

The Use of Equalization Needs: Equalization or Regional Policies?*

Junghun Kim

Korea Institute of Public Finance

September 2007

Abstract

A dominant inverse relationship between expenditure needs and population size can be found in the distribution of general grants in Korea. This is due to the economies of scale effect assumed in the calculation of expenditure needs. The assumption implies that migration from smaller local governments to larger ones should reduce the amount required for supporting expenditure needs. However, the trends of migration and general grants do not support this interpretation. It suggests that fiscal needs equalization and regional policy need to be more clearly separated in the system of intergovernmental grants so that the issues of regional policy can be more directly addressed.

JEL: H2, H7

Keywords: decentralization, equalization needs, regional policy

*This paper is prepared to present at Internatoinal Workshop on Local Expenditure Needs jointly organized by The Ministry of Interior and Health of Denmark, The Ministry of Finance of Denmark, and Korea Institute of Public Finance.

1 Introduction

The size of local governments' expenditures in Korea is greater than that of the central government. At the same time, the majority of local expenditures of many local governments, especially small ones, is financed by the central government's grants. Even for the big cities, except the capital city of Seoul and the cities in the capital region, intergovernmental grants play a very important role. The heavy financial dependence of local governments on the central government is not a new issue in Korea, but the economic implication of the fiscal structure of the local public sector seems to become more important in recent years.

The size of public sector in Korea is not large compared to other OECD countries, but the concern over the fiscal health of the public sector has become an important policy issue since the financial crisis in 1998. In response to the rapidly growing government debt and rapid aging process, which makes the long-term fiscal position of the public sector vulnerable, the central government has recently pushed for fiscal reform, emphasizing performance management and long-term fiscal planning. The local public sector, on the other hand, is not moving as fast as the central government in terms of efficiency-improvement efforts. This is caused by two factors. Firstly, the heavy fiscal reliance of local governments on the central government gives rise to adverse incentives, but such effect is not very transparent to tax-payers, compared to the government debt problems faced by the central government. Secondly, intergovernmental grants are tied to history and regional interests, and given the economic effect of intergovernmental grants not being very transparent to people, its reform is much harder to achieve.

It is therefore a very important policy issue, both from the economic and political perspectives, how to improve the system of intergovernmental grants in Korea, especially the equalization grants which plays a core role in the intergovernmental fiscal relations. Equalization grants, called Local Allocation Tax (LAT) in Korea, is distributed based on the difference between Basic Fiscal Revenue and Basic Expenditure Needs. In some countries such as Canada and Germany, expenditure needs is not taken into account in the determination of equalization grants. There seems to be a good reason for this: Shah (2006) and Boadway (2006), for example, both criticize the use of expenditure needs for the possibility of it promoting adverse incentives and inefficiencies in the local public sector. In assessing the general grants in England, McLean (2003) criticizes, though not completely ignoring the necessities of taking into account expenditure needs, the

way standard spending assessment (SSA) is calculated. In the evaluation of the general grants in Australia, Shah (2006) is very critical about the way the Australian system of calculating expenditure needs.

From this perspective, the system of equalization grants in Korea seems to be in great need of change. First of all, the component of Basic Expenditure Needs occupies more than 65 percent of the equalization grants. In other words, it requires about 35 percent of the current level of equalization grants to equalize the per capita fiscal revenue of local governments. Moreover the nature of the expenditure needs is not clearly understood since it involves 26 expenditure categories and complicated modification coefficients which are not objectively defined.

The purpose of this paper is to twofold. First, the nature of expenditure needs of equalization grants in Korea will be examined in detail, and a distinct pattern, especially the relationship with the population sizes of local governments, will be described. Secondly, a policy recommendation will be given to improve the efficiency and transparency of local public sector. Since expenditure needs in Korea is related in large part to the regional policy, separating the roles of fiscal equalization and regional policy in the system of intergovernmental grants will help the simplification of the equalization system, which in turn can contribute on reducing adverse incentives in the local public sector.

2 Overview of local public finance

2.1 Government structure

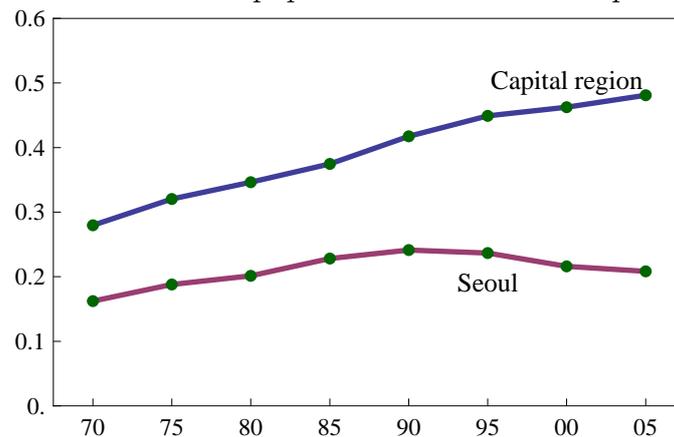
Korea is a unitary country with 16 prefectures and 234 municipalities. The process of decentralization started in 1995, and the heads of the local governments are elected by popular votes every four years. Prefectures are composed of seven major cities and nine provinces.¹ Municipalities consist of special districts within the major cities, and the cities and towns within the provinces. There are currently 77 cities and 83 towns under the nine provinces, and 25 and 44 special districts under Seoul and other six major cities.

¹Seven major cities are Busan, Daegu, Incheon, Gwangju, Daejeon, and Ulsan. Nine provinces are Gangwon, Gyeonggi, Chungbuk, Chungnam, Jeonbuk, Jeonnam, Gyeongbuk, Gyeongnam, and Jeju.

2.2 Population distribution

The population size of local governments is very diverse, with those of Seoul and Gyeonggi being around 10 million, and that of Jeju, an island province south to the mainland of Korea, 0.5 million. But the most notable aspect of population distribution in Korea is the concentration of population in the capital region. Including Incheon, the fourth largest city 30km west to Seoul, almost 48% of Korea's population live in the capital region. The trend of population concentration has been going on for the past 40 years. In the 70s, the population share of the capital region was less than 30 percent, but it increased to more than 35 percent in the 80s, and then up to 45 percent by the middle of the 90s. An interesting feature of the immigration pattern to the capital region is the significant growth of Gyeonggi, the province surrounding Seoul. As can be seen from Figure 1, the population share of Seoul peaked in the early 90s, and then the population of the capital region grew mainly with the satellite cities that started to be established in the Gyeonggi province since the middle of 1980s.

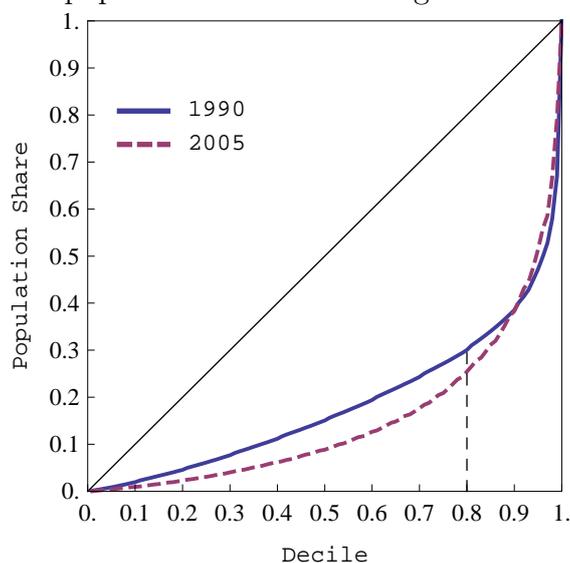
Figure 1: The trend of population share of the capital region



When we analyze the structure of local expenditure needs in Korea, it is important to recognize the rapid urbanization pattern, since it is related to the strong emphasis of regional policy in the system of intergovernmental grants. Figure 2 shows the population share of local governments by the ascending order of their population sizes. In 1990, about 30% of total population lived in 168 relatively small local governments (80% of the then total of 210 local governments). In 2005, about 25% of total population lived in 137 relatively small local governments (80% of the total of 172 local governments). Therefore, majority of population in Korea live in urban areas, and the numbers are still

growing. However, as will be discussed in later sections, the central government’s support of relatively small local governments has not been very much affected by the change of population distribution. The reason for this is not just the central government’s emphasis on the welfare of the people living in the rural areas: the central government’s major concern is not rural-urban migration per se, but the migration into the capital region. The central government has been establishing policies that try to mitigate immigration into the capital region since early 1970s, and such regional policy is still one of the most important policies in Korea, and naturally has an impact on the structure of intergovernmental grants.²

Figure 2: The population share of local governments by decile



2.3 Revenue of local governments

The revenue of local governments consists of local taxes, non-tax revenues, intergovernmental grants, and local debts. According to the 2007 budget of the local public sector, the total revenue of local governments’ general account is 86.5 trillion Won.³ On average, 56.4 percent of local governments’ revenue comes from own revenue sources, and 43.6 percent intergovernmental grants (Table 1). The degree of fiscal dependency is diverse

²The current President seized the power in 2003 with a campaign proposal of establishing new capital town about 200 km south to Seoul. The proposal led to a law and all the administrative bodies are scheduled to move to new capital town in early 2010s.

³The exchange rate of one dollar is currently 920 Won and therefore it is approximately \$94.0 billion.

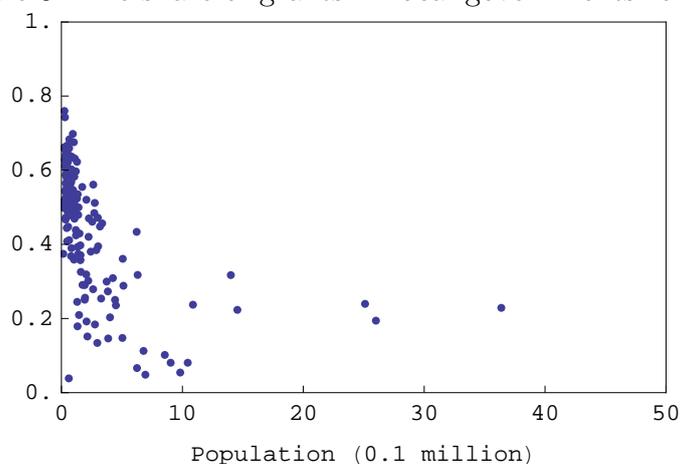
among local governments, however, and it usually becomes higher than 50% for many small local governments (Figure 3)

Table 1: The revenue of local governments (2007, billion Won, %)

Own revenue			Grants		Total
Local tax	Non-tax	Bonds	General grants	Specific grants	
38,073	10,140	6,347	21,408	16,265	86,521
(44.0)	(24.9)	(0.7)	(24.8)	(18.8)	

Source: MOGAHA

Figure 3: The share of grants in local governments revenue



2.4 Types of Intergovernmental grants

The equalization grants are administered by two departments of the central government. Ministry of Government Administration and Home Affairs (MOGAHA) distributes the equalization grants for local public services except education (Local Allocation Tax, LAT), and Ministry of Education for local education services (Local Education Allocation Tax, LEAT).⁴ The sizes of equalization grants are set by laws, and it is 19.24 percent of Domestic Tax Revenue for local public services, and 19.4 percent for education services. Domestic Tax Revenue is one of the categories in Korean tax system, and it is defined as the national tax revenue minus earmarked taxes such as gasoline tax, Education Tax,

⁴Education services are not provided by local governments, but by education offices established and directly controlled by the central government.

liquor tax, etc. Its share in the national tax revenue fluctuates depending on the changes in the tax system, but is currently about 80 percent. Therefore about 32 percent of national tax revenue is distributed to the local public sector in the form of equalization grants.

The specific grants went through major changes in 2004. Until 2004, they were divided into project grants administered by line ministries and a regional policy grants (Local Transfer Fund) administered by MOGAHA. The article 1 of Local Transfer Fund Act, which was introduced in 1990, stipulated that the purpose of Local Transfer Fund was for balanced regional development, and it had been distributed to local governments for five spending targets with majority of it spent on local roads. It was terminated in 2004, however, and was absorbed into LAT. At the same time, a different type of regional policy grants called Balanced Development Special Account (BDSA) was created in 2005 by consolidating 123 projects previously supported by specific project grants. The purpose of the consolidation was twofold: simplifying fund allocation process and increasing the local governments' capacity for regional planning. The fund allocation of BDSA is based on a simple regression equation which closely mimics the distribution across local governments of the total amount of the specific grants distributed for the 123 projects consolidated into BDSA. The purpose of the change was to make the regional policy grants more effective, but it is subject to constant controversies since BDSA is not much different from the previous system of program grants: its distribution pattern is not much different from that of the previous project grants, and the intended objective of local governments' capacity building for regional planning has not been materialized.

3 Structure of equalization Grants

3.1 Formula of LAT

The calculation of LAT involves three steps. Firstly, the total amount is set at a fixed percentage of Domestic Tax Revenue, which is currently set at 19.24 percent.⁵ Secondly, the fiscal gap is calculated based upon the difference between the Basic Fiscal Revenue (BFR) and the Basic Expenditure Needs (BEN). Thirdly, since the sum of the differ-

⁵The ratio has increased three times since 2000. In 2001, the ratio increased from 13.27 percent to 15 percent. It rose to 19.12 percent in 2005, and then to 19.24 percent in 2006.

ences between BFR and BEN is usually greater than the predetermined size of LAT, the difference is scaled down by multiplying an adjustment factor, which is the ratio of the sum of the differences to the predetermined total amount of LAT.⁶

Basic Fiscal Revenue

The calculation of BFR is relatively straightforward and is set at 80 percent of local tax revenue. Loosely speaking, the calculation of BFR is based upon the concept of Representative Tax System since the article 8 of Local Allocation Tax Act stipulates that “standard local tax rates” are applied to calculate the BFR. “Standard local tax rate” refers to the local tax rate stipulated in Local Tax Act, which is passed in the parliament.

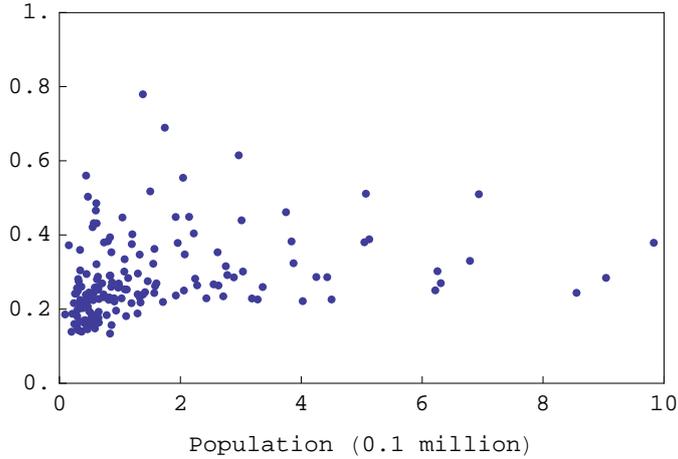
One distinct aspect of local public finance in Korea is the fact that local tax rates are almost uniform across the country, and many times the parliament is blamed for it since it sets the standard local tax rates. However, it should be noted that Local Tax Act allows local governments to change, by their own by-laws, the local tax rates within a certain boundaries. Despite the taxing powers thus granted to local governments, albeit within a certain ranges, almost no local governments exercise the taxing power. Therefore, the calculation of BFR is easily done since it is very close to the actual local tax revenue raised.⁷

Since local tax rates are almost uniform across local governments, the variance of the per capita local tax revenue is mainly influenced by the differences in local tax bases, which is in turn correlated with business activities and income levels of local governments. Unlike some other countries, no local government in Korea enjoys particularly rich resource endowments. Therefore the size of population is the main indicator that reflects the prosperities of a local government. In Figure 4, the relationship between per capita local tax revenue and the population size is shown. A simple regression between the two variables indicates that the relationship of the two variables is significant with the t-value of the population variable being 9.3. However the value of R-squared is around

⁶Equalization grants for educational services are not received by local governments, and its distribution is almost per capita basis. So we focus our discussion to the equalization grants administered by MOGAHA.

⁷Although not the main topic of the paper, the reason why local governments do not exercise taxing power is an important subject that needs to be explored. In principle, one can hypothesize that they are related both to the adverse incentives caused by the system of intergovernmental grants and yardstick competitions.

Figure 4: Per capita local tax revenue (Million Won)



0.3, implying that the relationship is not very tight. One of the reasons for this is the fact that income-elastic tax bases are not assigned to local tax bases.⁸ The overall result is that the per capita LAT is a weakly decreasing function of the population size.

Basic Expenditure Needs

The calculation of BEN involves 26 expenditure categories. For each expenditure category, three components are used for calculating the BEN: workloads (Z) such as the number of population and local officials, unit cost (p), and modification factor (θ). Thus BEN for expenditure category i for local government j can be expressed as the following, where superscript denotes local government and subscript expenditure category.

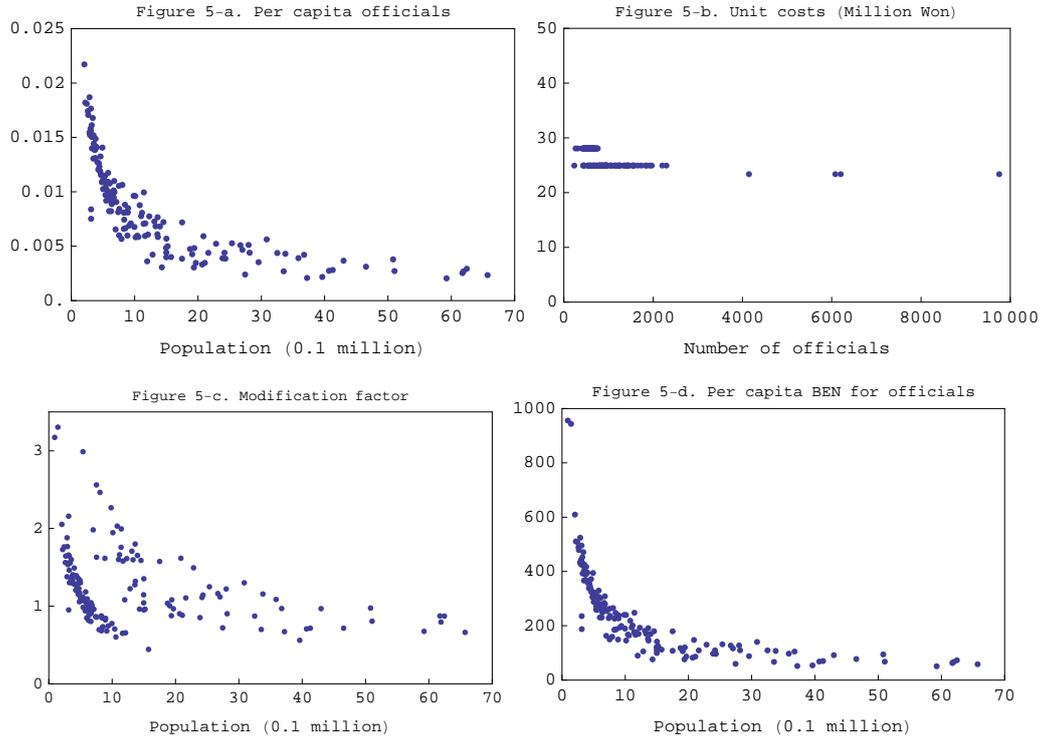
$$BEN_i^j = Z_i^j \times p_i^j \times \theta_i^j$$

A pronounced feature of local expenditure needs in Korea is the emphasis on the economies of scale in its calculation. In Figure 5, the distributions of the three components of the BEN of local administration, which is the biggest expenditure category, are illustrated as a function of the population size: Figure 5-a shows the distribution of the per capita “standard” number of local officials,⁹ Figure 5-b the unit costs that are set at two dif-

⁸It will be interesting to directly see the relationship between per capita local tax revenue and the level of local residents’ average income. The latter is very important statistical information, but local income data both at local and regional level is not assessed by the government.

⁹“Standard” number of local officials is set by the central government to avoid the moral hazard problem associated with local governments incentive to increase the number of local officials. Still the fact that equalization grants increase with the size of local officials is the legacy of the long era of centralization in Korea.

Figure 5: Distributions of the components of BEN

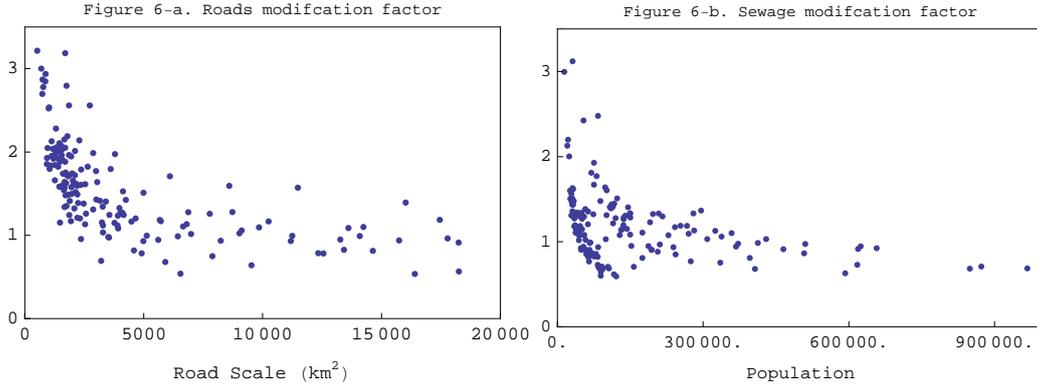


ferent levels, and Figure 5-c the modification factors. As is evident from these figures, a very strong assumption of economies of scale is adopted in the calculation of BEN, and the final result is a strong inverse relationship between per capita BEN for administration cost and the population size (Figure 5-d).

The assumption of economies of scale is not only evident in the case of administration cost, but in all the 26 expenditure categories. Figure 6, for example, illustrates the modification factors of road maintenance and sewage cost, and their distributions show a pattern very similar to that of the administration cost.

It needs to be emphasized that economies of scale is *assumed* in the calculation of BEN. LAT has been in operation for the past 30 years, including the period of centralization. Before 1995, the year when local autonomy started, local governments expenditure patterns were completely determined by the central government. This means that local governments' independent decision-making on local expenditure was absent, and therefore the economies of scale effect determined by the production technique available in the market was not known to the central government. After 1995, the system of inter-governmental fiscal relationship has barely changed. Therefore, the modification factors

Figure 6: Modification factors of roads and sewage



presumed to reflect the economies of scale effect are more plausibly a tool for financially supporting rural areas. In other words, modification factors used for LAT are important mechanisms that transform equalization grants into regional policy grants.

3.2 Statistical characteristics

Since the impact of modification factors on the BEN is so strong, a regression of the per capita BEN on population size shows a very high degree of goodness of fit. Figure 7-a, which depicts the relationship between per capita BEN and population size in log scales, suggests that there is a cubic relationship between the per capita BEN and population size. Besides population size, the area is another important variable that affects BEN. Therefore if we run the following regressions, where X denotes population size, we get the results in Table 2.

$$y = \beta_0 + \beta_1 \log X + \beta_2 (\log X)^2 + \beta_3 (\log X)^3 + \epsilon \quad (\text{Model 1})$$

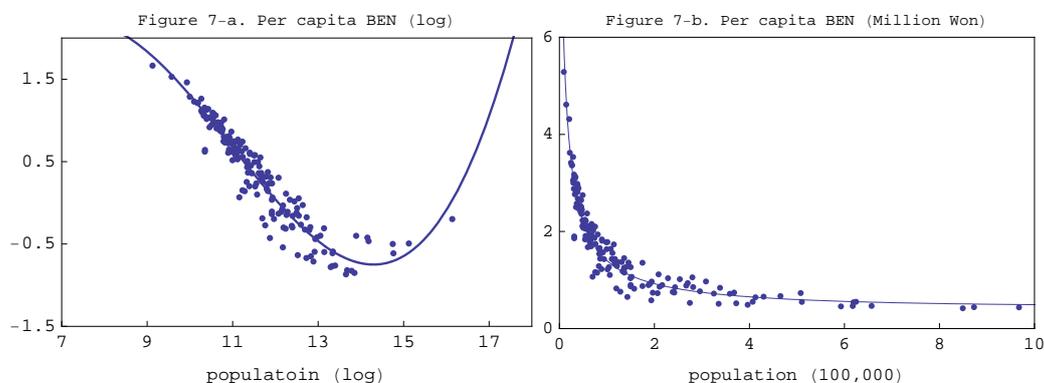
$$y = \beta_0 + \beta_1 \log X + \beta_2 (\log X)^2 + \beta_3 (\log X)^3 + \beta_4 \text{area} + \epsilon \quad (\text{Model 2})$$

All the coefficients in both the regression models are significant at one percent significance level. Also the values of R-squared are very high with it being 0.92 in model 1 and 0.97 in model 2. Thus the population variable alone explains as much as 92 percent of the variations in the per capita BEN, and the explanatory power of the regression model increases to more than 97 percent if area variable is added. Figure 7-b shows the relationship between per capita BEN and population size in raw scale along with the

Table 2: Regression of per capita BEN

	Model 1	Model 2
constant	-17.3*** (-2.66)	-1.18*** (-0.31)
population	6.25*** (3.95)	1.96*** (2.08)
population ²	-0.63*** (-4.96)	-0.28*** (-3.68)
population ³	0.19*** (5.69)	0.01*** (4.82)
area	-	0.17*** (18.3)
R^2	0.916	0.972

Figure 7: Distribution of BEN with regression fit



fitted values. It shows that the per capita BEN becomes almost a constant when the population size exceed around 500,000.

As is discussed in Dafflon(2006) and Rechovsky(2006), the economies of scale effect in the production of local public goods is an important factor in the calculation of local expenditure needs in other countries such as Switzerland and Japan. Therefore, it can not be a priori argued that it is a peculiar aspect of local expenditure needs assessment in Korea. However, what needs to be noticed in the case of Korea is the fact that the interpretation of economies of scale effects as the one that is caused by production technique is not supported by the observed data. By its nature, if the immigration from smaller to larger local governments takes place, the amount for equalizing expenditure needs should decrease to the extent that it is affected by the economies of scale effect. More specifically, suppose the cost of local public services consist of a fixed cost F and a variable cost $V(n)$, where n denotes the population size. Suppose also that there are two

local governments with local government 1 smaller than local government 2. Then, as immigration takes place from local government 1 to local government 2, $V_1(n_1)$ decreases and $V_2(n_2)$ increases. But under the assumption of economies of scale, $V(n)$ increases with the size of population in a decreasing order. Therefore immigration from a smaller local government into a larger one reduces the total cost of local expenditure needs. Another straightforward conclusion is that immigration from a smaller local government to a larger one reduces the share of local expenditure needs of a smaller local government. However, the data of LAT for the past 17 years do not support this interpretation.

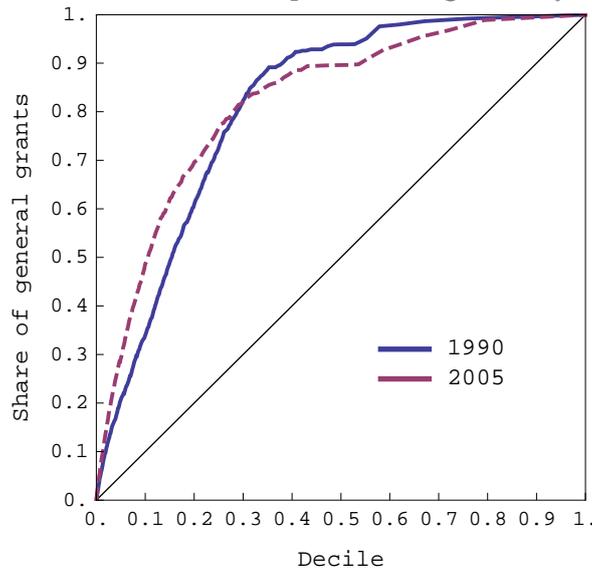
In Figure 8, the share of equalization grants given to local governments is shown by an ascending order of their population sizes. It also shows the changes in the share between 1990 and 2005. As were shown in Figure 1 and Figure 2, a sizable immigration from smaller local governments to larger ones took place during the period. However, the share of equalization grants for the smallest 10 percent and 20 percent of local governments is greater in 2005 than in 1990. Therefore, even though the population share of the small local governments has decreased for the 15 years, the share of the equalization grants they receive has somewhat increased. Viewed from another perspective, this fact becomes more obvious: most of local governments in the capital region do not receive LAT because their BFRs are greater than BENs. This means that the amount of LAT required to support local governments outside the capital region will become smaller to the extent that the immigration to the capital region takes place. As Figure 1 shows, about 8 percent of population, or almost 4 million have moved into capital region for the past 17 years. On the other hand, the size of equalization grants as a share of Domestic Tax Revenue has increased from 13.27 percent to 19.24 percent during this period. It is therefore obvious that the share of LAT for rural areas has been increased despite the significant size of out-migration.

4 Discussions

4.1 Needs equalization or regional policy?

The roles of the three types of intergovernmental grants in Korea, equalization grants (Local Allocation Tax), regional policy grants (Local Transfer Fund until 2004, and BDSA from 2005), and specific project grants, are in principle clearly separated. However, the

Figure 8: The share of equalization grants by decile



heavy reliance of equalization grants formula on population size casts a doubt on whether the purpose of equalization grants is limited to equalizing fiscal revenue and expenditure needs across local governments. If that is the case, two policy recommendations immediately follow: firstly, it is more efficient to merge small local governments into larger ones, and more importantly it is a very wasteful policy to deter migration from smaller to larger local governments. Secondly, it is hard to justify the modification factors used in the calculation of BEN, since they make the share of BEN of small local governments bigger even when their size of become smaller due to out-migration.

While these can be legitimate criticism on the current way of distributing equalization grants, several caveats raised against this view also exist. First, the sizes of local governments in Korea are relatively big, compared to many OECD countries such as Nordic countries, France, Italy and Japan. Therefore, it is questionable whether the sizes of local governments in Korea are really inefficiently small.

Second, migration from rural to urban areas can make regional allocation of labor inefficient if it is induced by fiscal externalities, as discussed in Boadway and Flatters (1982) and Boadway (2004). The case which is often discussed with regard to fiscal externalities in the Canadian context is rich resource endowments of local governments. Another possible cause of fiscal externalities is the economies of scale effect in the consumption of local public goods. Even though it is true that migrants benefit from exploiting the

economies of scale effect in the consumption of public goods, the labor productivity of the overly populated region declines if the migration is induced not by market forces but by fiscal externalities. This theoretical aspect, however, is not much discussed in literature in realistic sense since the local governments in OECD countries mostly provide local public services such as education, health, social services, police, which generally do not have the economies of scale effects in providing them.¹⁰ The situation can be different in the case of Korea, however, since the typical local public services such as education, health, police, social services, are not the responsibilities of local governments. This means that expenditure responsibilities of a big local government such as Seoul dose not proportionally increase with the size of population, while the strong business activities in the big cities make the tax revenue increase more than proportionally with the size of population. Thus the gap between the fiscal benefit and fiscal burden created by the continuous immigration to the capital region may be generating sizable amount of fiscal externalities.

If this is indeed the case, Korea can be characterized as having a very poor design of intergovernmental fiscal relations since it suffers from dual distortions: ill-designed expenditure assignment makes the capital region fiscally attractive region and then the government spends a sizable amount of money to mitigate labor and capital migration to the capital region by inefficient and perhaps ineffective regional policies.

Despite the strong criticisms that can be directed toward the distribution pattern of LAT, its change is not easily expected in reality. First of all, since its structure is related to the fiscal attractiveness of the capital region, reducing the support for rural areas need to go hand in hand with increasing the fiscal burden of the big cities, especially Seoul region, by making them more responsible for local public services. However it will be an extremely difficult task because local governments in the capital region are politically strong, and at the same time the emotional support for rural areas is also strong.

The second reason why the reform of LAT is difficult is more fundamental. The equalization grants in Korea is called “Local Allocation *Tax*.” It will be confusing to outside observers why grants are called a “tax” in Korea.¹¹ This is indeed confusing even among the Korean people who use this terminology, since Local Allocation Tax

¹⁰Thus, Boadway (2004, 2006), for example, assume away the economies of scale effect when discussing fiscally-induced migration.

¹¹The same is true in Japan, whose system Korea apparently has adopted.

is not even tax sharing, but purely revenue sharing.¹² So the reason why equalization grants in Korea is called a “tax” is symbolic and political: it carries the impression that the local governments which receive LAT have a legitimate right to it, as if it is their own tax revenue. This is indeed the interpretation given by MOGAHA, the department of the central government which administers LAT. Because of the strong institutional and political characteristics embedded in LAT, it is very hard to change its distribution pattern based on a pure cost-effectiveness argument.

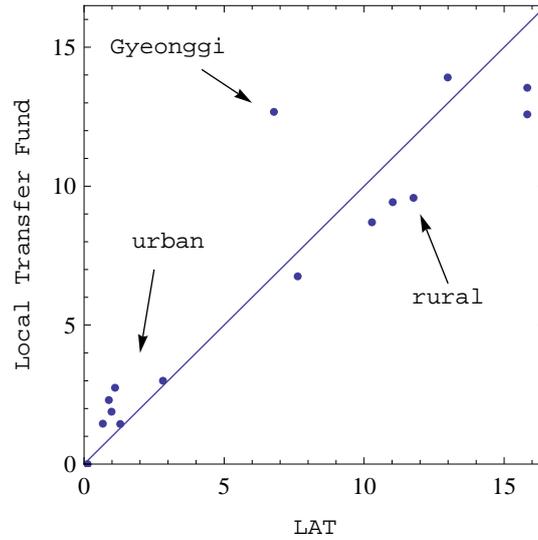
Even if we accept the argument that LAT plays a larger role than just needs equalization, however, it seems that it is still not free of criticism. Since equalization grants are distributed under the name of equalizing expenditure needs, the regional policy element in it is not clearly defined. As a matter of fact, the role of regional policy grants is supposed to be played by different intergovernmental grants such as Local Transfer Fund before 2004, and BDSA after 2005. However, if we compare the distribution patterns of LAT and Local Transfer Fund, the regional policy element in LAT is even greater than that of Local Transfer Fund since the concentration of grants to under-developed and “less populated area” is more pronounced in LAT than Local Transfer Fund. Figure 9 shows the share of the sum from 1990 to 2005 of LAT and Local Transfer Fund. Their distribution patterns are very similar to each other except the fact that Local Transfer Fund allowed more transfers to be directed to six major cities and Gyeonggi.¹³ Therefore, it was difficult to distinguish the different roles of the two types of the grants, and ultimately Local Transfer Fund was absorbed into LAT as of 2005. Actually, this recent episode of merging Local Transfer Fund into LAT makes it obvious that LAT plays the role of both needs equalization grants and regional policy grants.

The suggestion that LAT needs to be separated between needs equalization component and regional policy component is also related to the fact that the dominance of needs equalization component in fiscal equalization scheme is not a sound policy, as is argued by Shah (2006) and Boadway (2006). Especially Shah (2006) argues that needs equalization is unnecessary since calculating expenditure needs is very complicated and easily becomes discretionary. Boadway (2006) emphasizes the importance of fiscal equalization,

¹²McLure(2001) defines tax sharing as the one different levels of governments share the same tax base on an origin basis. So he regards the revenue allocation among German landers as revenue sharing rather than tax sharing.

¹³This is because the main function of Local Transfer Fund was to support local roads, of which fast-growing Gyeonggi is in greatest need.

Figure 9: The distribution of LAT and Local Transfer Fund



especially in the case of fiscal externalities, but he notes the importance of differentiating between costs equalization and needs equalization. Needs equalization can be necessary on equity ground, but it is hard to define "standard" local expenditure needs. More importantly, if costs equalization is embedded in fiscal equalization scheme, it indirectly supports inefficient provision of local public services. In the case of Korea, the fact that the strong elements of financial support for local officials in LAT continue to be in existence despite many criticisms against it demonstrates the fact that needs equalization scheme easily promotes inefficient behavior of local governments.

All the theoretical and practical discussions so far suggest that the current dominance of needs equalization in the design of equalization grants in Korea is hard to defend. At minimum, the important roles of number of local officials and modification factors seem to be in great need for change. In Borge (2006) and Berg and Ratto (2007), they discuss the case of Norwegian block grants, which had the regional policy elements as well as expenditure needs equalization in the 1980s. The regional policy elements got separated from the needs equalization scheme during the block grants reform that took place during the 1990s. Likewise, making the role of regional policy separate from needs equalization in the design of LAT might be a necessary policy reform issue in the future. If the roles of regional policy and needs equalization become separate, the allocation formula of LAT can be greatly simplified by eliminating modification factors which even experts on local public finance hardly understand.

4.2 Political economy aspect

The distribution of intergovernmental grants is ultimately a political decision-making. An important question from political economy perspective is therefore how the current pattern of intergovernmental grants in Korea is determined by voting. There are two recent studies that deal with this subject. Kwon (2005) finds that larger amounts of specific project grants are allocated to the region with narrow electoral margin. This implies that politics influence the distribution of specific grants in favor of the region which has the swing votes. On the other hand, Horiuchi and Lee (2008) finds that, when the total of intergovernmental grants, i.e., the sum of specific project grants, LAT and Local Transfer Fund, is used as a dependent variable, the incumbent targets larger amounts to the regions with very high approval rating and the ones with very low approval rating. According to Horiuchi and Lee (2008), this finding implies that the hypothesis of “blame avoidance” put forward by Balla et al. (2002) is an appropriate hypothesis that describes the inter-regional distributive politics in Korea.

Both of these studies are based upon the hypothesis that intergovernmental grants are targeted to either the regions with swing votes or the regions with strong and homogeneous political opinions. Since politics is about money, it must be true that politics influence the welfare of both individuals and regions. When a politically liberal party takes the power, redistributive policies are strengthened, and the welfare of the relatively poor is likely to increase. Likewise, when political power is linked with a certain region, the welfare of the region is likely to increase. The question is then how such mechanism operates in the distributive politics of intergovernmental grants. Kwon (2005) finds that the median region is favored, and Horiuchi and Lee (2008) finds that the regions with strong political rivalry are favored. It seem, however, that the regional distribution of intergovernmental grants in Korea shows a kind of the status quo characteristics, not much fluctuating over a long-term period. This maybe because strong political differences between regions that are often found in federal countries also exist in Korea.

If we take a look at geographical, ethnic, and linguistic differences of OECD countries, almost all countries show quite significant differences in these aspects. Therefore it is not surprising that many of OECD countries are federal.¹⁴ A distinct aspect of federal countries as opposed to unitary country is the fact that sub-national governments (states,

¹⁴United Kingdom, Italy and Spain are constitutionally uniform countries, but in many respects have federal characteristics.

landers, cantons, etc.) have strong political powers given the historical, institutional, and constitutional backgrounds. This characteristic often makes the efficiency argument based on classical economics model such as Tiebout (1956) and Oates (1972) to have weak power in explaining the actual practices of intergovernmental fiscal relations observed in the federal countries. For example, in the case of Australia, the level of the per capita financial support to such regions as Tasmania and Northern Territory is even higher than that of the financial support to the rural areas in Korea, as is well documented in McLean (2000). The controversies surrounding Barnett formula in the United Kingdom, especially the fact that the level of per capita financial supports to Scotland and Northern Ireland are much higher than that of England, is even more interesting since it clearly shows that grants to regions are more influenced by history and politics than economics. Similar stories can be told for many other OECD countries such as Germany, Italy, Spain, Belgium, etc.

If the sub-national political units are united under the premise that interregional flows of financial supports can be necessary to sustain the unity in the politically divided nations, changing the intergovernmental fiscal relations requires the political consensus of sub-national units, which by definition will be more influenced by political rather than economic arguments.¹⁵ Also, since sub-national governments of federal countries is more heterogeneous than unitary countries, political arguments will be more pronounced for federal countries than for unitary countries. For the case of United Kingdom, for example, the standard spending assessment (SSA) of England involves the regression technique which takes into account many economic variables. Although the calculation of SSA is not free from criticisms and controversies, there seems to be open and transparent discussions among local governments in England about the way to improve it. On the other hand, the Barnett formula for the four sub-national territories is much more politically controversial and resorts to relatively simple method, not very sophisticatedly related to economic arguments. Also, despite the original intention of reducing the differences in the levels of the per capita spending of the four sub-national territories, it has not been changed much since the introduction of the formula in the 1970s.¹⁶ Therefore what seems to characterize the design of intergovernmental fiscal relations in the federal countries is

¹⁵The role of equalization grants for national unity is discussed in Bird and Ebel (2006).

¹⁶According to McLean and McMillan (2003), “The Barnett formula, which allocates money to the devolved territories, has been attacked from all sides, its consequences described as ‘terribly unfair’ by its progenitor, Lord Barnett.”

that of inertia and the status quo, since its change requires political consensus of heterogeneous sub-national units, which will inevitably introduce heated debates on historical, constitutional, and ethnic issues.¹⁷

How about Korea? If Korea is a “dynamic” unitary country with little political differences across regions, the central government should be able to manage the intergovernmental fiscal relations more flexibly and efficiently compared to other federal countries. But that does not seem to be the case. As far as regional political differences are concerned, Korea seems to be as much divided as any other countries. In Table 3, the regional differences in the approval ratings in each region of presidents and parliamentary members are shown. From this table, it can be clearly seen that the two regions in Korea, Gyeongsang and Jeolla, have extremely divided political positions toward presidents and parliamentary members.

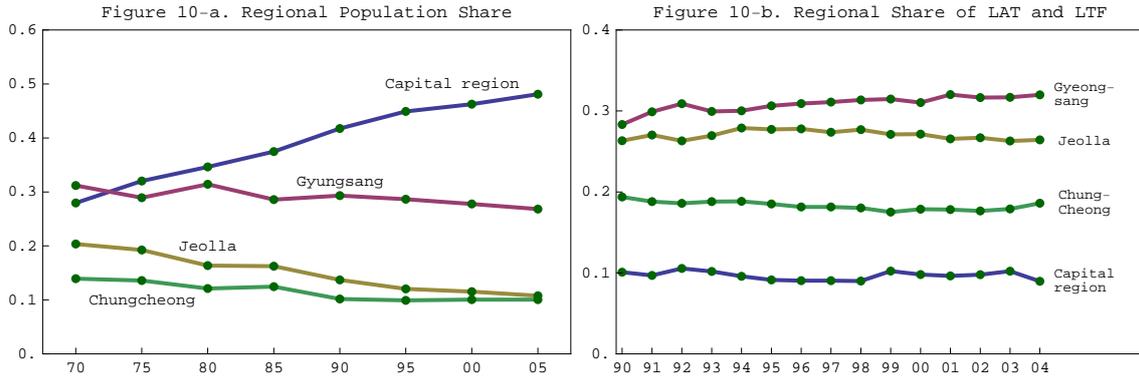
Table 3: Regional differences in the support of politicians (%)

year	Political parties & presidents	Capital region	Gyeong- sang	Jeolla	Chung- Cheong	Others
2004	1st party	69.7	5.9	80.7	79.2	45.5
2002	No, Muhyun	50.9	25.8	93.2	52.5	45.3
2000	1st party	57.7	0	86.2	33.3	58.3
1997	Kim, Daejung	42	13.5	94.4	43.9	27.9
1996	1st party	56.5	67.1	2.7	10.7	75
1992	Kim, Yongsam	36.5	68.8	4.3	36.9	41.1
1992	1st party	47.6	76.8	4.9	50	47.1
1988	No, Taewoo	34.4	49.7	9.9	33.1	57.3
1988	1st party	41.6	57.6	0	33.3	47.1

On the other hand, the share of the sum of LAT and Local Transfer Fund, which are systematically distributed based on formula unlike specific project grants, seems to have a quite stable pattern. What is interesting is the shares of Jeolla and Chungcheong, whose population shares are now almost the same at the level of 10 percent. However, the share of equalization grants of Jeolla is about 8 percentage points higher than that

¹⁷Sorensen (2003) argues that the characteristics of the status quo in the Norwegian intergovernmental grants system is built into the Constitution of the Norway.

Figure 10: Regional shares of population and grants



of Chungcheong. If we trace back to the early 1970s, the population share of Jeolla is about 8 percentage point higher than that of Chungcheong, which may be, at least partly, related to the gap of the current shares of LAT and Local Transfer Fund between the two regions. Of course, this gap reflects the regional policy element that supports the regions with decreasing population and low income. But from the perspective of political economy, it can be related to the fact that many residents in the capital region who migrate from the rural areas still favor the political position of their home towns especially in the presidential elections. In other words, the population shares in terms of the origin of birth, not the current place of living, influence the politically determined distribution of regional grants. This is an important and interesting characteristic of the distributive politics in Korea.

4.3 Decomposition of Equalization Grants

The equalization grants in Korea can be characterized by two major driving forces. The first is the differences in the treatment of urban and rural regions. The second is the political differences between regions, especially the political rivalry between Gyongsang and Jeolla regions, which might be creating a kind of the status quo in the intergovernmental grants system. Examination in detail of the distribution of equalization grants, however, shows a possibility to overcome the political differences among politically rival rural regions. The economies of scale effect that dominates the distribution of equalization grants mainly comes from the big differences in the population sizes between urban and rural regions, not among rural regions. Therefore, the distribution of the per capita

equalization grants among rural regions will not be as much dominated by the economies of scale effect. Table 4 shows the comparisons of fiscal revenue of nine rural provinces. The first row shows the total assignment of fiscal resources to each province in trillion dollars.¹⁸ The assigned fiscal resources consist of local taxes, LAT and Local Transfer Fund.¹⁹ The second row shows the per capita amount of the assigned revenue in million Won. It shows that it is the lowest for Gyong-sang province and highest for Gangwon province, followed by Jeonnam province. Let us assume therefore that the central government evenly distributes to each province 1.33 million Won per head. This will make a deficit of 0.8 trillion Won for Gangwon, and 0.89 for Jeonnam, each translates respectively into 29 percent and 25 percent of the assigned revenue of the two provinces (row e). These differences can be interpreted to come from such cost factors as mountainous area, islands, etc., apart from the economies of scale effect which dominates urban-rural distribution pattern. Therefore the differences can continue to be embedded in the calculation of equalization grants, or more preferably separated from the equalization grants and transformed into regional policy grants which are focused on targeted expenditure categories. Once we make such a change, the equalization grants among rural regions can be greatly simplified, and contribute to reducing the inefficiency of the public sector of rural regions, since equalization grants are not tied to vaguely defined indexes of expenditure needs.

Table 4 shows that the decomposition of equalization grants is possible for the regions among which the economies of scale effect is not much different. The same is true for the urban regions. In Table 5, the per capita amount of the assigned revenue of the seven major cities and Gyonggi is shown, and Seoul, Ulsan, and Gyeonggi constitute a group of high per capita expenditure and other five cities a group of low per capita expenditure. Ulsan is the city where big factories such as Hyundai car and ship-building companies are located. Except Ulsan, the cities in the capital region and other major cities are differentiated by the high level of per capita local tax revenue in the former. It should be

¹⁸One trillion Won is very roughly one billion dollar, assuming the exchange rate of one dollar to be 1,000 Won. (Actual amount is currently around 920 Won.)

¹⁹When local tax rates are fixed, as is the case in Korea, local taxes can be viewed as a kind of revenue sharing between the central and local governments. Also, local taxes had been assigned to local governments long before the decentralization started in 1995. Therefore, from both economic and historical point of view, local taxes in Korea are a tool for assigning fiscal resources to local governments. Combining LAT and Local Transfer Fund with local taxes then shows the results of the central government's systematic financial support of local governments.

Table 4: The structure of assigned revenue of provinces

	Gang- Won	Chung- Buk	Chung- Nam	Jeon- Buk	Jeon- Nam	Gyong- Buk	Gyong- Nam	Jeju
Total (Tri. Won) (a)	2.86	2.23	3.19	2.65	3.53	4.06	4.18	0.93
Per capita (Mil. Won) (b)	1.88	1.5	1.63	1.39	1.78	1.51	1.33	1.67
b-Min(b) (c)	0.55	0.17	0.3	0.06	0.45	0.18	0	0.34
c×pop (Tri. Won) (d)	0.8	0.2	0.6	0.1	0.89	0.49	0	0.19
100×c/a	29.27	11.33	18.37	4.31	25.3	11.95	0	20.39
Sum(d)/Sum(a)	14.2%							

noted, however, that the high local tax revenue in the capital region does not necessarily imply the high tax burden of the residents in the region. Every local governments collects the same local tax items, and the tax rates are the same. Also, the local tax revenue is not very income elastic. Therefore the reason why the per capita local tax revenue in the capital region is almost third times as high as those of other major cities is the tax exporting effect: corporations also pay local taxes such as local corporate income tax (10 percent surcharge on the corporate income tax) and property transfer taxes which occupies a high share (around 35 percent) in the local tax revenue. So it is not surprising that the per capita local tax revenue of Ulsan, which collects a lot of tax revenue from big corporations, is as high as that of the capital region.

Table 5: The structure of assigned revenue of major cities (Mil. Won)

	Seoul	Busan	Dae-gu	In- cheon	Gwang- ju	Dae- jeon	Ulsan	Gyeong- gi
Per capita	0.96	0.68	0.66	0.69	0.65	0.71	0.92	0.95

The comparison of Table 4 and Table 5 apparently implies us that the rural regions are fiscally more attractive since the level of per capita expenditure in the rural regions is much higher than that of the urban regions. This is due to the strong financial supports the former receive from the central government. Therefore, it can be argued that people move to capital region because of the attractiveness of its market conditions despite the adverse fiscal conditions of the capital region. However, the high level of local tax revenue in the capital region does not necessarily mean the high tax burden of the

residents, as previously explained. Secondly, the high level of per capita local expenditure implies high level of the benefit from public expenditures only when the local expenditures consist of public services such as education, health care, police, welfare programs, etc. However, these public services are provided by the central government in Korea, and local governments are responsible for other public expenditures such as road construction, city re-development, etc.²⁰ The benefit from this type of expenditures is proportional, albeit not perfectly, to the total amount of the expenditure.²¹ Therefore apparently low level of public expenditure in Table 5 hides the fact that public services are provided by the central government in a large amount to the residents in the capital region. The public services are also provided to the rural residents. However, if public services dominate the local expenditure as in the many mature decentralized countries in OECD, the level of the per capita expenditure in the capital region will greatly increase, and as a result its gap between the urban and rural regions will shrink.

The current situation of intergovernmental fiscal relations described above suggests that the nature of the expenditure assignment between the central and local governments needs to be paid attention to when evaluating the dominance of the population size in the system of equalization system in Korea: unless the current expenditure assignment is changed into the direction of making local governments more responsible for local public services, the fiscally induced migration into the capital region will continue, and the political need of regional policies that support the rural regions will be as much strong. Since strong regional policy element is embedded in the equalization system, this in turn makes the simplification of equalization grants as much difficult.

One interesting aspect of the above policy recommendation is its relationship with the political economy implication of the political differences between regions. As was shown in Table 4, political rivalry is most intense between Gyongsang and Jeolla regions. Therefore it can be hypothesized that such political rivalry will create the status quo in the system of intergovernmental grants, and thus makes it difficult to change it. The comparison of Table 4 and Table 5, however, shows that the structural differences in the distribution of equalization grants is more pronounced between urban and rural regions, rather than among the rural regions. Therefore, changing the status quo of the intergovernmental

²⁰The subway system, which is almost exclusively used by local residents, has been built by the central government.

²¹According to Boadway (2004), regional public spending G yields per capita services $g = GN^{-\alpha}$, where α is degree of privateness and N is the region's population.

fiscal relations in Korea will first of all require the political consensus between the capital region and the rest of the country. This will be a difficult political deal, since the capital region occupies about the half the population and parliamentary seats. However, the regional policy in Korea is politically popular, and the concern over the ever-growing capital region has finally led to the majority decision of moving the capital town to a southern region. Therefore, once it is understood that the reason why the capital region attracts fiscally-induced migration has something to do with the current misallocation of expenditure assignment between the central and local governments, a gradual increase in the expenditure responsibilities of the capital region, a much softer measurement than moving the capital town, can be a politically acceptable change.

5 Conclusion

The challenges the policy makers are faced with in reforming the equalization grants system is never easy. Even when the calculation involves only the revenue side, the reform efforts are met with many opinions of the pro and cons as evidenced by Canadian and German experiences. The challenge of reforming expenditure needs is even more difficult since it involves tackling rather vague concepts such as basic needs and standard costs. The case of Korea is not an exception, and it will be extremely hard to make a fundamental change such as making the distribution pattern of equalization grants noticeably different.

Despite the practical difficulties over the change of equalization grants, McLean (2003) suggests a fundamental way to change the equalization grants system in the United Kingdom. A similar approach can be taken in Korea. The most noticeable characteristics of Korean equalization grants system is the dominance of the population size, which is directly related to the migration flow to the capital region. The migration to the capital region that has been going on for the past 30 years now makes the population size of the capital region almost half the whole population. This phenomenon is not purely driven by market forces: at least 10 trillion Won is spent every year by the central government on the public services such as education and police in the capital region. Including health care and welfare programs, which are in the phase of fast growth, makes the figure much higher.

With the level of income reaching \$20,000 per head, and aging process taking mo-

mentum, the demand for public services in Korea is growing fast. As a result, the central government starts to feel financially constrained by the growing budget of public services. Recently, the tension surrounding expenditure responsibilities between the central and local governments seems to be intensified. The fiscal burden of course needs to be shared by both the central and local governments. However, the need for changing the current expenditure assignment does not seem to draw much attention. However, once we understand that this issue is closely related to another very political and controversial issue, i.e., concentration of population around Seoul region and the regional policy that tries to deter the process, the policy reform direction may become clearer. It is true that it is politically very difficult to increase the expenditure responsibilities of public services in the capital region. However, the fiscally rich local governments in the capital region are in much better position in terms of its capability to absorb the change in the budget of public services than the local governments in the rural regions. If we succeed in decentralizing the provision of public services, the economies of scale effect in local expenditures will become less pronounced, and the fiscally-induced migration to capital region will also be reduced. At the same time, it gives the chance to simplify the calculation of expenditure needs since it is less affected by the issue of taking into account the economies of scale effect. Once simplification and transparency are improved in the system of equalization grants, the adverse incentives created by obscure and subject calculation of expenditure needs will also be reduced, which will ultimately enhance the efficiency of the local public sector.

References

- Balla, S., Lawrence, E., Maltzman, F. & Sigelman, L. (2002), 'Partisanship, blame avoidance, and the distribution of legislative pork', *American Journal of Political Science* **46**, 515–525.
- Berg, E. & Rattso, J. (2007), Do grants to state and local governments stimulate economic development?, Norwegian University of Science and Technology Working Paper.
- Bird, R. & Ebel, R. (2006), Fiscal federalism and national unity, in E. Ahmad & G. Brosio, eds, 'Handbook on Fiscal Federalism', Edward Elgar Publishing, Cheltenham.
- Boadway, R. & Flatters, F. (1982), 'Efficiency and equalization payments in a federal system of government: A synthesis and extension of recent results', *Journal of Canadian Economics* **15**, 613–33.
- Borge, L.-E. (2006), Centralized or decentralized financing of local governments? consequences for efficiency and inequality of service provision, Norwegian University of Science and Technology Working Paper.
- Dafflon, B. (2006), Fiscal capacity equalization in horizontal fiscal equalization programs, in R. Boadway & A. Shah, eds, 'Intergovernmental Fiscal Transfers: Principles and Practice', The World Bank, Washington.
- Horiuchi, Y. & Lee, S. (2008), 'The presidency, regionalism, and distributive politics in south korea', *Comparative Political Studies* **41**, forthcoming.
- Kwon, H. Y. (2005), 'Targeting public spending in a new democracy: Evidence from south korea', *British Journal of Political Science*, **35**, 321–341.
- McLean, I. & McMillan, A. (2003), 'The distribution of public expenditure across the uk regions', *Fiscal Studies* **24**, 4571.
- McLure, C. (2001), 'The tax assignment problem: ruminations on how theory and practice depend on history', *National Tax Journal* **52**, 339–364.
- Oates, W. (1972), *Fiscal Federalism*, Harcourt Brace and Jovanovich, New York.
- Reschovsky, A. (2006), Compensating local governments for differences in expenditure needs in a horizontal fiscal equalization program, in R. Boadway & A. Shah, eds,

‘Intergovernmental Fiscal Transfers: Principles and Practice’, The World Bank, Washington.

Shah, A. (2006), A practitioners guide to intergovernmental fiscal transfers, *in* R. Boadway & A. Shah, eds, ‘Intergovernmental Fiscal Transfers: Principles and Practice’, The World Bank, Washington.

Sorensen, R. (2003), ‘The political economy of intergovernmental grants: The norwegian case’, *European Journal of Political Research* **42**, 163195.

Tiebout, C. (1956), ‘A pure theory of local expenditures’, *Jornal of Political Economy* **64**, 416–424.