shows the following facts:

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First, the National Tax Administration (herein, 'NTA')'s assessments of the four different-sized apartments for the capital gains taxation maintains a relatively stable level of 78%-90% when compared with the recently observed market transaction prices nearby.

Second, the sum of building and land tax burdens for the four different-sized apartments have wider effective tax rate ranges of 0.1% to 0.18%, reflecting the two taxes' combined assessment ratio variability of 10% to 23%. It is worth noting that the larger-sized apartment units and units in taller apartment buildings tend to have lower assessment ratios. If the taxable value of the land tax (ALT) on the apartments were assessed as a full PDLV instead of CSTV, which is a fraction of PDLV, the problem of lower assessment for the larger-sized apartments will still exist while the overall level would go up to the range of 32%-76%.

Third, the above problem results from the fact that the valuation methods used in the building and land taxation are different and that there is no internal linkage mechanism that adjusts the two separate valuations on land and building to add up to approximate the market value of the whole. The PDLV and CSTV for land valuation assume the hypothetical situation of vacant land for all the building sites, while the buildings are appraised by the method of replacement cost taking depreciation into account.

< Table IV-3 > Case of Property Taxation on Apartments  
[Separate Taxation on Land and Buildings]

(Units : Thousand Won)

Unit floor area Classification	Apkujung-dong H Apartment			
	32 p'yong	47 p'yong	65 p'yong	80 p'yong
Transaction Price <sup>1)</sup>	218,500	418,000	695,000	1,185,000
NTA's Whole Assessment('94.7.1)	197,000	323,000	550,000	924,000
Assessed Ratio as a Whole	90.2%	77.3%	79.1%	78.0%
Buil- ding Tax Base	14,899	20,986	32,549	45,967
Tax Amount	100.07	184.57	658.17	1,650.85
Land PDLV	150,540	196,300	267,280	331,760
Tax Base <sup>2)</sup>	34,624	45,149	61,474	76,304
ALT Amount <sup>3)</sup>	169.88	228.81	347.78	466.42
Total Tax Amount <sup>4)</sup> (Building+Land)	269.95	413.38	1,005.95	2,117.27
Effective Tax Rate	0.124%	0.099%	0.145%	0.179%
Ratio of PDLV to NTA's Value	76.4%	60.8%	48.6%	35.9%

Notes:1) Transaction prices are averages of maximums and minimums published in a listing periodical named 'Real Estate Bank', July 1994.

2) The land share of each APT owner is apportioned by the fraction of unit's area occupied to the total floor area. The taxable value of the apartment land subject to ALT is effective as of June 1 (Base Assessment Date), and the PDLV is calculated on the basis of OVIP announced on June 30.

3) Since the ALT is levied progressively upon the owner's aggregate land holdings value, the tax amount is calculated under the assumption that the APT owners do not possess any lands elsewhere.

4) Total tax amount includes City-planning tax, Community facility tax, and Education tax in addition to the main taxes.

#### 4) A Test of Assessment Uniformity in the ALT

How the land holding tax burden differs locally in Korea and in most other countries where the local government has some power of rate setting was compared. If the land holdings tax in Korea has a flat rate structure<sup>51</sup> as in the case of local property taxes in the U.S., the difference of the land holdings tax burden for two specific parcels would result from differences in tax rates and assessment ratios. And the total tax burden of a land owner would depend simply on the summation of two separate multiplicative effects in each jurisdiction: that is, tax rate times the assessment ratio.

However, under the current nation-wide aggregated land holdings taxation of the ALT where the progressive tax rate schedule is set by the national level legislature, the ALT burden for an individual landowner holding lands of a certain value depends not only on the assessment ratios but also on the progressiveness of the rate structure. Suppose two landowners, A and B, have the same land holdings in terms of market value but in local jurisdictions 1 and 2, respectively, with the assessment level higher in 1. The landowner A will bear a heavier ALT burden than B. Also, of his total land holdings, the more land portion the landowner A has in jurisdiction 1, the heavier his total ALT burden will be in comparison with the landowner B, even if their total land holdings have the same market value. The provincial-level regional variation of assessment ratios can be found in <Table IV-4>. For example, in 1993, Jeonbuk province had the lowest assessment ratio of 11.5% while Jeju province attained the highest level of 29.7%.

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51. We suppose this hypothetical flat rate tax system only for the purpose of examining the importance of assessment levels of individual parcels in the progressive land holdings tax on the aggregated land value, i.e. the ALT of Korea. The major reason why the land values are aggregated for an owner across the country is that progressive rate schedules are to be applied on it.

< Table IV-4 > History of Assessment Ratio for ALT  
; National Average of CSTV-OVIP Ratios

(units : %)

	1991		1992		1993		1994		1995	
	% $\Delta$ in CSTV	Assessment Ratio	% $\Delta$ in CSTV	Assessment Ratio	% $\Delta$ in CSTV	Assessment Ratio	% $\Delta$ in CSTV	Assessment Ratio	% $\Delta$ in CSTV	Assessment Ratio
Nationwide	20.0	15.3	15.6	17.8	20.8	21.3	21.2	26.9	17.2	31.6
Seoul	19.4	13.3	19.4	15.9	19.4	19.5	26.2	24.9	18.7	29.6
Busan	21.7	14.8	21.7	17.0	21.7	21.8	34.7	27.5	14.2	31.4
Daegu	18.6	16.5	18.6	19.2	18.6	24.2	20.1	28.2	11.7	31.5
Incheon	19.8	17.2	19.8	17.7	19.8	21.6	52.2	27.7	15.2	31.9
Gwangju	27.1	11.1	27.1	15.4	27.1	19.5	38.4	25.0	24.5	31.1
Daejeon	27.3	13.7	27.3	15.1	27.3	22.0	37.5	27.5	15.0	31.7
Gyeonggi	23.6	14.4	23.6	16.6	23.6	21.0	48.0	27.4	19.0	32.6
Gangwon	19.5	22.3	19.5	18.7	19.5	22.3	33.4	27.3	19.4	32.6
Chungbuk	25.5	18.6	25.5	15.5	25.5	18.6	51.8	25.8	25.1	32.2
Chungnam	17.2	22.2	17.2	18.7	17.2	22.2	30.8	28.3	16.3	32.9
Jeonbuk	11.5	25.0	11.5	23.0	11.5	25.0	19.9	28.3	16.3	32.9
Jeonnam	13.8	25.1	13.8	21.2	13.8	25.1	29.6	29.6	12.2	33.2
Gyeongbuk	13.2	25.5	13.2	22.0	13.2	25.5	26.9	30.4	12.5	34.2
Gyeongnam	18.6	22.5	18.6	18.7	18.6	22.5	34.2	28.5	15.4	32.8
Jeju	29.7	18.5	29.7	14.1	29.7	18.5	38.3	25.2	24.5	31.4

Sources : Ministry of Home Affairs, Local Tax Administration Division.

Tables IV-5 and IV-6 show whether ALT taxpayers belonging to the same tax base bracket have the same assessment ratio in both General-combined and Special-combined categories. The data came from the 1993 ALT tax roll on 8,399 thousand individual landowners. We drew a stratified random sample of 15,652 individual taxpayers with each stratum defined by taxable land values and the owner's birth year. Since we

obtained the raw data on 150,035 land parcels owned by the sample owners, we carried out data editing process on missing and outlier observations to get the final dataset of 141,169 land parcels owned by 15,272 sample owners.

< Table IV-5 > Assessment Ratios for General-Combined-Landowners in ALT

(Units : %, Million Won)

Taxable Value Bracket	Statutory Marginal Rate	Observation	Assessment Ratios	T:Mean=0 <sup>1)</sup>	Pr= T <sup>2)</sup>	Effective Tax Rate
Under 20	0.2	3,767	24.67	0.015	0.99	0.049
Under 50	0.3	3,483	21.58	-0.612	0.54	0.049
Under 100	0.5	3,048	22.16	-0.975	0.33	0.071
Under 300	0.7	1,783	22.11	-1.250	0.21	0.105
Under 500	1.0	491	21.25	-2.208	0.03	0.141
Under 1,000	1.5	438	21.04	-2.970	0.00	0.195
Under 3,000	2.0	319	23.44	-0.612	0.54	0.326
Under 5,000	3.0	73	23.42	-0.469	0.64	0.462
Over 5,000	5.0	30	21.64	-3.027	0.01	0.640
Total <sup>3)</sup>		13,432	24.11	2.97 <sup>4)</sup>	0.0025 <sup>4)</sup>	0.051

Notes: 1) Student's t-value for the Null hypothesis that the group averages of assessment ratios are all equal.

2) It is the probability that the test statistic lies beyond the region prescribed by the above H<sub>0</sub>.

3) The data used in the analysis is extracted from the sample individuals of 15,272 taxpayers drawn by stratified random sampling from a population of 8.7 million ALT taxpayers. Among them the number of General-combined taxpayers is 13,432. We used the inverse of each observation's sampling rate in grossing-up.

4) F-value in ANOVA and Pr > F.

Sources: Ministry of Home Affairs, sample data on the ALT taxroll, 1993.

&lt;Table IV-6&gt; Assessment Ratios for Special-Combined-Landowners in ALT

(Units : %, Billion Won)

Taxable Value Bracket	Statutory Marginal Rate	Observation	Assessment Ratios	T:Mean=0 <sup>1)</sup>	Pr= T <sup>2)</sup>	Effective Tax Rate (%)
Under 0.1	0.3	2,647	22.43	0.010	0.99	0.067
Under 0.3	0.4	1,644	22.08	-0.211	0.83	0.075
Under 0.5	0.5	492	22.42	0.026	0.98	0.091
Under 1	0.6	350	21.09	-2.149	0.03	0.102
Under 3	0.8	106	20.50	-5.325	0.00	0.121
Under 5	1.0	34	20.73	-2.011	0.05	0.148
Under 10	1.2	6	23.19	0.332	0.75	0.203
Under 30	1.5	.	.	.	.	.
Over 30	2.0	.	.	.	.	.
Total <sup>3)</sup>		5,279	22.38	3.09 <sup>4)</sup>	0.0051 <sup>4)</sup>	0.069

Notes: 1) Student's t-value for the Null hypothesis that the group averages of assessment ratios are all equal.

2) It is the probability that the test statistic lies beyond the region prescribed by the above  $H_0$ .

3) The data used in the analysis is extracted from the sample individuals of the 15,272 taxpayers drawn by stratified random sampling from the population of 8.7 million ALT taxpayers. Among them the number of Special-combined categorized ALT taxpayer is 5,279. We used the inverse of each observation's sampling rate in grossing-up.

4) F-value in ANOVA and  $Pr > F$ .

Sources: Ministry of Home Affairs, sample data on the ALT tax roll, 1993.

According to <Table IV-5>, there are 3,767 individual land owners subject to the General-Combined category ALT and belonging to the lowest tax base bracket (less than 20 million Won). Even if the statutory tax rate to be applied to the taxable value of their General-combined categorized land holdings is 0.2%, the average assessment ratios of individual owners and the effective tax rates in the group are 24.67% and 0.49%, respectively<sup>52</sup>.

52. We calculated assessment ratios for each individual through dividing the aggregated taxable value of General-combined categorized land holdings by the PDLV value of the same land holdings. Also, the effective tax rate of General-combined category CLT for each individual was calculated by dividing the General-combined CLT amount by the PDLV value of the land holdings. Then, we report the weighted averages of assessment ratios and effective tax rates for each tax base bracket using the inverse of each individual's sampling rate as the weights.

First, we tested the (null) hypothesis that individual taxpayers' assessment ratios are all equal without regard to the taxable value group ( $H_0: (i = 1, 2, \dots, 8)$ ). According to ANOVA, we obtained the  $F$ -value=2.97 since the variations between groups from overall variations are larger than the variations within groups. Therefore, we conclude that the assessment ratios are not equal with the significance level of 0.25%<sup>53</sup>.

Second, especially the Student's  $t$ -values for the lowest four taxable value brackets, i.e. under 20 million, between 20 and 50 million, between 50 and 100 million, and between 100 and 300 million groups, show that the variations within the groups were large enough to reject the hypothesis of equal assessment ratio within groups with 5% significance level while the group averages of 24.67%, 21.58%, 22.16%, and 22.11%, respectively, were not much different from the total average of 24.11%.

The results were the same for the Special-combined category ALT.

### *C. Usage of OVIP in Other Assessments of Land Taxation*

During the latter part of 1980's, when land price inflation reached more than 30% per annum, the government started to introduce a set of somewhat radical policy measures to curbe the speculation-motivated holdings of land and to enhance the equitable distribution of tax burden on land. The new policy measures as a whole, commonly called 'To-Ji-Gong-Gae-Nyom', are translated as 'Public Concept in Land'. They include legislation on EIVLT, Excessive Residential Land Ownership Charge, and Development Charge as well as ALT.

Underlying tenet of these policy measures was to discourage unnecessary holdings of land in anticipation of capital appreciation by imposing heavy taxes and charges to selective landowners of large land holdings, and encourage disposition of lands back onto the market.

The Excessive Residential Land Ownership Charge, introduced under

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53. When the same analysis is carried out on the median ratio for level of assessment, the results may be different.

the Act of Urban Residential Land Ceiling, is imposed only to the owners of residential lands exceeding 660 square meters in total within urban planning districts. It was first put into effect in 1990 in six metropolitan cities, and since 1992, the area subject to this charge and the number of impositions has been shrinking.

The charge is levied annually on the value of residential lands exceeding the ceiling with a rate of 6~11%. Since the value of excessive holdings is calculated on the basis of OVIP (close to 70~80% of full market value), the burden of the charge is quite heavy once levied.

Another charge, called Development Charge, is levied on the owner of lands with large scale developments granted by the land use conversion permit. Since the windfall gains accrued by the government permit/approval are not subject to the capital gains tax until realized on transaction, Development Charge was introduced to prevent the developers from keeping the unearned development gains to themselves even in its tenure. In that sense it shares the same feature of taxation on unrealized gains as the EIVLT. The charge is 50% of the land value increment during the project period with the actual development costs deducted, and the value differential calculated on the basis of OVIP.

The Excessively-Increased Land Value Tax (EIVLT) is the most drastic tax introduced in 1990 among the 3 new measures in that a similar form of tax cannot be found in other countries, in the past or present. The Land Value Increment Tax in Taiwan and the British Betterment Levy basically have the nature of capital gains tax.

Its uniqueness comes from the fact that it is a mix of capital gains and land holdings taxes, and the owner of idle land cannot predict whether he will be subject to the tax or not. The tax was imposed at a 50% rate only on the idle and non-business lands whose value measured in OVIP appreciated in excess of the national average during the 3 year period. The new tax was levied for the first time in June, 1991 for the tax period of 1990-1992, and met strong resistance from the taxpayers for its heavy burden on unrealized paper gains. Most of the complaints and appeals were turned down and the taxes were actually collected. <Table IV-7> shows the results of two occasional impositions and one regular imposition of

## EIVLT.

&lt; Table IV-7 &gt; Determination of EIVL Tax

	1990 Occasional Assessment	1991 Occasional Assessment	1990, 1992 Regular Assessment
Average Land Inflation Rate(%)	20.58%	12.78%	34.26%
Normal Baseline Inflation Rate(%)	30.87%	19.17%	44.53%
# of Dong Experiencing Excessive Land Inflation	189	45	4,630
# of Land Parcels Assessed (in Thousands)	1,730	540	25,000
# of Taxpayers	23,381	4,103	94,147
Individuals	23,027	4,019	91,858
Corporations	354	84	2,289
Amount of Tax (in Billion Won)	463	34	948
Individuals	317	25	765
Corporations	146	9	182
Average Tax Amount (in Thousand Won)	20,660	8,310	10,090

After the "non-conformity" ruling against the Excessively-Increased Land Value Tax (EIVLT) Act by the Constitution Court in July of 1994, the Act was not abolished but amended to remedy most of the problematic aspects cited in the Court as follows:

1. The method of calculating the tax base, which had been stated in the lower-level legislation like Presidential Decree and Minister Ordinance, came to be incorporated into the Act itself.
2. The single flat tax rate of 50% has been changed to a progressive tax structure of two rates: 30% applied to tax base amounts of not more than 10 million Won, and 50% rate applied to amounts exceeding 10 million

Won. And there exists a minimum tax limit of 300 thousand Won.

3. Main taxable objects of EIVL tax are the individual owners with idling open lands, and corporate owners with unnecessary holdings of lands not directly used for business. Virtually most of the rented lands with little improvements had previously been categorized as idle lands, and hence subject to EIVL taxation. But the rented lands with any buildings erected on them are now non-taxable.

4. The amount of EIVL tax paid can be deducted as a necessary expense in calculating the taxable base of realized future capital gains on the transfer of land. Or the amount of EIVL tax paid can be credited toward the payment of future capital gains tax on the sale of the land in question. The degree of tax credit depends upon how soon the land changes hands after payment of EIVL tax. That is, 100% tax credit is allowed with the transfer of land within 3 years after taxation, and 60% tax credit with the transfer of land during 3 to 6 years after taxation. Also, if a piece of land experiences a price decrease during the next regular taxable period, then the amount of unrealized capital loss can be deducted from the subsequent price increase.

One of the main reasons why the Constitution Court ruled against EIVLT in 1994 was that the appropriate measure of excessive gains subject to the taxation of EIVLT depends critically upon the proper management of PDLV. The court took a negative view on the current functioning of the system, and ordered the improvement of OVSP accuracy, the degree of unbiasedness in the selection of SP, and the appropriateness of statistically estimating OVIP with the method. Urged to come up with remedial measures by the court, Ministry of Construction and Transportation, which is in charge of administering PDLV system, responded by increasing the number of Standard Parcels by 50% from the previous number of 300 thousands.

#### 4. Policy Suggestions for Improving Land Tax Assessments

First, it is important to define the primary function of PDLV system as a vehicle for reassessing the taxable values of lands subject to ALT, and setting its improvement direction pursuant to that purpose. Even if the OVIP is currently used in the calculation of taxable base of transfer taxes and CGT as well as ALT, it is desirable to prepare a medium-to-long term plan to use the actual transaction prices for the calculation of tax bases in the Acquisition tax, the Registration tax, and the CGT in the end.

The current PDLV system, in its two-tiered structure and procedure, is best suited to be used as an annual reassessment tax base of the land holdings tax. Hence, instead of pursuing various administrative purposes stated in the mother law and trying to use various tax bases, it would be desirable to find the main role of PDLV as the tax base of ALT, and to be its main direction of improvement. Especially where the ALT in the current structural form aims to attain vertical equity under the assumption of assessment uniformity across land parcels, and its taxable value would be calculated as some fraction of OVIP from now on, the biggest customer of the PDLV system is the local government officials in charge of administering the ALT.

We do see the basic line of improvement as follows:

① While measuring the accuracy of PDLV in terms of OVIP's closeness to market value, both in time and spatial dimension, we should pay more attention to obtaining the spatial land price balance during stable price periods, and the same degree of market price closeness during periods of price fluctuation.

② Since the accuracy of OVIP largely depends upon how representative the SP selected to compare with is in terms of land characteristics, the task of how to select and assign SP for a certain IP should start with the delineation of regional land market based on a more elaborate regional land market analysis. While previous reliance on jurisdictional boundaries had the merit of administrative convenience, it induced some distortions in the estimated price coefficients of Land Comparison Matrix Table.

③ To obtain the objectivity of PDLV, a Quality Monitoring system should be established by having an outside independent agency evaluate the overall performance of each year's PDLV by doing a sample analysis study on the Sales-Assessment Ratios.

With the primary function for the PDLV defined above, we need to examine how to improve the quality of OVIP; are more Standard Parcels or is a Better estimation method needed?

First, to improve the overall appraisal quality of Standard Parcels, statistical analysis on regional land market should precede the determination of how many SPs should be selected and allocated in a region.

Second, once the optimal number of samples for a region is decided, then the criteria for allocating samples within the region is set to include the factors which affect the land prices, such as land use and road access.

Third, the refinement of the estimation method of OVIP by some advances in the hedonic price regression models is needed (Refer to Section II-2).

Finally, the determination procedure of OVIP needs to be improved, including better appeals procedures. Currently, most landowners are simply notified of the annual OVIP changes during the determination process and are given short notice for appealing to the local evaluation board. Since the PDLV system is indirectly associated with the market transaction data and the OVIP is basically an estimated price of the most probable selling price, neither assessing authorities nor the landowners have much concrete evidence to discuss the appropriateness of the OVIP. Some form of allowing the landowners to participate in the reevaluation process is needed. We need more information on the Taiwanese experience of self-declaration system on property inventory and value, and the inventory verification system of property on the part of landowners in Chile and Sweden.

&lt; Table IV-8 &gt; Distribution of Standard Parcels in Korea

		1994 # of Standard Parcels	1995 # of Standard Parcels	Rate(%)
Metropolitan City	Seoul	22,780	32,255	41.6
	Busan	10,250	18,265	78.2
	Daegou	8,140	12,035	47.9
	Incheon	5,830	8,165	40.1
	Gwangju	6,230	8,590	37.9
	Daejeon	5,080	6,465	27.3
Gyeonggi	City	10,625	17,850	68.0
	County	21,875	32,390	48.1
Gangwon	City	3,965	5,945	49.9
	County	13,585	20,355	49.8
Chungbuk	City	2,910	4,460	53.3
	County	12,630	18,735	48.3
Chungnam	City	2,580	3,695	43.2
	County	22,210	34,810	56.7
Jeonbuk	City	6,300	9,200	46.0
	County	19,720	30,520	54.8
Jeonnam	City	4,320	6,740	56.0
	County	33,750	49,030	45.3
Gyeongbuk	City	6,615	9,715	46.9
	County	34,225	52,530	53.5
Gyeongnam	City	7,960	13,065	64.1
	County	29,040	45,815	57.8
Jeju	City	2,330	3,400	45.9
	County	2,960	5,185	75.2
Total		295,910 parcels	449,215 parcels	51.8

Sources: Korea Association of Property Appraisers, PDLV Manual, 1994, 1995.

< Table IV-9 > Scope of PDLV Application

Fee Appraisal by comparing W/OVSP under contract	Mass Appraisal by extrapolating OVSP to OVIP
<ul style="list-style-type: none"> <li>- Public Compensation for eminent domains</li> <li>- Bid price for public property</li> <li>- Revenue transfers between different levels and departments of government</li> </ul>	<ul style="list-style-type: none"> <li>- Adjustment of CSTV with OVIP(ALT)</li> <li>- Rent for public property</li> <li>- Development charge</li> <li>- Excessively-Increased Land Value Tax(EIVLT)</li> <li>- Excessive Residential Land Ownership Charge</li> <li>- Capital Gains Tax</li> <li>- Gift Tax</li> <li>- Inheritance Tax</li> <li>- Special Value Added Tax</li> <li>- Impact Fee for converting farm and forest land</li> </ul>

< Table IV-10 > Classification of Land Taxes by Taxing Authorities and Stages of Ownership

classification	National Tax	Local Tax
Acquisition	Estate Tax Gift Tax	Acquisition Tax Registration Tax
Holding	Income Tax (Individual & Corporate) EIVLT	Comprehensive Land Tax City Planning Tax Community Facility Tax
Transfer	Capital Gains Tax Special Value Added Tax	

&lt; Table IV-11 &gt; Distribution of Individual Parcel's Assessment Ratios

(Units : Thousand Parcels, %)

Assessment Ratio \ Year	1993	1994	Year \ Assessment Ratio
Less than 15%	1,269 (5.2)	165(0.67)	Less than 15%
15% - 20%	3,361(13.8)	474 (1.9)	15% - 20%
20% - 25%	5,637(23.1)	6,087(24.8)	20% - 26.9%
25% - 30%	5,744(23.5)	5,007(20.4)	26.9% - 28%
			28% - 30%
Over 30%	8,391(34.4)	12,813(52.2)	Over 30%
Total	24,402(100)	24,546(100)	Total

< Table IV-12 > Average Assessment Ratio<sup>1)</sup>(CSTV/OVIP) of ALT  
; Planned vs. Actual

(Units : %)

Year	1990	1991	1992	1993	1994	1995
Planned Ratio <sup>2)</sup>	36.9	41.4	46.4	52.7	60.0	
Actual Ratio	15.3	15.6	17.3	21.3	26.9	31.6

Notes : 1) Average assessment ratio is obtained by dividing the total CSTV value by the total OVIP value.

2) Initial figure announced by the MOHA before the inauguration of President Kim's administration.

Sources : Ministry of Home Affairs, Local Tax Administration Division.

&lt; Table IV-13 &gt; 1994 ALT Taxpayer Tax Amount Distribution

(Units : Thousand Persons, Billion Won)

Classification	Taxpayer		Tax Amount	
	Freq.(%)	Cumulative Freq.(%)	Sum. (%)	Cumulative Freq.(%)
Individual				
Less Than 10 Thousand	4,998 (43.8)	4,998 (43.8)	16.3 (1.5)	16.3 (1.5)
10 - 30 Thousand	3,415 (29.9)	8,413 (73.7)	50.8 (4.6)	67.1 (6.1)
30 - 50 Thousand	1,072 (9.4)	9,485 (83.1)	36.1 (3.4)	103.2 (9.5)
50 -100 Thousand	960 (8.4)	10,445 (91.5)	59.5 (5.4)	162.7 (14.9)
100 - 500 Thousand	769 (6.7)	11,214 (98.2)	139.2 (12.8)	301.9 (27.7)
500Thou - 1 Million	104 (0.9)	11,318 (99.1)	66.4 (6.1)	368.3 (33.8)
1 - 10 Million	87.3 (0.8)	11,405.3 (99.9)	205.3 (18.8)	573.6 (52.6)
10 - 100 Million	8 (0.07)	11,413.3 (99.9)	147.2 (13.6)	720.8 (66.2)
Over 100 Million	0.7 (0.03)	11,414 (100.0)	368.4 (33.8)	1,089.2 (100.0)
Total	11,414 (100.0)	11,414 (100.0)	1,089.2 (100.0)	1,089.2 (100.0)

Notes : Taxpayers include individual landowners as well as corporations and etc.  
Sources: Ministry of Home Affairs.

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## Glossary\*

**Acquisition Tax:** A transfer tax of two percent of the reported purchase price paid upon the sale of land and buildings.

**Act on Land Value Announcement and Land Appraisal(ALVA & LA):** A 1989 law unifying the systems for land valuation. The law was amended in 1995 to include certain Premier's decrees establishing guidelines for valuation which the Court had ruled required codification in law.

**Ad Valorem Tax:** A tax levied in proportion to the value of the thing(s) being taxed. Exclusive of exemptions, use-value assessment laws, and the like, the property tax is an ad valorem tax.

**Aggregate Land Value Tax / Aggregate Land Tax / Comprehensive Land-holding Tax:** A Tax levied upon the value of all the land throughout the country owned by a given taxpayer. It includes three types of taxes levied on the base of the Current Standard Value for Taxation(CSTV): the Special Combined Tax, imposed at eight progressive rates between 0.3% and 2% on land with non-residential buildings; the Separate Tax, imposed at varied flat rates on various specialized land uses, such as farmland, forest land(0.1%); pasture land, factory sites, development sites, electric utility and mining land(0.3%); golf courses and luxury properties(5%); and the General Combined Tax, imposed at nine progressive rates between 0.2% and 5% on all other taxable vacant land and on land used for housing.

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\* This glossary describes important terms used in this book, and defines common terminology for the land tax system in Korea. The primary source for these common terms is The International Association of Assessing Officers' textbook Property Appraisal and Assessment Administration. Korean words that appear in the texts of the book appear here in italics with their English translation.

**Appeal:** A process by which a property owner contests an assessment either formally or informally.

**Appraisal:** An estimation of value.

**Appraisal Ratio:** (1) The ratio of the appraised value to an indicator of market value. (2) By extension, an estimated fractional relationship between the appraisals and market values of a group of properties.

**Appraisal-Sale Price Ratio:** The ratio of the appraised value to the sale price (or adjusted sale price) of a property.

**Appraised Value:** An estimate of the value of a property before application of any fractional assessment ratio, partial exemption, or other such adjustment.

**Assessed Value:** The monetary amount at which a property is put on the assessment roll. Assessed values differ from the assessor's estimate of market value (appraised value) for three major reasons: fractional assessment laws, partial exemptions, and decisions by assessing officials to override market value estimates.

**Assessment Ratio:** In Korea, this is the ratio of the Current Standard Value for Taxation (CSTV) to the Official Value of Individual Parcels (OVIP), and not the ratio of assessed value to an indicator of market value, as it generally defined elsewhere.

**Cadastre:** An inventory of the land in an area by ownership, description, and value.

**Capital Gains Tax:** A progressive tax of 30% to 50% imposed on the profit realized from the sale of land. The taxable values are determined from the PDLV system, and not from actual transaction prices. For corporations, an increase in value between the sale price and book value is

added to corporate income and levied at the corporate tax rate, and, an additional tax of 25% is imposed on the increase in value between the acquisition price and the sale price.

**Capitalization:** The phenomenon whereby one or more events of economic consequence expected to happen in the future exert an economic effect on things in the present. Specifically, the conversion of expected income and rate of return into an estimated value in the income approach to value. Property taxes, anticipated changes, and land-related government services may also be capitalized.

**City Planning Tax:** A tax imposed on land and buildings located within urban planning areas at a rate of 0.2%.

**Community Facility Tax:** A tax imposed at progressive rates from 0.06% to 0.16% on the value of buildings.

**Computer-Assisted Assessment System:** A system for assessing real and personal property with the assistance of a computer. A computer may be used, for example, in the appraisal process, in keeping track of ownership and exemption status, in printing the assessment roll, in coordinating the work load of real property appraisers and personal property appraisers with respect to the assessment of commercial and industrial properties, and in a number of other areas.

**Computer-Assisted Mass Appraisal(CAMA):** A system of appraising certain types of real property that incorporates statistical analyses such as multiple regression analysis and adaptive estimation procedures to assist the appraiser in estimating value.(IAAO)

**Cost Approach:** One of the three approaches to value, the cost approach is based on the principle of substitution that a rational, informed purchaser would pay no more for a property than the cost of building an acceptable substitute with like utility. The cost approach seeks to determine the

replacement cost of an improvement less depreciation plus land value.

**Current Standard Value for Taxation(CSTV) / Standard Land Value(SLV):** The value used for assessment of the Aggregate Land Value Tax. It is derived by local governments from the OVIP, at assessment ratios of CSTV to OVIP that differ among localities. The assessment ratio is being gradually increased and is now approximately 30%.

**Depreciation:** Loss in value of an object, relative to its replacement cost, reproduction cost, or original cost, whatever the cause of the loss in value. Depreciation is sometimes subdivided into three types: physical deterioration(wear and tear), functional obsolescence(suboptimal design in light of current technologies or tastes), and economic obsolescence (poor location or radically diminished demand for the product).

*Deung-gi:* Land title registration.

**Development Charge / Development Land Tax:** A charge imposed upon the net land betterment profit gained from land receiving a land use conversion permit for large scale development. The charge is 50% of the net value increase, based on OVIP.

**Economic Rent:** In economics, the payment received by an owner of something being bought or rented in excess of the minimum amount for which he would have sold or rented it.

**Education Tax:** A tax levied at 20% of the Aggregate Land Value Tax on land, and at 20% of the Property Tax on buildings.

**Effective Tax Rate:** The tax rate expressed as a percentage of market value, different from the nominal tax rate when the value used for taxation is less than 100% of market value.

**Equalization:** The process by which an appropriate governmental body attempts to ensure that property under its jurisdiction is appraised equi-

tably at market value or as otherwise required by law.

**Excessive Residential Land Ownership Charge / Excessive Housing Site Tax / Excessively-Owned Housing Site Tax:** A tax levied on owners of residential land exceeding 660 square meters located within urban districts at the rate of 1% of the OVIP of the excess area.

**Excessively-Increased Land Value Tax(EILV) / Excessive Value Increase Land Tax (EVIL):** A tax levied on owners of idle, undeveloped land which increases in value in excess of the national average during a three year period. The tax rate, originally a flat rate of 50 percent of the OVIP, is now levied progressively at a rate of 30 percent for a value not more than 10 million won, and at a rate of 50% for a value exceeding 10 million won. No tax is levied on values less than 300 thousand won.

**Fee Appraisal:** Appraisal of properties one at a time, usually for a fee.

**Fiscal Cadastre:** An inventory of the information used for valuation and taxation.

**Full-Market-Value Assessment Standard:** Assessments for which a law or other standard requires that the assessment ratio.

**Gross National Product(GNP):** A nation's total economic activity, including consumer, investor and government income and expenditure.

**Improvement:** Anything done to raw land with the intention of increasing its value. A structure or building is the most common type of improvement, but other actions, such as those taken to improve drainage, are also improvements. Although rarely intended, some "improvements" such as a deteriorating structure or a hazardous waste site, can conceivably diminish the value of the land.

**Ji-juk:** Land cadastre system.

**Land Readjustment Project(LRP):** Until the 1970' s, the Korean government' s primary government program for rural to urban land conversion. Public sector infrastructure costs were financed by a tax on developed land.

**Leasehold:** The interests in a property that are associated with the lessee (the tenant) as opposed to the lessor(the property owner).

**Market Price:** A price a particular buyer and seller agree to in a particular transaction.

**Market Value:** The most probable sale price of a property in terms of money in a competitive and open market, assuming the buyer and seller are acting prudently and knowledgeably, sufficient time for the sale is allowed, and that the transaction is not affected by undue pressures.

**Market-Value Standard:** A requirement of law or practice that the assessment ratio of all properties. Two issues are implicit here: that fractional assessment levels be avoided and that all property be assessed on the basis of its market value and not on the basis of its value in some particular use -for example, agriculture-unless that use is the only use to which the property can legally be put (in which case its use value would be equal to its market value).

**Mass Appraisal:** The process of valuing a group of properties as of a given date, using standard method, and allowing for statistical testing.

**Multiple Regression Analysis:** A statistical technique used analyze data in order to predict the value of on one variable (the dependent variable), such as market value, from the known values of other variables (independent variables). If only one independent variable is used, it is called simple regression analysis; if more than one is used, it is called multiple regression.

**Multivariate Statistical Technique:** A kind of statistical analysis in which data containing a number of variables are analyzed to predict the value of some other variable. Multiple regression analysis is such a technique.

**Nominal Tax Rate:** The stated tax rate, which does not necessarily correspond to the effective tax rate.

**Official Value of Individual Parcels(OVIP):** The value of each land parcel within a jurisdiction, determined by its local government officials, using OVSP as a benchmark.

**Official Value of Standard Parcels(OVSP):** Appraised Land Values for a representative sample of approximately 450 thousand parcels of land throughout Korea, which are established as official values by the central government. Various taxes and other public uses are based on these values.

**Parcel:** A contiguous area of land individually described, and capable of being separately conveyed.

**Property Tax:** A annual tax imposed on the replacement cost value of residential buildings at progressive rates(0.3-7%), at a flat rate of 0.3% on all other buildings, with the exception of factory buildings located in residential areas which are taxed at 6%. Unlike the Aggregate Land Value Tax on land, the values of all buildings owned by a taxpayer are not combined for taxation.

**Property Tax:** A term generally used to describe a recurrent tax on units of real property, including both land and buildings. However, the property tax in Korea refers to taxes imposed on buildings only, and does not include taxes on land.

**Public Concept of Land(*To-Ji-Gong-Gae-Nyom*):** The name given to new policy measures which include the Aggregate Land Value Tax

(ALVT), the Excessively-Increased Land Value Tax(EILVT), the Excessive Residential Land Ownership Charge, and the Development Charge.

**Publicly-Declared Land Value(PDLV) System:** A unified land valuation system designed to achieve more reliable estimates of land value for identifying land price trends, tracking real estate activities, and levying land-related taxes.

**Ratio Study:** A study of the relationship between appraised values or assessed values and market values used most frequently to test the level and uniformity of market-value-based assessments. Ratio studies of Korean taxes, in contrast, examine the relationship between appraised OVIP values(estimated to be between 80 percent and 90 percent of market value) and the current standard tax value(CSTV).

**Real Property:** The tangible and intangible rights in land and improvements to land; sometimes also used to define a physical unit of land and the improvements on it, but real estate is the more accurate term to describe the physical land and everything permanently attached to it.

**Real Property Transfer Tax:** The tax payable to a state (and sometimes to a locality) upon the sale of real estate and the recordation of the transfer. The payment is usually proportional to the sale price and is commonly used by appraisers in the absence of more accurate information to deduce the price for which the property sold.

**Reappraisal:** The mass appraisal of all property within an assessment jurisdiction accomplished within or at the beginning of an reappraisal cycle(sense 2). Also called revaluation or reassessment.

**Registration Tax:** A tax imposed on registration of change in ownership, at 3.6% of the reported sale price of real property.

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**Replacement Cost Method:** One of the three traditional approaches to value, the cost approach is based on the principle of substitution - that an informed purchaser would pay no more than the cost of building an acceptable substitute with like utility. The cost approach determines the replacement cost, including material, labor and overhead, that would be incurred in constructing and improvement, minus depreciation due to physical deterioration and functional and economic obsolescence. (IAAO)

**Reproduction Cost:** The cost, including material, labor, and overhead, that would be incurred in constructing an improvement having exactly the same characteristics as the improvement in question.

**Sale Price:** The price for which a parcel(unit of real estate) was sold.

**Sales Comparison Method:** One of three traditional approaches to value, this method estimates value by reference to sale of comparable real property.

**Standard Parcel(SP):** A Parcel within a sample of parcels selected for appraisal for OVSP.

**Stratum, Strata(pl.):** A class or subset that results from stratification.

**Tax Rate:** The percentage of assessed value at which each property is taxed.

**To-Ji-Gong-Gae-Nyom(The Public Concept of Land):** The name given to new policy measures which included the Aggregate Land Value Tax(ALVT), Excessively-Increased Land Value Tax(EILVT), The Excessive Residential Land Ownership Charge, and the Development Charge.

**Transfer Tax:** A tax payable upon the sale of real estate. The payment is usually proportional to the sales price.