

Growth and Management of Mega-Cities

—The Case of Seoul—

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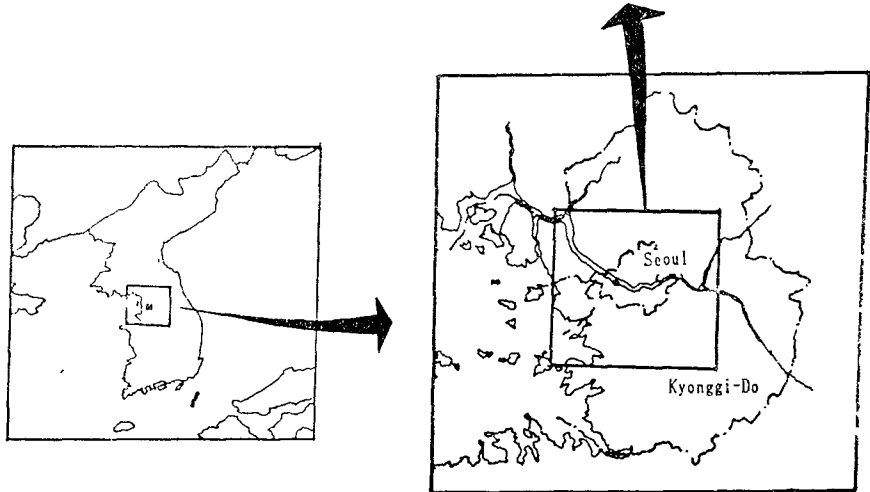
1. The Growth of Seoul

Seoul will reach its 600th anniversary in 1994 as the capital of Korea. Yet Seoul is a metropolis in the making. The phenomenal growth of the city is both consequence and a driving force behind the unprecedented socio-economic change that has transformed a pastoral preindustrial society into one of the world's fastest growing economies and a highly enterprising industrial nation. The transformation has been overwhelmingly abrupt, quickpaced and pervasive. Seoul has been a pivotal in this progress of transformation. Backed by its long-standing prestige as the center of power under a highly centralized politico-administrative system, Seoul has attracted a concentration of people and resources. In 1960, Seoul did not appear in the rank of 25 mega cities but marked 15th largest city in 1980 and is expected to become 7th largest city in the world in the year of 2000. ⁽¹⁾ Seoul has grown from an obscure national city in the 1960's to one of the world cities now. As of 1989, its population is approaching to about 11 millions and is still increasing by 500 persons in a day. However, Seoul seems to enter into another phase of urban growth that its metropolitan area comprising the Special City of Seoul and contiguous smaller municipalities (See Map 1) has experienced most rapid growth in terms of population and industrial distribution. There were only three cities (Inchon, Suwon and Uijongbu) until 1970. For last twenty years twelve cities have been incorporated in the

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(1) United Nations Centre for Human Settlements, *Global Report on Human Settlements*, UNCHS (Habitat), 1987, p.28.



Map 1. Seoul and Seoul Metropolitan Area

Table 1. Population Growth in Seoul Metropolitan Area (SMA)
(1,000 persons)

	1960	1970	1980	1988	Growth Rate		
					'70/'60	'80/'70	'88/'80
A. Seoul	2,445 (9.8)	5,536 (17.6)	8,367 (22.3)	10,310 (24.6)	2.26	1.51	1.23
B. Rest of SMA	2,749 (11.0)	3,358 (10.7)	4,965 (13.2)	6,858 (16.3)	1.35	1.47	1.39
C. SMA Total	5,194 (20.8)	8,894 (28.3)	13,302 (35.7)	17,168 (40.9)	1.71	1.50	1.29
D. Nation's Total	24,989 (100.0)	31,435 (100.0)	37,445 (100.0)	41,975 (100.0)	1.26	1.19	1.12

() % of A,B,C out of D.

Table 2. Changes in Manufacturing Establishment and Employment in Seoul Metropolitan Area (SMA)

	1960		1970		1980			
	Est	Emp	Est	Emp	Est	Emp		
A. Seoul	2,585 (17.0)	61 (24.4)	5,708 (23.7)	292 (33.9)	7,652 (24.9)	445 (22.1)		
B. Rest of SMA	1,477 (9.7)	26 (10.4)	2,208 (9.2)	104 (12.1)	5,680 (18.4)	479 (23.8)		
C. SMA Total	4,092 (26.7)	87 (34.8)	7,916 (32.8)	396 (46.0)	13,332 (43.3)	924 (45.9)		
D. Nation's Total	15,204 (100.0)	250 (100.0)	24,114 (100.0)	861 (100.0)	30,823 (100.0)	2,015 (100.0)		

	1988		'70/'60		'80/'70		'88/'80	
	Est	Emp	Est	Emp	Est	Emp	Est	Emp
A. Seoul	17,125 (28.6)	553 (17.7)	2.21	4.79	1.34	1.52	2.24	1.24
B. Rest of SMA	17,685 (29.5)	784 (25.1)	1.49	4.00	2.57	4.61	3.11	1.64
C. SMA Total	34,810 (58.1)	1,337 (42.8)	1.95	4.55	1.68	2.33	2.61	1.45
D. Nation's Total	59,947 (100.0)	3,122 (100.0)	1.59	3.44	1.28	2.34	1.94	1.55

Est=No. of Establishment, Emp=No. of Employment in thousands

() % of A,B,C out of D

area adjacent to Seoul.

As shown in Table 1, the population growth of Seoul outpaced that of the rest of Seoul metropolitan area (SMA) until 1980 but the trend has been reversed in the 1980's. In terms of Richardson's,⁽²⁾ polarization reversal representing the turning point when

(2) Harry W. Richardson, "Metropolitan Decentralization Strategies in Developing Countries",

polarization trends in the national economy towards the primate city give way to dispersion was about to begin. The trend is more conspicuous in the changing distribution of manufacturing establishment and employment as given in Table 2, There is also a persistent tendency for satellite cities surrounding Seoul to grow faster than Seoul. It is, however, noteworthy that the SMA as a whole still grows faster than the national average in terms of population and the number of manufacturing establishments. This is meant by that interregional decentralization strategy, which the Korean government has seriously pursued and implemented during last two decades has not worked well except a change in the degree of regional concentration of industrial employment in favor of greater dispersion.

This is exactly what we worried about Korea's decentralization policies from the beginning. The two main dangers in interregional decentralization strategies in Korea were promoting satellite cities too close to Seoul with the risk that they will eventually be engulfed as the boundaries of the metropolis balloon outwards over time. Secondary, the possibility that the satellite cities located just outside Seoul will pull migrants and resources from other regions of the nation rather than attract firms and households from Seoul and that this interregional pull does not divert flows that would otherwise have gone to Seoul but instead supplements and reinforces these flow into the SMA.

Consequently, about 41 percent of the nation's population in 1988 lives in the SMA with the radius of 40km from Seoul. The population share of the SMA has increased from 21 percent in 1960 to 41 percent in 1988. There is no clear sign that this trend will fade out. Consequences of increasing concentration into the SMA are grave. This unprecedented growth of the SMA calls for unprecedented response by the peoples and governments in the years that lie ahead. The process of urbanization must be understood as a basic condition for and as a functional consequence of economic, social and technological development. Indiscriminate efforts to avoid urbanization may only serve to play development.⁽³⁾ Even though a substantial effort has been made to cope with mega city challenge over the world, physical, institutional, financial, and planning problems persist in all the mege citie's with some different nature. It is nearly impossible to list all the problems with which Seoul and its metropolitan area are struggling to solve or ameliorate. The three issues which are deemed more important than others will be highlighted for

Y.H. Rho and M.C. Hwang ed., *Metropolitan Planning: Issues and Policies* (Seoul: Korea Research Institute for Human Settlements), 1979, p.92.

(3) United Nations, Department of Economic and Social Affairs, *Urbanization in the Second United Nations Development Decade*, (New York: United Nations), 1970, p.3.

further discussion. They are parochialism among local governments in the SMA, land issues and transportation problems.

2. Land Issues

Given the rapid pace of urban growth and projections, the question of land supply and the management of urban land has been one of the key issues. Land is the starting point for all urban development and it provides the physical location for shelter, industry, infrastructure, and other public services. As shown in Table 3. gross density per hectare in Seoul is 328 that is one of the highest in the world. As available built-up area within the jurisdiction of Seoul is dried up and further sprawl beyond the city boundary is artificially constrained by the green belt introduced in 1971, average density is doomed to increase to 381 in the year 2000.

Land problems in Seoul can be elaborated from two fronts i.e., limited land supply and inhibitive land price. There are two ways of meeting land pressure for ever-increasing population. One is to build large-scale new settlements beyond the green belt. In addition to the new industrial city of Ansan and Kwacheon where the central government complex was relocated from the central city, the government has recently launched two more ambitious new town developments in Pundang and Ilsan which is planned to accommodate 400,000 and 300,000 inhabitants respectively, intending to relieve mounting pressure for residential land in the central city. These two new towns just beyond the green belt being too close to be self-sustaining from Seoul in terms of employment and urban services, they will be *de facto* an extension of Seoul proper and contribute to the growth of SMA as a whole.

Effectiveness of the green belt as means of controlling urban growth has been questioned. As far as some built-up land had been available in the central city bounded by

Table 3. Gross Density Per Hectare in Seoul

	Population (1,000)	Built-up Area (hectres)	Gross Density
1988	10,287	31,326	328
2000	14,000	36,671	381

Hong Kong 314 (1973), Djakarta 208 (1979)

Mexico City 153 (1970), Bangkok 120 (1981)

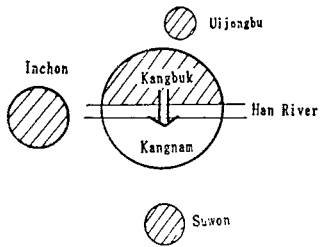
the green belt, green belt policy was thought to be effective. But, as pressure goes up, land development tends to go its own way in the region beyond the green belt no matter what we want or not.

Another way to accommodate land demand is to heighten the overall density of existing built-up area by the redevelopment of low-density residential area and squatter settlements or the encroachment of public open space. This process of in-filling is very active in the central city. Low-density single detached residential areas have been replaced by row house and high-rise apartment. Squatter improvement programs, which are usually coined with clearing squatter area for high-rise apartment complex are taking place everywhere in Seoul. Tension between the residents of squatter settlements and developers as a surrogate of middle-income class develops. Direct confrontation has commonly broken into tragic clash and is becoming great social problems. Squatter settlements occupying many hill-side areas in 1950's after the Korean War have superior location being close to the city center and land price is relatively cheap because of complications of land ownership title. They are easily exposed to the whim of real estate interest by developers implicitly endorsed by the city authority who has also concerned with the improvement of city's physical appearance and skyline. The city government finds itself as an arbitrator representing the socio-economic well-being of squatter residents on the one hand and the overcome of land shortage for housing on the other hand. In many instances, the city is loser and is still trying to solve this stalemate. The following diagram shows schematic process of urban growth in which the city has gone through roughly four distinct phases since 1960's.

Korea is experiencing great distortions in land market often expressed into unthinkable land price escalation due largely to an array of economic and demographic growth along with rapid increase of personal wealth. Land is considered one of the safest form of investment as a hedge against actual and anticipated inflation, and it is acquired by the newly rich not with its physical use in mind but rather a form of security against economic uncertainty. Land ownership in Seoul is strongly skewed to the extent that about 72 percent of households do not own a piece of land. Upper 5 percent of households have 57.7 percent of total land and 66 percent of land is owned by upper 10 percent. Land price in urban areas has increased 8.4 times from 1975 to 1988 as given in Table 4.

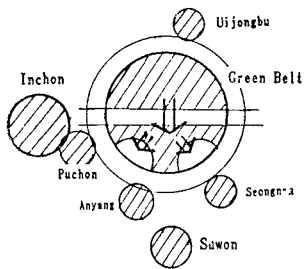
The single important determinant of increasing income inequalities among urban households is blamed for unearned segment from land price escalation. Land speculation

1960s



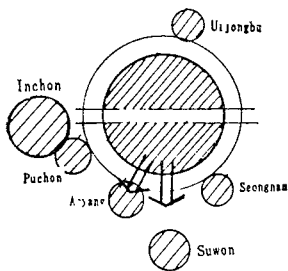
From Kangbuk to Kangnam urban sprawl and explosion

Early 1970s



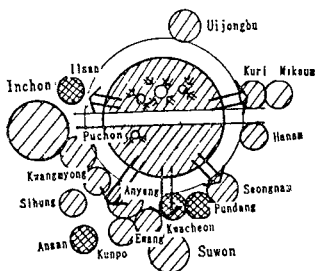
Infilling of Kangnam

Late 1970s



Designation of Green Belt increased overall density

1980s



Expansion beyond Green Belt planned New Town Development




-  expanded towns
-  new towns
-  urban renewal

Diagram: Schematic Development Phases

Table 4. Land Price Increase in Seoul

	1975	1980	1985	1988
Land Price	100.0	328.1	533.5	849.0
Housing Price	100.0	355.3	397.0	466.5
National Income	100.0	142.1	204.2	287.9
Price Index	100.0	223.4	289.0	293.9

Source: Report of the Land for Public Interest Committee, May 1989, p.2.

is widely practiced. Housing affordability for the urban low and middle-income households, especially for the urban poor has been gradually worsened because land cost component out of total housing price has increased faster than their income and savings while the urban rich having land accumulating their asset value and windfall benefit from land price escalation. Consequently, socio-economic fabric sustaining the stability of Korea society, which has been characterized by relatively egalitarian distribution since land reform in 1949 has begun to break down, bringing about the degradation of work ethic, the overburden of land acquisition cost for urban public works and the prevailing sense of deprivation among household without their own house.

The government has recently introduced various policy measures to prevent land speculation and to recoup unearned income from the hedging of land. In addition to a variety of tax measures which have been devised since late 1960's, more direct intervention into land market is introduced in 1990. It includes the maximum ceiling of residential land ownership by 660 square meters in Seoul, the recoupment of development gain up to 50 percent on specified projects, and the excessive land profit tax on vacant and underutilized land. It is too early to evaluate the effectiveness of those new strident measures and how would distort land market mechanism in Seoul. The phenomenon of land price bubble is the biggest threat to urban settlements in Korea. It is urgently needed to investigate the implications of land price bubble upon mega city planning and management and to find out a new enabling mechanism which will ensure a smooth supply of buildable land at reasonable prices while preventing unruly land speculation and recouping unearned incomes for the improvement of urban services and the enhancement of the social well-being of the underprivileged segment of mega city populace.

3. Transportation Problems

Although transportation problems are not only for Seoul but nearly all other large

cities in the world share certain commonalities, Seoul is almost getting into the state of crisis caused by a number of factors which are reinforcing each other. First is, of course, the rapid population growth. During the last ten years the population increased by about 2 millions to 10.3 millions in 1988. Even if the growth of Seoul's population has significantly slowed because of the intrametropolitan decentralization of population and industries, the total population of the SMA has gained a momentum of another hike, resulting in serious bottleneck of commuter traffic from Seoul to peripheral cities.

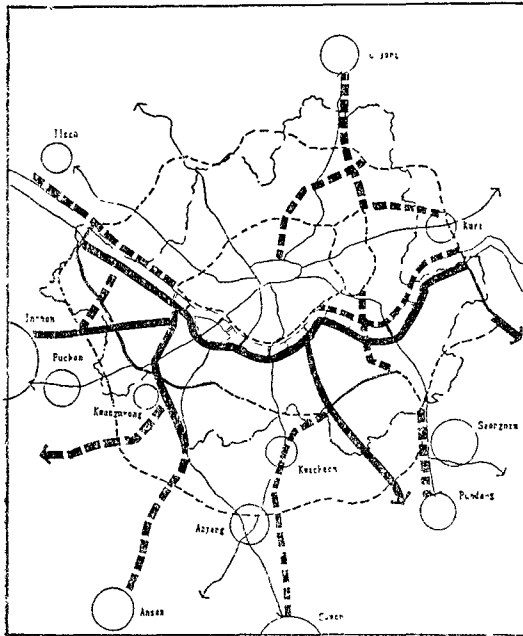
The second factor is increasing number of automobiles. As economic development proceeds, more and more persons are able to afford private car. The government may find itself in the position of being proponents of auto use in Korea where automobile manufacturing industry is increasingly becoming important to the national economy. Although car ownership rate is not very high as compared to western standard, convenience by individual means of transportation and its concomittant way of life has resulted in ever-increasing demands on street and parking problems. The number of vehicles in Seoul has been quadrupled for ten years from 1980. As of 1990, the number of private cars is just over one million or 10 automobiles per 100 people. It is expected to rise sharply for coming five years to 2millions. The typical response is to expand road and parking capacity to ameliorate increasing demands. The average speed of car slowed from 30.8km per hour in 1980 to 16.5km per hour in 1990. If any drastic measures are not to be taken, average speed will go down to 8.4km per hour in Seoul around the year 2000. ⁽⁴⁾

Thirdly, transportation demand has increased at the annual rate of 3 percent in the past, a higher rate than the population growth of 2 percent. The average number of trips per person per day was 2.13 in 1986 and is forecasted to increase to 2.19 in 1996. Under an increasing trend of separation of job place from home, the proportion of commuters is rapidly increasing in the SMA. The crowdedness of bus and subway is already over capacity by 150 percent and 277 percent respectively.

We know that there is no easy solution. Expectedly, the city government has responded with a double-edged strategy. One typical response has been expand road and parking space. This costly strategy has generated familiar reactions: more demand for locations in the center, more congestion, more demand for roads into the center, and so on in that positive-feedback cycle. Prospects for reduction in number of cars are not too

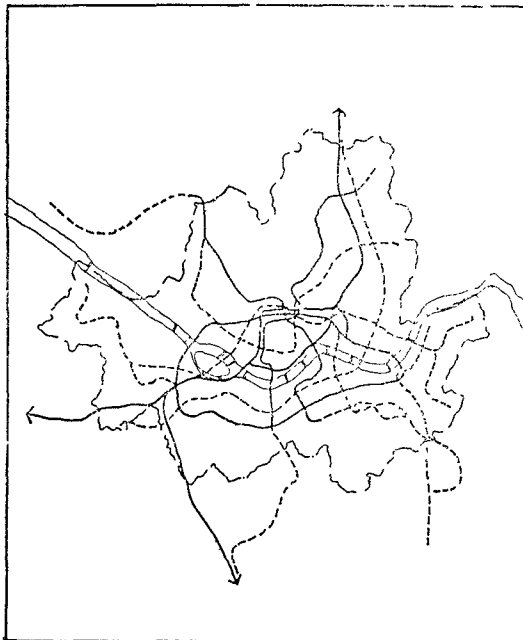
(4) Korea Transport Research Institute, *Urban Transportation: Problems and Prospect*, 1990, p.74 (in Korean).

Existing and Proposed Urban Freeways



- existing Urban Freeways
- - - planned Urban Freeways
- existing Beltways
- - - planned Beltways
- existing Trunk Roads

Existing and Proposed Subways



- existing Subways
- - - planned Subways

Map 2.

optimistic because for car owners seem averse to give up their car voluntarily. The city government is planning to build urban freeway networks to meet the expectation of middle income class who is ready to enjoy the pleasure of car ownership. Roadbuilding approaches might not be good options for high-density mega city like Seoul and will find themselves certain limits sooner or later.

Another approach is to expand mass transit system. Concentration of employment opportunities in the central district, dispersion of poor households to the suburban fringe increasingly necessitates public transit services. In addition to existing 4 subway lines of 123km, four more lines of 184km are planned to complete by 1998. (See Map 2). Exclusive bus lane or preferential treatment of buses is introduced. Traffic-generating facilities in the central city have to pay transportation charge by floor space area. Many other alternative schemes like road pricing and transportation system management are also under consideration. The transportation system management programs being undertaken by the city include reorganization and expansion of the computer signal system, expansion of one way traffic system and the operation of downtown loop bus lines. But they will not be an ultimate solution. There must be a number of complementary measures that would limit the use of automobiles and encourage public transit. In the long-run, structural changes are to be made to achieve travel reductions through the location of urban activities so that travelling could be minimized.

4. Metropolitan Reform

In spite of the fundamental changes that have occurred in the nature of human settlements, there is an evitable time lag between actual developments and the response of governments. Local government system of Korea consists of a two-tier local autonomous system. The Special City of Seoul and provinces are upper tier, and wards, municipalities and counties are lower tier. The Special City of Seoul has 22 autonomous wards and 15 municipalities are under Kyonggi Province. The Seoul metropolitan area covers the Special City of Seoul and 15 municipalities of Kyonggi Province. There are 37 autonomous local government units (22 wards and 15 cities) in the SMA.

At the first glance, one may sense that there must be in great need for metropolitan scheme or area-wide jurisdiction. In a highly centralized country like Korea, the necessity of metropolitan reform tends, however, to be minimum. When conflicts arise among

autonomous local governments, the central government use to intervene for arbitration. Local autonomy has been suspended since 1962 for reasons that political environment and local financial resources could be prepared to make healthy democratic participation possible. The Ministry of Home Affairs has taken powers previously exercised by local councils. The government has deferred restoring local autonomy up to now. No office of local government is elective. From provincial governors and county chief and city mayors, all local officials are appointed. As Henderson pointed out a pattern of extreme centripetal political dynamics, resembling a vortex, tending to sweep all active elements of society upward toward central power.⁽⁵⁾ Local governments have been degraded to the central government's *de facto* field office. The central government has been able to exert an absolute power on inter-local government affairs and conflict resolution. The national government has power to consolidate or annex local jurisdictions without the concurrence of local governments directly involved and can delegate or withdraw authority to and from local governments.

Under the circumstances, the central government is to play the role of metropolitan government. The Ministry of Home Affairs has intercepted jurisdictional and financial conflicts among local governments in the SMA by creating and consolidating municipalities. The Ministry of Construction has directly involved in metropolitan-planning and development. In same manner, many other central ministries have meddled into area-wide problems of the SMA. Many area-wide services have been managed by the government corporations under the central government. For example, metropolitan water supply system is run by the Korea Water Resource Development Corporation, land development by the Korea Land Development Corporation, and housing construction by the Korea National Housing Corporation. Since more than 50 percent of local revenue comes from local government, any kind of long-range financial commitment in metropolitan planning and development is highly contingent upon the priority of the central government.

As a token for area-wide coordination, the Administrative Consultation Committee for the Capital Region was first created in 1975. The Committee is mandatorily held twice a year to consult on metropolitan-wide planning, industrial estate development, environmental pollution, tourism development and other issues which the constituent members are deemed to be important. An agreement or resolution made at the Committee is not

(5) Gregory Henderson, *Korea: The Politics of the Vortex*, (Cambridge: Harvard University Press), 1968, p.5.

legally bounded for implementation. The Committee would have existed as a ritual or a fraternity gathering. There is no standing secretariat and permanent staff. The members consisting the Mayor of Seoul and mayors and county chiefs of lower local government units have equal voice in principle at the meeting but the voice of the Mayor of Seoul use to dominate in the bargaining table for inter-jurisdictional disputes. All these factors have made the Administrative Consultation Committee for the Capital Region not more than a symbolic institution.

But the situation is rapidly changing. The new Local Autonomy Law was enacted in 1989. It is now waiting for the enactment of procedural by-laws before a fullfledged local autonomy is restored after 30 years' deferment. Once local autonomy is introduced, we will surely face with the problems of governmental fragmentation and parochial rivalry. We have to prepare for the SMA to make effort toward jurisdictional and administrative reforms which may serve and facilitate the functioning of the newly emerging metropolitan system. Many different kinds of metro schemes have been pioneered in the great urban concentrations of London, Toronto, and Stockholm and have with some modifications been applied in other Asian cities. There are many options which Korea may learn from the experience of other mega cities, although any of them are not perfectly proven to be successful. It is a great task ahead for the Seoul metropolitan area.