A ECONOMIC STUDY ON KOREA'S LAND MARKET

Chang-Soo Kim
Senior Researcher, Korea Land Corporation. Korea

Introduction

Economists perform policy evaluation based on the criteria of efficiency and equity. During the past decades, Korea has achieved a rapid economic growth and urbanization. Per capita GNP rose from 69 to 10,000 US dollars in 1960-1995, while urban population increased 3.5% on average, while 85% of total population is crowded in urban area.

Along with Korea's rapid growth of income and urban population resulted in a strong demand for urban land and housing. However, the supply of land and housing to be developed did not keep up with the growing demand. As a result, prices of urban land and housing rose so rapidly that stabilization of real estate prices has been a top issues of the Korean government policy (Kyung Hwan-Kim 1993).

On the demand side of market, land policy has attempted to control on the specular demand of land and housing which seemed to be one of significant variables of the increase of real estate prices over the last decades. However, recent change of market such that demand has declined under the recession on the cycle of real estate, while land supply has steadily increased.

This structural change of market pressure makes policy-makers do "deregulations" or "relaxation" about some regulations such as adjustment of greenbelts, however, we should be careful about this new trend of

deregulations could invoke some negative effects. This paper analyzes the relaxation of regulations of land use including greenbelts as well as empirical analysis on the land market of Korea.

Empirical Analysis on Land Market

In this section, we attempt to find the trend of variables in relation to land market of Korea as well as to empirically analyze the relationships between land market and national economy of Korea as follows.

In this study, the trend of principal variables which has mainly influenced over land market was shown in Table 1 and Table 2. And these variables were applied to statistically conduct empirical analysis on the correlations of these key variables and land price of market.

Table 1. Trend of Variables of Land Market (I)

(unit : %)

	land price	construction area	housing price	rental price	housing sites	land supply
86	7.3	13.9	59.5	53.9	59.3	11.4
87	14.7	10.2	69.6	52.9	29.7	-1.9
88	27.5	26.7	78.8	59.9	-19.2	-32.6
89	32.0	45.8	90.3	70.4	197.1	76.3
90	20.6	31.4	109.3	82.2	-9.1	30.9
91	12.8	-9.7	108.7	83.8	-31.9	-50.1
92	-1.3	-10.0	103.3	90.1	11.0	33.3
93	-7.4	24.5	100.3	92.3	-6.3	-25.2
94	-0.6	-1.3	100.2	96.5	-7.1	17.7
95	0.6	1.0	100.0	100.0	-9.7	10.3
96	1.0	-3.0	101.5	106.5	-9.7	-5.2

Sources: KOLAND (Korea land Corporation) 1997.

Table 2. Trend of Variables of Land Market (II)

(unit : %)

	house-holds	unit of housing	house supply	Apt. unsold	CPI	money supply	unemp-loyment	GDP growth
86	3.3	0.5	69.7	45.0	78.9	16.8	3.8	11.6
87	3.1	2.4	69.2	10.1	81.3	18.8	3.1	11.5
88	3.1	3.4	69.4	9.0	87.1	18.8	2.5	11.3
89	3.2	5.4	70.9	7.5	92.1	18.4	2.6	6.4
90	2.5	4.6	72.4	3.5	100.0	21.2	2.4	9.5
91	3.1	6.1	74.5	3.3	109.3	18.6	2.3	9.1
92	4.3	6.4	76.0	9.6	116.1	18.4	2.4	5.1
93	1.7	5.9	79.1	20.9	121.7	18.6	2.8	5.8
94	2.8	6.2	81.7	28.8	129.3	15.6	2.4	8.4
95	2.8	5.9	84.2	33.6	135.1	15.5	2.0	9.0
96	1.8	5.6	89.2	26.8	141.8	16.2	2.0	7.1

Sources : KOLAND, Bank of Housing 1997.

As shown in Table 3 in Appendix, the previous land supply was so inelastic not to be timely responding to the change of land demand. And the key variables to largely influence on land price were found as GDP growth, price level and money supply, and housing price, and so on.

And the variables to influence on the supply of land such as housing-site projects developed by KOLAND were the change of land price, ratios of apartments unsold, construction areas to be permitted, and price level and GDP growth.

With this findings from this study, we may say that to make a more efficient land development of public agency like KOLAND and KNHC, we need to conduct the analytical researches to construct some empirical models to predict and estimate in advance for the change of land demand; for example, the models to predict land price.

Table 3. Correlation Matrix of Variables of Land Market

	land price	construction area	housing price	rental price	housing-sites	land supply
①	1.000	0.653*	-0.270	-0.625*	0.494	0.243
②	0.653*	1.000	-0.258	-0.452	0.595*	0.389
③	-0.270	-0.258	1.000	0.834*	-0.348	-0.007
④	-0.625*	-0.452	0.834*	1.000	-0.387	-0.017
⑤	0.494	0.595*	-0.348	-0.387	1.000	0.743
⑥	0.243	0.389	-0.007	-0.017	0.743*	1.000
⑦	0.251	-0.194	-0.255	-0.415	0.263	0.314
⑧	-0.325	-0.289	0.911*	0.842*	-0.190	0.054
⑨	-0.687*	-0.510	0.565*	0.915*	-0.380	-0.098
⑩	-0.555*	-0.239	-0.364	0.144	-0.040	0.012
⑪	-0.688*	-0.524*	0.724*	0.978*	-0.425	-0.096
⑫	0.526*	0.496	0.103	-0.392	0.043	0.006
⑬	0.094	0.292	-0.820*	-0.771*	0.345	0.046
⑭	0.390	0.083	-0.647*	-0.670*	-0.174	-0.326

	house-holds	unit of housing	house supply	Apt. unsold	CPI	Money supply	unemp-loyment	GDP Growth
①	0.251	-0.325	-0.687*	-0.555*	-0.688*	0.526*	0.094	0.390
②	-0.194	-0.289	-0.510	-0.239	-0.524*	0.496	0.292	0.083
③	-0.255	0.911*	0.565*	-0.364	0.724*	0.103	-0.820*	-0.647*
④	-0.415	0.842*	0.915*	0.144	0.978*	-0.392	-0.771*	-0.670*
⑤	0.263	-0.190	-0.380	-0.040	-0.425	0.043	0.345	-0.174
⑥	0.314	0.054	-0.098	0.012	-0.096	0.065	0.046	-0.326
⑦	1.000	-0.160	-0.521*	-0.205	-0.437	0.089	0.214	0.090
⑧	-0.160	1.000	0.622*	-0.297	0.781*	-0.117	-0.829*	-0.783*
⑨	-0.521*	0.622*	1.000	0.412	0.967*	-0.640*	-0.647*	-0.486
⑩	-0.205	-0.297	0.412	1.000	0.260	-0.792*	0.309	0.152
⑪	-0.437	0.781*	0.967*	0.260	1.000	-0.535*	-0.740*	-0.595*
⑫	0.089	-0.117	-0.640*	-0.792	-0.535*	1.000	0.128	0.058
⑬	0.214	-0.829*	-0.647*	0.309	-0.740*	0.128	1.000	0.445
⑭	0.090	-0.783*	-0.486	0.152	-0.595*	0.058	0.445	1.000

Note: ① land price ② construction area ③ housing price ④ rental price ⑤ housing-sites ⑥ land supply ⑦ households ⑧ unit of housing ⑨house supply ⑩Apt. unsold ⑪ CPI ⑫ money supply ⑬ unemployment ⑭ GDP growth.

Recent Policy Change of Land Market

As introduced in 1977 in the form of a uniform price ceiling on housing-sites, this price ceiling leads to a reduction in the supply of urban land and housing.

For the supply of urban land, the Ministry of Construction and Transport (MOCT) approves land use conversion for the supply of urban land, being provided by public agencies, in order to prevent private developers from "windfall profits" from land development.

And thus a large-scale of land development projects have been mainly developed by the public sector such as KOLAND and KNHC (Korea National Housing Corporation).

Through this governmental efforts of public sector (KOLAND, KHNC), houses more than two million house could be constructed, corresponding to the master construction plan of two million houses over 1980s and 1990s. In fact, the supply of housing increased substantially since 1988.

A particular aspect of the Korean housing supply system is that all the apartments are generally sold before they are constructed, and than private developers may finance as early as when 10-20% of the project is advanced, which is called as "advance sale system" of housing- construction.

In 1994, with the revision of the National Land Use Management Act (NLMA), the share of "developable land" increased from 15.6% to 41.7% of total land. But according to the Urban Planning Act, only 14% of total land is designated as urban planning area (UPA), however 76% of UPA was zoned as agricultural land or greenbelts which are not developable. As a result, the share of land in urban use increased 4.3- 4.8% in 1990-1995.

Along with the introduction of "semi agricultural and forest area (SAFA)", SAFA is designated as 27% of total land to be developable.

The maximum floor area ratio (FAR) was set at 400% at the beginning stages.

But this SAFA system has brought problems of socio-economic and planning issues of "urban sprawling" and "flog-leaped development" of

metropolitan area of Korea, which was not developed and expanded based on planning in advance. And therefore, the Korean government recently attempts to find desirable solutions how to strengthen on the semi (quasi) agricultural area.

On the other, Korea's greenbelt policy offers another interesting example. Green belts were initially designated over period of 1971-1977, according to the provision of the Urban Planning Act of 1971, in order to pertain too much fast expansion of urban area. The greenbelts take up 5.5% of total land area of the country.

The amount of land designated by greenbelts of Seoul, capital city of Korea, is 40-50% of developable land in the metropolitan area. Only less than 50% of the greenbelts is forest. About one million persons live in greenbelt area. Any new construction or rebuilding inside greenbelts is strictly prohibited.

And thus government has recently attempts to relax some regulations on greenbelts to alleviate the property rights of the landowners and the hardships of residents.

Concluding Remarks

In this paper, we presented Korea's experience of the change of real estate price and land policy on market. In Korea, we have consistently to step-in for the purpose of helping or alleviating "market failure" which occurs when supply and demand is not in equilibrium.

But despite of these governmental efforts, we can not say clearly that public sector only plays all the roles for all the change of market.

And thus, we may conclude that both public sector and private one do find a desirable change of the current systems to rightly cope with the change of market and national economy of Korea, considering the correlations exists between land price of market and economic activities.

References

Angel, S. and Mayo, S. K., "Enabling Policies and Their Effects on Housing Sector Performance: A Global Comparison," paper submitted to the Habitat II Conference, Istanbul, Turkey, 1996.

Bertaud, A. and Renaud, B., "Socialist Cities Without Land Markets," Journal of Urban Economics, 41, 1997, pp. 137-151.

Case, K. E. and Shiller, R. J., "The Behavior of Home Buyers in Boom and Post-Boom Markets," New England Economic Review, 1988, pp. 29-46.

Green, R, Malpezzi, S., and Vandell, K., "Urban Regulations and the Price of Land and Housing in Korea," Center for Urban Land Economics Research, The School of Business, University of Wisconsin-Madison, 1993.

Hannah, L. M., Kim, K-H, and Mills, E. S., "Land Use Controls and Housing Prices in Korea," Urban Studies 30 (3), 1993, pp. 147-156.

Howlet, M. and Ramesh, M., Studying Public Policy: Policy Cycles and Policy Subsystems, Oxford University Press, 1995.

Kim, Chung-Ho, "Economic Analysis of Public Land Laws," Economics of Korean Laws, Korea Economic Research Institute, Seoul, Korea (in Korean), 1997.

Kim, Chung-Ho and Kim, Kyung-Hwan, "Expectations and Housing Price Dynamics Following Deregulation," draft, 1998.

Kim, Kyung-Hwan, "Housing Prices, Affordability and Government Policy in Korea," Journal of Real Estate Finance and Economics 6, 1993, pp. 55-72.

Kim, Kyung-Hwan, "Housing and Infrastructure Finance," Urban Studies, 34, 1997a, pp. 1597-1620.

Kim, Kyung-Hwan, "Government Intervention and Performance of the Housing Sector in Korea," paper presented at the international seminar on housing policy, November 1997, Seoul, Korea, 1997b.

Stigler, G., "Director's Law of Public Income Redistribution, The Journal of Law and Economics 13, 1970, pp. 1-10.