

An Empirical Analysis of Privatization in Urban Development

I. Introduction

1. Background and Objectives

Gyeonggi Province surrounding the metropolis of Seoul is a part of the Capital Area, the largest metropolitan area in South Korea. Since the decentralization and localization policy took effect in the 1990s, Gyeonggi Province has experienced a rapid growth through a variety of new development projects including the New City Development Project driven by the central government and small-scale land and housing developments led by the private sector. Its population finally exceeded the population of Seoul in 2005. For the most part, its rapid growth was prompted by a large-scale land development for the provision of massive housing implemented by the governments.

The development led by the public sector has been spurred by its exclusive power of eminent domain or condemnation that authorizes governments to acquire lands for the purpose of the public use. Nonetheless, public developments, in general, have shown an undifferentiated pattern of the development process from private developments, which are driven by profit-oriented market forces. Consequently, both public and private developments resulted in massive unplanned developed areas in the Capital Area neither being consistent nor complied with the comprehensive plan for the Capital Area.

This study conducts an empirical analysis of privatization in public developments for housing and examines the characteristics of each of already-developed zones and future developable zones in the Capital Area using the concepts of Urban Growth Potential and Land Development Potential. In doing so, this study aims to propose desirable urban management strategies based on the unique characteristics of future developable areas in order for governments to ensure well-planned and balance developments throughout the Capital Area. This will enhance differentiated roles of the public sector in urban growth management.

2. Methodology

Site selection for a future development is a continuous process of decision making and problem solving combined, taking various factors such as physical environment, timing or economic conditions into consideration. In order to develop an analytical model to examine this complex structure of the decision making process, this study adopts concepts of Urban Growth Potential denoting the potential growth of each local municipality and of Land Development Potential representing the potential development of specific local area.

Analytic Hierarchy Process (AHP) was used to build an Urban Growth Potential and Land Development Potential Evaluation Model. This model then was applied to examine already-developed areas and to future developable areas in the Capital Area. The purpose of the analysis of already-developed areas is to establish evidences of the privatization in public developments. The analysis of future developable areas is conducted to suggest desirable urban development management strategies on the basis of the characteristics of the developable areas derived from the model.

II. Theory and Policy

1. Public Intervention in Land Market

Land is one of three basic elements of the economic production system along with labour and capital. As a commodity, land has distinctive characters from other commodities in general; land cannot be reproduced, geographically relocated, or physically expanded or exhausted. For this reason, land market functions differently than any other general commodity markets, and therefore, optimal distribution of land through a regular market system is nearly impossible. That is why public intervention in land market can be justified.

There are two types of public intervention in land market; indirect intervention and direct intervention. Indirect intervention is described as that governments guide or direct a development process through regulations or subsidies based on enforced urban planning policy. Direct intervention is that governments directly participate in market activities and play an active role as suppliers or demanders. Examples of direct intervention include land acquisitions or site developments by governments. Table 2-1 presents techniques and purposes of public intervention in a land supply process by type of intervention.

<Table 2-1> Types of Public Intervention in Land Market

Type	Institution	Case	Purpose
Indirect	Regulating Guiding	Zoning Development permitting	To direct planned development
Direct	Land Development	Subdivision development, Land development for housing	To secure land supply To make profit
	Land Acquisition	Land acquisition, Land trust fund	To secure housing sites To make profit

Source: Youngeun, Lee, 2005, Study on the Indicators of Urban Growth Potentiality, p.30

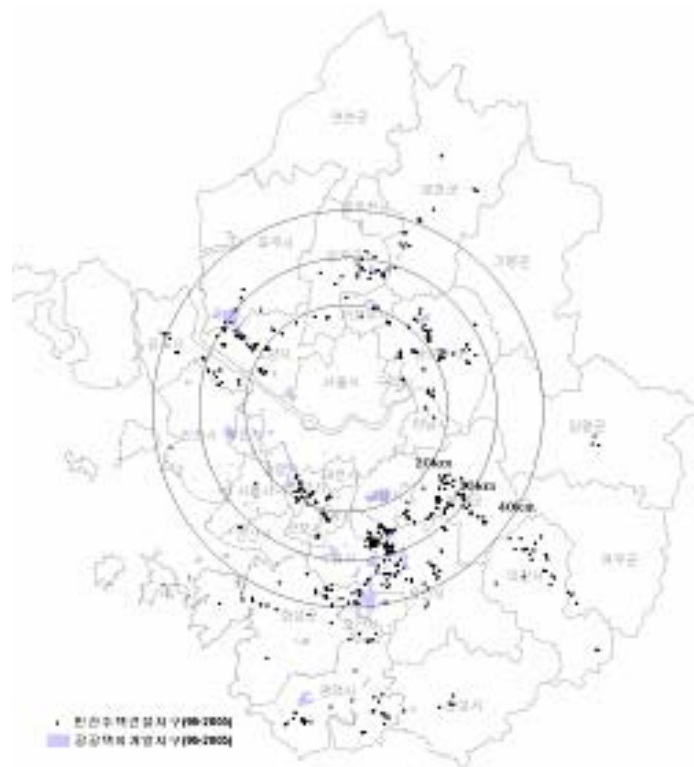
This study is intended to find the most efficient way of public intervention in land market based on the characteristics of future developable lands and to propose a guideline for the

government-led urban development management to ensure a land supply process for housing development with no problem.

2. Public Land Development in Korea

In general, land development can be broken down into two categories by developer type; public development and private development. Public development in Korea represents a type of development led by Korean National Housing Corporation (KNHC) or Korea Land Corporation (KLC), both established by the central government. Public development by these agencies has been vigorously promoted since Land Development Initiatives took effect in 1980. These public agencies are authorized to practice the power of eminent domain, which is such a powerful tool exclusively given for public intervention in land market. The legal base of the eminent domain power, which can limit private property right, is that public development is a legitimate activity to meet public interest. Therefore, public development should have a development process and produce outcome differentiated from private development, which is driven by market-oriented interests. Nonetheless, public development in Korea shows a similar development mechanism and a site selection pattern to those of private development. Figure 2-1 displays a similar siting pattern of development both by the public sector and by the private sector.

[Figure 2-1] Distribution of Land Development by Public and Private Sectors (1996-2005)



This similar pattern in site selection by public and private development is due to a resemblance in the process of acquiring land for the development. In Korea, it is a common process for both public and private developers to acquire either publicly or privately owned land for a housing development. In general, public land is preferred to privately owned land to avoid or minimize possible conflicts among parties of different interests.

Since regulations imposed on a quaci-agricultural zone were lifted in 1994, approximately 30 percent of the total housing development has occurred in rural areas where urban development plans have not been enforced. One reason that can explain why the quaci-agricultural zone became a desired area for the development is that the existing land use policy allowed for a high-density development in this zone. Maximum floor area ratio for a development in urban green lands is limited to 100%, while it is limited up to 200% in a quaci-agricultural zone. In relation to a permitting process, it takes much less effort to obtain a permit for a residential development through a process of the national land use change than through a zoning change process based on the urban redevelopment plan. In addition, it is easier to obtain a permit for a high-density development in a quaci-agricultural zone because this zone usually has a close proximity to public facilities or infrastructure that have already been established in nearby developed areas. For these reasons, a quaci-agricultural zone became a highly desired area for the development, and accordingly, development site selections have been focused and concentrated in this zone. However, this kind of development process should be discouraged for the future urban development. Instead, new urban development management strategies should be introduced in order to plan for location, scale, and timing of the development in advance.

III. Modelling

1. Indicator Selection

The following three steps have been taken to select indicators used to examine the implications of Urban Growth Potential and Land Development Potential. First, a preliminary set of 81 indicators was selected from a list of check items and land suitability indicators provided in the Urban Planning Guideline. Second, 35 indicators from the preliminary list were selected through literature reviews and an analysis of existing researches. Finally, through a correlation analysis and interviews with development experts, a final set of 21 indicators was chosen to be used in this study. The correlation analysis was conducted using 'urbanization rate' and 'local tax increase rate' as variables, and indicators that have a significant correlation with those variables were selected to evaluate urban growth potential. 'Employment growth rate' and 'subway/railway station' were later added to the final list of indicators as recommended by the development experts.

<Table 3-1> Final Indicators from Correlation Analysis

Variables	Final Indicator
Housing Unit Increase Rate	Population Growth Rate (0.689**) Household Increase Rate (0.394**)
Local Tax Increase Rate	Land Value Increase Rate (0.429*)
Urban Area Ratio in City Master Plan	Road Ratio (0.912**) Subway Station (0.508**)
Diffusion Ratio of House	Number of Public Office per capita (0.569**) Number of School per capita (0.799**)
Residential / Industrial Area Planned Area Ratio	Developable Area (0.369*) Commercial Zone (0.595**) Build-On Area (0.630**)

*Sig.(2-tailed)<0.05 / **Sig.(2-tailed)<0.01

2. Development of Analytical Model

1) Urban Growth Potential Model

An Analytic Hierarchy Model composed of the indicators previously selected is utilized to survey a group of development experts, and Table 3-2 presents a result of the analytical model derived from this survey.

<Table 3-2> Result of Analytical Model

Urban Growth Potential Model			Land Development Potential Model		
Index	Weight	Rank	Index	Weight	Rank
Population	0.08	2	Population Growth Rate	0.09	2
Household	0.06	6	Economic Growth Rate	0.09	3
Supplement of Housing	0.05	10	Land Value Increase Rate	0.06	8
Local Taxation	0.08	3	Floor Area Ratio	0.05	13
Land Price	0.06	7	Urban Area Ratio in City Master Plan	0.04	15
Employment	0.14	1	Urban Land Use Area Ratio	0.06	9
Translation Zoning Ratio	0.05	11	Area in Growth Management District of Seoul and its Metropolitan Areas	0.06	12
Developed Area Ratio	0.04	15	Travelling Hours	0.07	6
Undeveloped Area Ratio	0.05	9	Proximity to Planned Land Development Area	0.06	7
Metropolitan Control Zoning	0.04	13	Proximity to Interchange	0.08	4
Built-On Area	0.04	14	Proximity to Interstate/Local Roads	0.06	11
Plan of Land Development	0.06	8	Proximity to Railway/Subway	0.12	1
Road	0.07	4	Evaluation	0.04	14
Railroad	0.03	17	Number of Public Institution per Capita	0.06	10
Subway	0.07	5	Proximity to Existing Developed Area	0.07	5
Public Offices	0.03	16			
Schools	0.05	12			

Among those indicators, Employment Increase Rate ranks as the most important effect on Urban Growth Potential followed by Population Growth Rate and Local Tax Increase Rate. The most significant effect on Land Development Potential is a close proximity to Railway

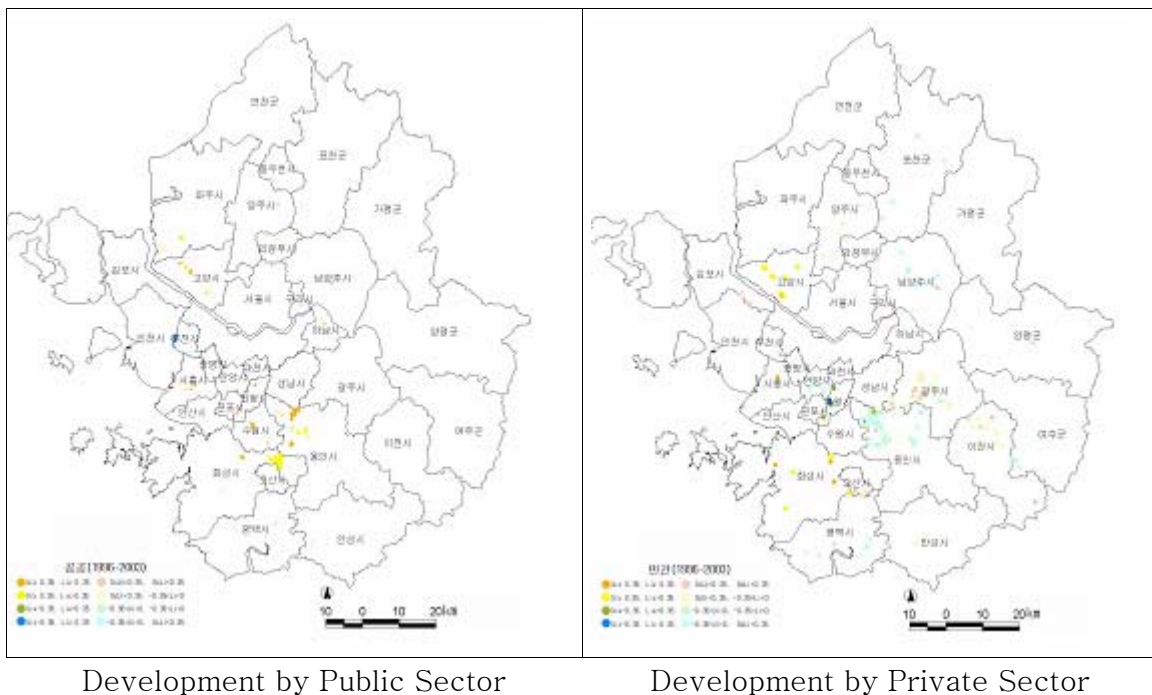
and Subway followed by Economic Growth Rate (0.100, 2nd rank) and Population Growth Rate (0.100, 3rd rank).

It appears that both public and private sectors favor areas for the development where the existing public facilities are readily accessible. Areas with a low level of land development potential hardly attract public or private development, and no additional growth is likely to occur in those areas in spite of a high degree of urban growth potential. To promote development in those areas, it is recommended that governments should examine various means to initiate public capital investment in public infrastructures prior to the development of land.

IV. Analysis

This analytical model has been applied to each developed zone to measure the degree of associations between two variables; Urban Growth Potential as X and Land Development Potential as Y. The developed zones with a high degree of Urban Growth Potential are displayed in yellow and other zones with a low level of Urban Growth Potential are displayed in blue in Figure 4-1 below.

[Figure 4-1] Distribution of Developed Areas by Degree of Urban Growth Potential(1996-2003)



exceptions to this. For example, a concentration of private developments appears in Youngin and Anyang Cities where Urban Growth Potential appears to be low. These two cities show a good example of unplanned developments driven by the private sector, taking advantage of already-existing public facilities constructed through the large-scale public development in nearby Sunnam City. In addition to that, the public sector followed the private sector's practice by directly involved in developing land for housing in those cities rather than taking a role of regulating or controlling unplanned developments. Further developments competitively driven by both public and private sectors continued, and as a result, Youngin City experienced a rapid growth of its population and industry. This city became a city with the highest potential of urban growth in the Capital Area. However, since 2000, the growth of population has far exceeded the city's capacity to accommodate and now, Youngin City is represented as a symbol of the unplanned development failure.

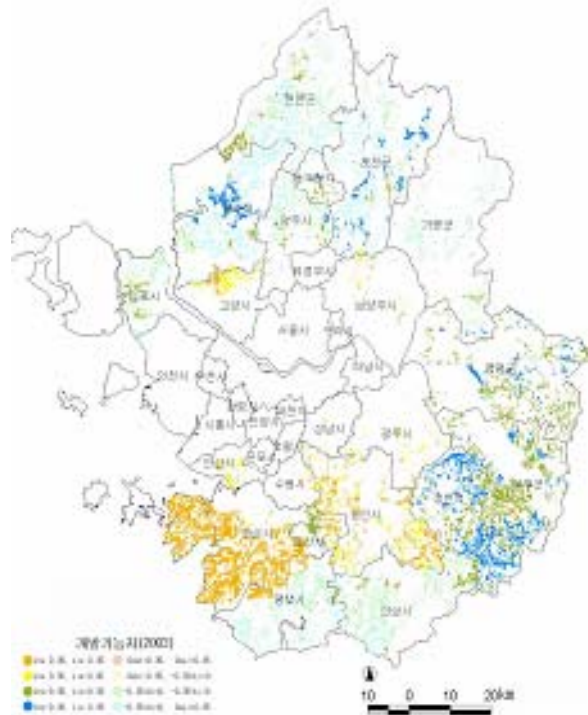
Therefore, for those areas with a high potentiality of both urban growth and land development or with a close proximity to the areas where a large-scale public land development has occurred, it is suggested that urban management strategies should be prepared in order to enhance a role of the public sector in planning and regulating a development process prior to the implementation of development plans.

V. Conclusion: A Role of the Public Sector in Urban Growth Management

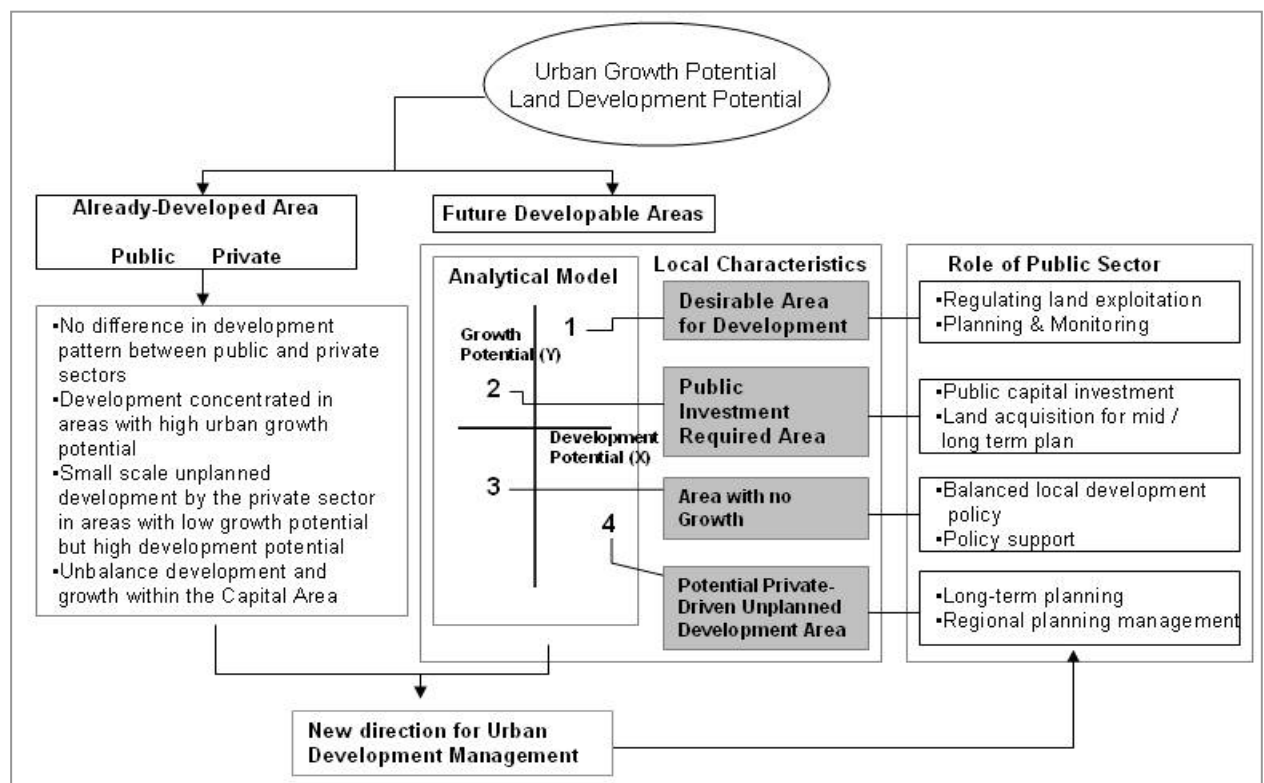
A result of this analytical model applied to already-developed areas indicates that both public and private sectors have shown a similar behaviour pattern driven by market-oriented interest in selecting a development site. A lack of governmental role as a manager or planner in a development process has deepened unplanned developments in the Capital Area. In order to re-establish a role of the public sector in urban growth management for the future, the model developed in this study was used to examine characteristics of future developable areas, and the summary of the result is presented in Figure 5-1, 5-2

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[Figure 5-1] Distribution of Future developable Areas by Degree of Urban Growth Potential



[Figure 5-2] Analysis of Future Developable Area



First, developable areas with a high level of urban growth potential and land development potential are concentrated in Yongin and Hwasung Cities. For those areas where urban growth potential and land development potential are high, the public sector should play a role as a city manager that facilitates a private-driven development with no direct intervention.

Second, developable areas with a high level of urban growth potential but a low level of land development potential are dispersed throughout the north and southern parts of the Capital Area including Ahnsan, Suwon, Kwangjoo, Namyangjoo, and Goyang cities. These areas generally require public capital investment and need a long term urban development plan provided by the governments given the lack of initiatives by the private sector.

Third, areas with a low level of urban growth potential and of land development potential are concentrated in the northern and eastern part of the Capital Area including Yeonchon, Dongdoochon, Yangjoo, Gapyong, Yangpyong, and Yeojoo Cities. For those areas, the government should play an active developmental role and support the private development for a balanced development.

Finally, areas with a low level of urban growth potential but a high level of land development potential are likely to have a concentration of small scale unplanned developments led by the private sector based on development suitability rather than demand. Therefore, such an area requires a mid term plan prepared by governments. Those areas include Pajoo, Yeonchon, Pochon, Yichon, and Pyongtaek Cities in the southern and northern part of Gyeonggi Province.

This study argues that most urban developments so far implemented by governments have not differentiated themselves from those of the private sector. It contends that governments should play its role based on the various characteristics of future developable areas. In doing so, this study sheds light on a future urban development management by suggesting a hierarchical and dimensional approach to urban developments based on the analysis of urban growth potential and land development potential.

V. Reference

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