Spatial Policies Towards the Seoul Capital Region

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Abstract

This paper describes and evaluates the impact of spatial policies towards the Capital Region of Korea (the Seoul Capital Region hereafter). Following the introductory section, the second section presents an overview of trends of concentration of people and employment in the Seoul Capital Region since 1960. The evolution of spatial policies and the major policy instruments employed is described together with an assessment the validity of the perception of excessive concentration in the Region. In the third section, the impact of spatial polices towards the Seoul Capital Region is evaluated based on new empirical evidence as well as findings from previous studies. The impact of policies on the spatial distribution of jobs and populations between the Seoul Capital Region and the rest of the country, as well as that of specific policies such as green belts, and the new towns project is analyzed. The section ends with a discussion of public opinion on spatial policies revealed through recent surveys. The last section addresses the political economy of spatial policies and concludes with thoughts on the way forward considering the changing environment for spatial policies

Key words:

Costs and benefits of spatial concentration, growth control and dispersal, interregional disparities, policy evaluation, political economy, Seoul Capital Region

Introduction

The concern that the largest cities are too large can be found in many countries the world over regardless of levels of development or population size. The array of policy measures undertaken to deal with the problems of the largest cities is also quite diverse. However, few countries in the world have carried out as forceful a set of regulations aimed at containing the growth of their primate city as Korea. During the process of rapid economic growth driven by export-oriented industrialization, population and economic activities were drawn to Seoul and later to its extended area officially termed as the "Capital Region" (Seoul Capital Region hereafter). The Seoul Capital Region consists of Seoul, Inchon, a port city about 40 kilometers west of Seoul, and Kyunggi Province that surrounds Seoul and Inchon (See Map 1). The government started trying to control the growth of the Region in the late 1960s.

<<<< Map 1 here>>>>

Government spatial policies have consistently aimed at discouraging the location of jobs and people in the Seoul Capital Region based on two fundamental premises. First, that the main cause of such problems as traffic congestion, environmental pollution and high housing prices is too many people living and working in the Seoul Capital Region. Second, that discouraging the growth of the Seoul Capital Region is beneficial to the other regions of the country. With these two presumptions, spatial policies have been counted on to secure a decent quality of life for residents of the Region and to promote balanced development of the nation's territory. Also, these policies have enjoyed strong support from the general public, although professional judgments on their effectiveness are more mixed and divergent.

Korea is now faced with new challenges. The nation' s economic competitive edge has eroded as its recent standing in national competitiveness shows. A consensus is that the central government should facilitate a transformation into a knowledge-based economy to stay competitive. Such a transformation has an important spatial dimension. Consider, for example, that a disproportionately large number of high-tech ventures are located in the Capital Region compared with manufacturing industries. This trend suggests that the Region will play an even more important role of leading the growth of the national economy in the future. On the other hand, it is feared that such a pattern will worsen interregional disparities that are already considered a serious national problem. The worries are taken seriously because other regions suffered much more than the Seoul Capital Region from the recent economic crisis. At the same time, environmental concerns are growing much stronger and development in general is becoming much less acceptable all across the country.

With this as background, this paper seeks to re-think spatial policies towards the Seoul Capital Region. It starts with an overview of the trends of spatial concentration of population and jobs in the Region, and the evolution of spatial policies followed by an evaluation of those

policies. We investigate their effectiveness in influencing the location of people and jobs, as well as identifying side effects. Finally, the paper concludes with some thoughts on the way forward, considering the fundamental need for redirection in the changing policy environment.

Trends of concentration of population and employment in the Seoul Capital Region

Before we describe the trends of concentration in the Seoul Capital Region, it is useful to start with a bigger picture. Korea has rapidly urbanized over the past 40 years during which the share of urban population increased from 39% to 87%. Currently, almost 90% of Koreans live in cities and towns with 20,000 or more inhabitants, the official definition of urban areas in Korea. Although the rankings of the largest cities remained unchanged during the period, growth varied considerably among medium and small sized cities. Table 1 presents the results of the standard regression equations for city size distribution, i.e.,

$$\text{Ln } R = \ln A - \alpha \ln S$$

Where S is the population of a city and R is its population rank. A is an empirical constant. The sample consists of cities with a minimum population of 50,000. The Rank-size rule holds if the Pareto coefficient α equals 1 (Cheshire 1999). The estimated α for Korea has been consistently smaller than 1, although it has been increasing since 1990. The result suggests that Korean cities are less evenly distributed than the Rank-size rule implies.

<<<< Table 1 here>>>>

Let us now turn to the trend of spatial concentration of population in the Seoul Capital Region since 1960. Table 2 shows that population growth in Seoul peaked in the sixties and has decelerated since 1970, whereas the growth rates of Inchon and Kyunngi Province overtook Seoul's in the mid 1970s and continued to rise until 1990. During the 1990s Seoul's population decreased in absolute numbers partly because of out-migration to the five new towns built beyond the outer edge of Seoul's green belts within the Kyunggi Province. The growth of population in Inchon and Kyunggi also slowed down in the 1990s, so that the population growth rate of the Seoul Capital Region as a whole during the first half of the 1990s dropped to half the level of the second half in the 1980s. In terms of the population share as a percentage of the national population, the share of Seoul went up from 9.8% in 1960 to 19.9% in 1975 and currently stands at 21.4%, while that of the Seoul Capital Region started from 20.8% in 1960 and is now at 46.3%. In summary, one can say that population in the Seoul Capital Region has continued to increase over the past four decades but the pace has been decelerating since the

1980s and that spatial decentralization has taken place within the region since 1975. This pattern can be seen from Map 2 and Map 3. Map 2 shows population densities within the Seoul Capital Region in 1980 and 1995 and Map 3 shows employment densities in 1981 and 1998. Dispersal of employment appears more marked than that of population.

<<< Table 2 here>>>>
<<<Map 2 and Map 3 here>>>

Evolution of spatial policies towards the Capital Region

As early as 1964, it was felt that Seoul was too large. Ever since, various measures have been implemented to limit the growth of the capital city and later that of the Seoul Capital Region. The establishment of manufacturing plants, universities and colleges and corporate headquarters has been banned or allowed on a very selective basis on and off. Green belts were designated around Seoul in 1972 and expanded until 1978 (See Map 1). Urban development was strictly prohibited on land zoned as green belts. Differential tax treatments were provided to discourage location in the Capital Region or to encourage dispersal from the Region. Some government offices were moved out of Seoul.

Promulgation of the Capital Region Management Law in 1982 marked a consolidation of policy efforts into a comprehensive framework. According to the provision of the Law, the First Capital Region Management Plan for 1984-96 was prepared in 1984. The Plan was implemented together with other land use regulations at the same time. The basic tenet of the Plan was to divide the Capital Region into five zones and to apply different degrees of growth control to each zone. For example, new construction of buildings with floor space exceeding 300,000 square meters or with more than 21 stories, colleges and universities, and factories employing more than 10 workers was banned within Seoul. These five zones were consolidated into three as a result of a 1994 amendment to the Law.

The Second Capital Region Management Plan for 1997-2011, prepared according to the same Law, adopted a somewhat more flexible approach. For example, direct growth controls of population-inducing facilities on a case-by-case basis were replaced by a system of indirect incentives and disincentives to steer them in a manner consistent with government policy. High-tech industries were accommodated in the Seoul Capital Region to better cope with global competition, and transport infrastructure investment was made to improve overall efficiency and to strengthen the Region' s potential to serve as an international center.

Such changes were met with a mixed response. On the one hand, the other regions interpreted such moves as compromising the traditional spatial policy stance (Choe and Kim 1999), because they believed that increasing prosperity of the Seoul Capital Region is

incompatible with the growth of their regions. On the other hand, economists felt that the changes were only marginal with the fundamental approach of growth control remaining unchanged. For example, they challenged the rationale for the annual quota on the allowable total floor area of manufacturing plants set by government officials and distributed over local governments in the Region. All in all, it is fair to say that spatial policies towards the Capital Region have consistently aimed at controlling population and population-inducing economic activities, though there has been a noticeable shift away from containment to management over the last decade or so.

"Excessive" concentration in the Capital Region: Perception or truth?

Whether the Capital Region of Korea is too large is the first question to ask before any government policy intervention can be justified. The urban economics literature is quite skeptical about the notion of optimal city size or optimal city size distribution and its usefulness in guiding policy. For example, Richardson (1972, p.29, p.32) argues that the search for optimal city size is unsound even from a theoretical viewpoint and that a static framework is totally inappropriate for this exercise. The notion of optimum city size becomes elusive in a dynamic setting because the capacity of a city to accommodate population can be expanded through investments. Even in a static framework, Mills and Hamilton (1994, pp. 400-403) illustrate that the common sense view that large cities become too large does not always hold true. They show that it only happens if the incremental damage due to negative externalities increases with population size. Since agglomeration economies, or the advantages of proximity, work in the opposite direction, however, large urban areas can be "too small" as well.

In practice, the magnitude of the two types of externalities is very difficult to measure, especially so for agglomeration economies. Nevertheless there is a general tendency to over-emphasize the potential costs due to negative externalities while paying less attention to the potential benefits of large cities (Montgomery 1988, p.691). The typical argument that the Seoul Capital Region is too large is based on a set of statistics such as the Region's share of population, manufacturing jobs, colleges and universities, the amount of deposits at and loans made by commercial banks, and some other indicators representing differences in the quality of life. For example, an official government report on national land use describes the problem as "the region, consisting of 12% of the country's physical territory, holds 46% of total population, 54% of manufacturing premises, 42% of universities and colleges, and 85% of corporate headquarters (MOCT 2001, p.246)". Measures of concentration in the Seoul Capital Region are sometimes compared with those of the London, Paris and Tokyo Metropolitan areas. Kim T (2001, p.8) notes that the Capital Region's population share of 46.3% is much larger than that of the capital regions of France (18.2 %) and Japan (32.3 %). But these figures do not say much

about the social costs of concentration. More importantly, the differences in primacy figures among different countries can partly be explained by the differences in the relative magnitudes of transport costs, scale economies, and labor migration underlying the process of urbanization (Puga 1998).

The perceived problems associated with over-concentration of the Capital Region can be grouped into two types. The first problem pertains to the deterioration of the quality of life available to the residents of the region. This is attributed to environmental pollution, traffic congestion and the high and rising prices of housing. The second problem is the decline in living standards for people living elsewhere in the country. This is almost tautological because it is based on a view that considers economic vitality of the Capital Region to be detrimental to the growth of all other regions.

Measuring costs and benefits of spatial concentration

A fair amount of research has been carried out to estimate the costs of negative externalities caused by spatial concentration in the Seoul Capital Region. For example, Kim D et al (2000) estimates the congestion cost of Seoul in 1999 at 4.2 trillion won ($1= 1,145 won in 1999)[1]. Lee B (1998, p.56) estimates the productivity loss due to congestion at 3.2 trillion Won in 1993 ($1= 808 won in 1993), equivalent to 4.67% of Seoul's GRP. Lee SB and Park (2000) estimate the cost due to traffic accidents in Seoul at 1.4 trillion won and 4.0 trillion won for the entire Capital Region in 1998 ($1= 1,208 won in 1998) including the cost due to pain, grief and suffering. Estimates of costs of environmental pollution are also available and Lee SW (2000) provides a good survey of them. But none of these estimates can be considered social costs because they are computed without reference to the socially optimal level of pollution or congestion.

However, the critical question is whether the marginal damage due to environmental and other externalities increases with population size making the Seoul Capital Region too large. Kim K (1993) estimated regression models linking air pollution, wastewater discharged, and garbage disposed of to population size and other explanatory variables using 1991 cross sectional data on Korean cities. He did not find evidence in favor of the common sense relationship posited above.

On the other hand, far fewer studies have attempted to estimate agglomeration economies in Korea. Lee B (2000) used firm level data to estimate the production function of the manufacturing industries located in the Capital Region. He found that localized economies were very significant while the effects of urbanization or agglomeration economies were not so apparent. He further noted that productivity in some industries was smaller in the largest urban areas.

We estimated a set of regression equations to see if urbanization economies exist and if the productivity of manufacturing firms in the Capital Region is different from that in other regions. The equation we estimated is given by

$$\ln(Y/L)ij = \text{constant} + \beta_1 \ln Pij + \beta_2 \ln(K/L)ij + \beta_3 D$$

where Y is a measure of output, L is labor input, K is capital stock, and P is the size of population. D is a dummy variable that is equal to 1 for the Capital Region and 0 otherwise. The subscripts ij represent region i in year j. The 1994-98 regional level pooled data for manufacturing industries were used. The estimation results presented in Table 3 suggest that the average productivity of labor (Y/L) rises along with population size, implying that agglomeration economies exist. The coefficient of the dummy variable had a positive sign but it was statistically significant only in the equation using value added as the dependent variable. Although a more careful study is needed to cover other industries as well, our results do indicate that there are productivity benefits to large agglomerations in general and to spatial concentration in the Seoul Capital Region in particular. Our results are also consistent with the conclusion of the literature on agglomeration economies and productivity (Beeson 1992).

<< <Table 3 here >>>>>

It should be pointed out, however, that the advantages of large urban areas are not properly measured by the conventional manufacturing-based cost functions suggested above. The organization of the production and transfer of knowledge, and the organic process of learning through networks and clusters are essential for the development of regions and cities (Lambooy 1997: 293, OECD 2001:120). Agglomeration relates to differences in the size of cities as well as in the composition of their economic activities, and the largest cities are the best place for the concentration of complex activities. (Lambooy 1998: 460). These facts suggest that the capital city growth is likely to continue.

Although social benefits and costs should be compared at the margin to determine whether or not a region is too large, no such attempt has been made using actual data on Korea to the best knowledge of the author. Suh (1997) computed the net welfare cost of over-concentration in the Capital Region at 2.7% of GNP in 1985 and 3.1% of GNP in 1994. But his calculations were derived from simulation rather than estimation of costs and benefits using actual data.

The damages done by concentration in the Capital Region to the rest of the economy

The costs associated with the second problem of detrimental effects in other regions are seldom presented in quantitative terms. It is taken for granted that the indicators of excessive

concentration of population and economic activities in the Capital Region constitute clear evidence of the damage being done to other regions of Korea and hence to the national economy. In this regard, a recent study by Henderson (2000) about the effects of urban concentration and primacy on economic growth provides an interesting reference. According to this empirical work based on cross sectional country level data, a negative correlation exists between real GDP growth rate and primacy.

In order to see if such a relationship holds in Korea, we performed a simple Granger causality test between real GDP growth rate and measures of primacy using the 1971-99 annual time-series data. The two measures of primacy used were the share of Seoul and the Capital Region in the nation's total population. Up to four years were allowed for the lagged response of one variable to the other. The test results are summarized in Table 4. An "o"(+/-) at the intersection of a row and a column indicates that the variable in the respective column affects the variable in the respective row at a 5% level of statistical significance (positively/negatively). One can see from Table 3 that the only statistically significant causality runs from the population shares of Seoul and the Capital Region of the previous year to those of the current year. On the other hand, no statistical evidence was found to indicate that primacy impairs economic growth or vice versa[2].

<<<< Table 4 here >>>>

Evaluation of spatial policies towards the Capital Region

We have stated that the main goal of spatial policies targeted at the Capital Region has been discouraging the location of population, jobs and physical developments in the Capital Region while promoting the dispersal of jobs to other parts of the country. The fundamental flaw of the policy goal is that the real problem is not so much large population size as specific problems such as pollution and congestion, and that spatial policies aimed at the policy goal created new problems such as high housing costs. But let us set aside this issue for a moment and first investigate whether the policy goal was achieved and the outcome was beneficial to the rest of the country. For this purpose, we will analyze the effects of changes in spatial policies on the growth of population and the supply of large office buildings in the Capital Region. We will then address the question of whether displacing jobs in the Capital Region was helpful in creating jobs in other regions.

Overall effects of spatial policies

The first scientific endeavor to investigate the overall effectiveness of spatial policies to contain the growth of the Capital Region was made by Son (1993). He showed that the path of

population growth in Seoul and the Capital Region predominantly followed time trends and was essentially unaffected by government policy. He found that up to 99% of the total variation in population growth rate and population share of Seoul or the Capital Region was accounted for by the time trend variable and its square term. When dummy variables were added to the two explanatory variables to capture the impact of changes in growth control policies, they either carried the "wrong" sign or were statistically insignificant. These findings suggest that spatial policies did not have a substantial impact on population growth.

Effects of green belts

The assessment of the effectiveness of green belts is more controversial. Some planners argue that they have contributed to containing the growth of Seoul and other large cities while protecting the environment (Choe and Kim 1999). On the other hand, although green belts might have driven some people out of Seoul, it appears that most of them moved beyond the outer edge of Seoul' s green belt but still settled within the Seoul Capital Region. In other words, green belts probably steered development away from Seoul and into the satellite cities around it, but failed to contain the growth of the Seoul Capital Region as a whole. The leap-frogging development caused by green belts has led to increases in infrastructure costs due to extending roadways and railways. It also resulted in increasing the number of commuters as well as lengthening the average commuting distance, thereby exacerbating traffic congestion and air pollution (Kim K 1994). Furthermore, environmentally more valuable green space outside green belts gave way to development to preserve less valuable land inside green belts to maintain the belt shape.

But the most serious side effect of preserving green belts was realized in high prices of urban land and housing. By prohibiting the conversion of non-urban land inside green belts into urban use, the government created an artificial scarcity of developable land, thereby raising the price of land. The quantity of housing supplied depends upon the supply of developable land. Since the green belts have made the housing supply very inelastic, housing prices soared in response to the increasing demand for housing (Kim K 1993b, Son and Kim K 1998).

Effects of the new towns project

A twist to spatial policies towards the Capital Region was made in the late 1980s. In response to towering housing prices caused by inadequate supply compared with strong demand, the government decided to increase housing stock on a massive scale. Five new towns were built outside the outer edge of the Seoul' s green belts to accommodate a planned population of about 1.2 million. This move has been criticized for having encouraged in-migration from the rest of the country to the Capital Region.

In order to see if the new towns project contributed to population growth in the Capital Region, we estimated regression equations of the size, growth rate, and share of population in Seoul, Kyunggi Province, and the Capital Region. Explanatory variables included were the time trend, its square term, and DUM1, a dummy variable that equals 1 for the period during which the new towns were constructed and 0 for all other years. The estimation results summarized in Table 5 suggest that the coefficient of DUM1 was not statistically significant at the 10% level in any of the three sets of equations estimated for the Seoul Capital Region. On the other hand, the dummy variable exhibited a significant positive sign for population growth in Kyunggi Province. This implies that the construction of the five new towns induced population growth in Kyunggi Province but not in the Seoul Capital Region as a whole since many of the residents of the new towns moved from Seoul and other parts of the Seoul Capital Region[3].

<<<<Table 5 here>>>>

Effects on the supply of office space

The government has also controlled the construction of large office buildings in Seoul. But Kim and Son (2000) found that the construction of large office buildings in Seoul was driven primarily by non-economic factors unlike that of smaller buildings. This is because typical large buildings were built by big companies for their own use and to show off their status rather than by profit-maximizing professional developers. In light of such practices, spatial policies would not have had a significant impact on the supply of new office buildings. This conjecture is verified by the regression results reported in Table 6. Three dummy variables were used in the regression analysis to capture the effects of changes in spatial policies towards the Capital Region. DUM2 represents the impact of the adoption of a less strict approach to regulation in the Capital Region made in 1995. DUM3 is meant to capture the effects of special charges on population-inducing developments including office buildings imposed since 1995. Finally DUM 4 represents the impact of restriction on permits for large office buildings implemented since 1985. None of the coefficients of the three dummy variables were statistically significant [4].

<<<<Table 6 here >>>>

Effects on the dispersal of jobs and job creation elsewhere

Finally, we turn to the effects of policies aimed at dispersing manufacturing employment from the Capital Region. A few observations can be made in this regard. First, some jobs might have decentralized out of Seoul and into Kyunggi Province but still within the Seoul Capital Region. The main reason is that the proximity to a high-quality workforce and product markets was the

most important factor in firms' location decisions. Second, and somewhat ironically, the regulations on manufacturing establishments in the Seoul Capital Region resulted in spawning smaller premises without building permits. This has not only countered what small effects the spatial policies might have had but also aggravated pollution problems since the small firms were less sensitive to environmental issues and could not afford to take measures to control pollution.

But the most important point is that control over the location of jobs in the Seoul Capital Region failed to create employment opportunities in the rest of the country. Table 7, reproduced from Son (2001), presents the result of a Granger test of causality between manufacturing employment in the Seoul Capital Region and those of three other regions of the country: central, southwest, and southeast. Figures in the table clearly show that an increase in manufacturing employment in the Capital Region has had no negative impact on the growth of employment in any of the other three regions. Moreover, an increase in employment in the Capital Region was found to have a positive effect on employment in the Southeast with a one-year lag.

<<<Table 7 here>>>

This lack of correlation between job growth in the Seoul Capital Region and elsewhere is consistent with the major finding from a recent survey of firms that were operating in the Seoul Capital Region and therefore subjected to the quota on new construction of industrial premises and expansion of existing premises. At the time when their plan to build new plants or expand the existing plants was frustrated by the regulation, 81% of the affected firms considered postponing their plan to expand, and 17% considered reducing or closing down their businesses, or moving abroad. Only 2% said they considered moving to any of the other regions within Korea. Only 22% of the firms indicated an interest in relocating elsewhere even with government assistance. The survey result shows that the primary impact of the quota system is limited to delaying the timing of the construction of manufacturing premises.

Public opinion on spatial controls and land use regulations

The overall consensus is that the growth of the Seoul Capital Region needs to be controlled but that policies in the past were not effective enough. Recently, the Korean Economic Association commissioned a survey with a sample consisting of professors of economics, business management, architecture and urban planning; researchers; journalists and businessmen. Most people surveyed (75%) answered that spatial policies toward the Seoul Capital Region failed to disperse population. As for the main reasons for the policy failure, the most popular answers

were that policies were not effective (40%), and poorly designed (23%) and 20% of the respondents said that the problem could not be solved with policies. The three most important factors identified as causing concentration in the Seoul Capital Region were the availability of jobs, good universities, and government offices. Respondents were almost unanimous (84%) in singling out traffic congestion as the most serious problem in the Capital Region. The distant second was inefficient use of land, followed by housing problems for low-income households. Opinions about the need to relax control were almost evenly split. On the issue of potential conflicts between the growth of the Seoul Capital Region and the growth of other regions, about two thirds of the experts surveyed felt that the growth of the Seoul Capital Region is detrimental to all other regions.

An interesting finding is that opinion varied substantially according to the background of experts. For example, journalists revealed the strongest sentiment that dispersal policies failed and that prosperity in the Seoul Capital Region is at odds with that in the rest of the country. They registered the most vehement opposition to relaxing spatial policies towards the Seoul Capital Region. On the other hand, business people working for construction companies believed that growth of the Capital Region is beneficial to other regional economies and were most vocal in demanding policy reform.

Finally, some of the questions discussed above were asked to a separate sample drawn from the general public. One of the most important findings was the contrasting view about the compatibility of economic growth of the Seoul Capital Region and that of the other regions. Although slightly more than half of the residents of the Seoul Capital Region agree on the compatibility view, those living elsewhere disagreed by a margin of two-to-one.

The environmental dimension of land use regulation is playing an important role in shaping public opinion on spatial policies. Mushrooming suburban development without proper planning and adequate infrastructure in the late 1990s raised the level of public awareness of environmental sustainability. This sentiment provided a new platform for the planning profession and environmental NGOs (non governmental organizations) similar to the experience in the U.K. (Evans 1996). A survey conducted by the Coalition for Land Studies in 2000 (Cho 2000) reveals that unplanned and environmentally unsustainable land development is perceived as the most serious land problem followed by speculative land use, extremely high land prices, and concentration of land ownership among a relatively small number of people. According to the same survey, respondents are worried about the increase in unplanned land development in the urban fringe as well as too hasty relaxation of land use regulations. The survey also shows that the vast majority of people expect that both urban land shortages and environmental deterioration will become more serious in the future and that they endorse more intensive redevelopment of built-up areas and a minimization of urban land requirements through urban

containment.

The way forward

The main conclusion of the analysis presented above is that spatial policies aimed at discouraging the location of people and jobs in the Seoul Capital Region have not only proved ineffective but have also generated negative side effects[5]. This raises the question of why such policies have persisted so long. An answer could be drawn from political economy. There has been strong demand for controlling the growth of Seoul and the Seoul Capital Region both from the political circle and within the government. Specific policy instruments enjoyed popularity in their own right. For example, until very recently, green belts were promoted as the "life belt" or the "oxygen tank" of the city. It took thirty years before a fundamental change was made[6]. The quota system on manufacturing plants has been maintained because of the strong support by all the other regions and the politicians that have interests in those regions. Recently, proposal to abolish the quota system and to introduce instead a charge system on expanding such facilities was rejected by the National Assembly. At the time of this writing, a new draft legislation entitled the special law on balanced regional development is being submitted to the National Assembly. Within all this debate, it is interesting to note the lack of an operational definition of balanced regional development for policy purposes.

The fact that spatial control policies are maintained by political considerations makes it as difficult to change them in the future as it has been in the past. Nevertheless, it should be useful for the nation as a whole to ask why it needs such policies and what it would take to restructure the policies to benefit the entire nation. The fundamental question is whether controlling the growth of the Seoul Capital Region can be a policy goal in itself. In my view, spatial policies must ultimately aim at raising the quality of life. It is essential to ensure all citizens a certain level of quality of life regardless of location. In other words, policies should be people-centered rather than place-oriented. In this sense, tight control on land supply in the Seoul Capital Region cannot be justified because it raises the cost of housing and also limits housing options for its residents. If taken to a limit, opposition to increasing the supply of housing in the Seoul Capital Region to control its further growth is equivalent to making the Region too difficult and costly to live in so as to force some people to move out. If the resources required to improve the living standards of the Seoul Capital Region can be mobilized within the Region, there is no reason to object to investments in the Region[7].

We earlier mentioned the common view that environmental pollution and traffic congestion are aggravated by population growth. Again, the problem is specific negative externalities, rather than population size. Even if population growth stabilizes in the Seoul Capital Region, as it will in the near future, these externalities will not disappear automatically.

The best way to address these problems is to tackle the problems directly through economic incentives and disincentives as well as regulations as appropriate (Mills and Kim 1998). Trying to control the growth of population itself is like barking up the wrong tree.

To be more specific, the fuel tax should be levied at a level that approximates the amount of external costs due to congestion, pollution, noise, traffic accidents, and damages to roads. A careful study by Kim J (2000) suggests that the external costs range from 600 to 1,600 won per liter of gasoline. The current level of fuel tax is 748 won per liter on gasoline and those on diesel and LPG are 184 won and 40 won per liter, respectively. Therefore, the fuel tax on diesel and LPG should be raised, and government plans to do so in stages[8].

A real political challenge is how to convince the public that controlling the growth of the Seoul Capital Region is not necessarily harmful to other regions of the country. Although interregional disparities are considered a serious problem in Korea, international comparisons of the ratio between per capita income of the richest and the poorest regions shows that, relatively, Korea is not doing that badly. It can also be argued that a prosperous national economy is the most fundamental cure for interregional disparities. Moreover, there is a limit to which interregional disparities can be narrowed just as the unemployment rate cannot be pushed below its natural rate (Mills and Kim K 1998).

The future of a region within a country is related to the performance of the national economy, which in turn is determined by competitiveness of business firms and the labor force. As the national economy needs to facilitate its transformation into a knowledge-based one, it is important for the government to provide a regulatory environment in which individuals and business firms can stay flexible and agile enough to adapt themselves to the changing economic environment. In this context, the current blanket control of industrial location in the Capital Region should be reconsidered. For example, Seoul and its vicinity have been the home of new IT ventures since the 1997 economic crisis. This was natural because the region offers an ideal mix of ingredients such as proximity to high quality professionals with varied expertise, excellent universities, opportunities for intellectually stimulating interaction, and a similarly dynamic living environment. But the current strict regulations make it difficult for these firms to expand beyond the incubating stage, because they are not allowed to build or expand factories, research facilities, or staff housing nearby.

Finally, in practical terms, the traditional approach to controlling the location of manufacturing firms will become less effective as the share of the manufacturing sector declines. In the case of the Capital Region, manufacturing employment fell 7% over the past five years whereas population increased 21%. More importantly, corporations in this globalizing world are so agile that they choose where to do business and their options include locations around the world. This power of so-called "footloose" industry dwarfs the effectiveness of government

efforts to steer them from one region to another within national borders. The scope of traditional regional policies is further limited if evolutionary notions are considered (Lambooy and Boschma 2001). On the other hand, decentralization of government offices would reduce incentives to businesses to locate in the Seoul Capital Region.

In closing, it is worth emphasizing the need to address the two distinct sets of issues separately using appropriate policy instruments. The first concerns the efficient management of resources within the Seoul Capital Region. The right policy is to address externalities by adequate pricing, regulation, and planning[9]. The second involves regional and national economic development. The appropriate approach is to allow the Seoul Capital Region to lead the national economic growth, and to promote the development of other regions at the same time by upgrading the soft infrastructures such as education and to assist the regions' efforts to innovate. Limiting the growth of population and jobs in the Seoul Capital Region is to address an inter- urban issue at the intra-metropolitan level.

On a positive note, one good aspect of urbanization is that it generates material and human resources that can be tapped to deal with the problems that may emerge in the process. We need to focus our attention on finding the best ways to improve the quality of life of urban residents using adequate resources and through good policies, rather than with seemingly ineffective and sometimes counterproductive attempts to slow the process of urbanization.

End notes:

1) The estimate is based on a set of assumptions including that the travel speed on congestion-free roads is 27 km/hour and that congestion continues for 12 and a half hours a day. Therefore, Kim J (2000: 36) argues that the cost of congestion of Kim D et al is grossly overestimated

2) The conclusion should be qualified by noting the possibility of model specification errors suggested by the poor explanatory power of the real GDP growth equation.

3) Note that the coefficient of DUM is negative, though statistically insignificant, in the population growth equation estimated for Seoul. A survey of residents of the new towns revealed that only 4.8% came from the rest of the country, whereas 53% moved from Seoul, and 38.6% from Kyunggi Province and Inchon, all located within the Capital Region.

4) DUM1 represents the period during which construction activity accelerated temporarily in order to avoid the burden of the announced new tax on vacant land holding.

5) The side effects include expensive housing and longer commuting as explained above. In addition Lee BS (2000) found that the green belts have had a negative impact on the productivity of manufacturing firms located in the Capital Region. Incidentally, Evans (1996) has speculated that industrial revolution would not have taken place as it did in England had the Great London Fire not led to the removal of the first green belts.

6) Government lifted green belts around provincial cities altogether and allowed some parts of land from green belts around Seoul and the 6 largest cities to be relaxed. The process of selecting sites to be rezoned is ongoing at the time of writing this paper.

7) For example, in the development of the largest new town (Bundang) south to Seoul, 100% of the costs of onsite infrastructures (access roads, water and sewage etc), 77 % of those of extending the fixed rail system, and 67% of those of constructing and expanding highways were financed with the revenue of the project.

8) Pricing of other public services need to be rationalized. For example, optimum fares on the fixed rail system should cover operating cost, but currently the two operators of the Seoul's subways put up an operating loss of 440 billion won in 2000 alone.

9) Seoul, Inchon and 15 smaller cities in the Seoul Capital Region have been designated as special areas for ambient pollution control. The respective local governments prepared action plans to reduce air pollutants in addition to the nationwide regulations.

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<Table 1> City size distribution: 1960-2000

Year	Sample	ln A	α	R^2
1960	27	12.0908	0.8267	0.9732
		(38.2135)	(30.7645)	
1966	34	12.3629	0.8310	0.9700
		(41.3220)	(32.7334)	
1970	31	12.2794	0.8087	0.9683
		(38.0133)	(30.3230)	
1975	37	11.7934	0.7565	0.9712
		(45.0076)	(34.9110)	
1980	42	12.3756	0.7848	0.9689
		(46.1180)	(35.8100)	
1985	51	12.5543	0.7860	0.9891
		(88.2501)	(67.5252)	
1990	73	13.0506	0.8110	0.9957
		(174.4593)	(130.4725)	
1995	73	14.5414	0.9040	0.9879
		(99.5351)	(76.9720)	
2000	79	15.1752	0.9434	0.9836
		(88.1851)	(68.5771)	

Note: 1) Figures in parentheses are t-values.

<Table 2 > Population growth in the Capital Region: 1960-2000

('000,%)

	1960	1966	1970	1975	1980	1985	1990	1995	2000
Population									
Korea	24,989	29,160	31,466	34,707	37,436	40,448	43,411	44,606	46125
Capital Region	5,194	6,896	8,730	10,929	13,298	15,827	18,600	20,142	21,346
Seoul	2,445	3,793	5,433	6,890	8,364	9,646	10,628	10,229	9,891
Inchon-Kyunngi	2,749	3,102	3,297	4,039	4,934	6,181	7,972	9,913	11,455
Population growth									
Capital Region	-	4.8	6.1	4.6	4.0	3.5	3.3	1.6	1.2
Seoul	-	9.4	4.9	4.0	2.9	2.9	2.0	-0.8	-0.7
Inchon-Kyunngi	-	1.5	4.1	4.1	4.6	4.6	5.2	4.5	2.9
Population share									
Seoul	9.8	13.0	17.3	19.9	22.3	23.8	24.5	22.9	21.4
Capital Region	20.8	23.6	27.7	31.5	35.5	39.1	42.8	45.2	46.3

Note: Growth rates are annual average over the five-year period.
Source: National Statistics Office

<Table 3 > Population size and manufacturing productivity

Dependent variable		Explanatory variables			Adj. R^2	D-W
		P	K/L	dummy		
Model 1	Output	.1786*	.7263*		.804	1.530
	Value added	.1286*	.6352*		.798	1.825
Model 2	Output	.1604*	.7362*	.0579	.803	1.512
	Value added	.0932*	.6545*	.1129+	.805	1.860

Note 1) * and ^ represent statistical significance at 5% and 10% levels, respectively .
2) D-W stands for Durbin-Watson statistic.

<Table 4 > Causality between economic growth and spatial concentration

Dependent variable 변 수		Independent variables								Adj. R^2	*D-W*
		X_{t-1}	X_{t-2}	X_{t-3}	X_{t-4}	Y_{t-1}	Y_{t-2}	Y_{t-3}	Y_{t-4}		
Y: GDP growth rate	*Y*									-.150	1.758
X: Population share of Seoul	*X*	(+)								.975	1.759
Y: GDP growth rate	*Y*									.019	1.786
X: Population share of NCR	*X*	(+)								.998	1.867

Note: 1) Y = increases in workers by month
2) +/- in parentheses represent the sign of statistically significant causality relation
3) : significant at 5% level, : significant at 10% level
4) D-W stands for Durbin-Watson statistic.

<Table 5> Impact of the new towns project on population of the Capital Region

	Dependent variable	Constant	T	T2	DUM	R^2	D-W
Seoul	Population ('000)	4866.1* (24.30)	429.86* (15.02)	-8.139* (-9.25)	54.29 (0.65)	.955	0.94
	Population growth rate	.0885* (7.35)	-.0058* (-3.25)	.00001^ (1.74)	-.0124 (-1.16)	.672	1.30
	Population share	.1553* (35.5)	.0080* (12.8)	-.0002* (-10.2)	.0008 (.432)	.896	1.06
Kyunggi Province	Population ('000)	2645.7* (37.23)	50.519* (4.79)	5.462* (16.65)	68.51 (1.34)	.996	1.17
	Population growth rate	.0308* (4.16)	.0020^ (1.78)	-.0001^ (-1.98)	.0193* (2.77)	.311	1.96
	Population share	.0805* (46.9)	.0006* (2.55)	.0001* (12.8)	.0019 (1.58)	.993	1.16
NCR	Population ('000)	8013.5* (38.90)	526.30* (17.51)	-1.908^ (-2.06)	173.1 (1.70)	.992	1.10
	Population growth rate	.0682* (8.05)	-.0030* (-2.37)	.0000 (1.04)	.0004 (.048)	.556	1.35
	Population share	.2529* (50.6)	.0096* (13.3)	-.0001* (-3.83)	.0034 (1.49)	.979	1.15

Note : 1) DUM= 1 for the period in which five new towns were constructed; =0 otherwise

T = time trend, T2= time trend squared

2) * and ^ represent statistical significance at 5% and 10% levels, respectively

3) Figures in the parentheses are t-values.

4) D-W stands for Durbin-Watson statistic.

<Table 6> Spatial policies & supply of large office buildings in Seoul: 1981-98

Dependent variable = CO

Variables	Explanation	Model 1	Model 2	Model 3	Model 4
C	Constant	158530.7 (1.250)	16929.7 (1.097)	-1373556^ (-1.795)	-1532252 (-1.785)
CO(-1)	Supply of large office buildings	.3923^ (1.771)	.3844 (1.630)		
R(-6)	Real rents per office space			14299* (2.369)	15099* (2.336)
DE(-6)	Changes in office workers	2.138 (1.240)	1.913 (.774)	2.511 (.633)	3.509 (.762)
DM(-6)	Changes in money supply			40.382 (1.072)	51.500 (1.134)
DUM1	1991 2 =1: introduction of a new tax on vacant land	485962* (2.251)	493098* (2.153)	652345* (2.871)	635121* (2.673)
DUM2	1985 94 =1: First NCR Management Plan		169709 (.8365)		220895 (1.054)
DUM3	1995 98 =1: Charge on population-inducing development		203558 (.5990)		34684 (.0745)
DUM4	1985 98 =1, Control on new office construction	167793 (.854)		233348 (1.160)	
Adj. R^2		.559	.532	.467	.430
D-W		1.831	1.810	1.318	1.383

Note: 1) CO= Increases in total office space of buildings with 11 floors or more

2) Figures in parentheses represent the length of leg in years

3)* and ^ represent statistical significance at 5% and 10% levels, respectively

4)D-W stands for Durbin-Watson statistic.

<Table 7> Causality between manufacturing employment between the Capital Region and the three other regions

Dependent variable		Independent variables			
		X_{t-1}	X_{t-2}	Y_{t-1}	Y_{t-2}
Y: NCR X: Central	Y	(-),	(+),		
	X	(+),			
Y: NCR X: Southwest	Y				
	X				
Y: NCR X: Southeast	Y	(+),	(-),	(+),	
	X	(+),			

Source: Son (2001)

Note: 1) Y = increases in workers by month

2) +/- in parentheses represent the sign of statistically significant causality relation

3) : significant at 5% level, : significant at 10% level