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Regional Development and Fiscal Policy

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Introduction

South Korea successfully overcame the major financial crisis that erupted in Asia in the late 1990s. However, after the more recent 2008 financial crisis that originated in the United States, Korea has been facing a harder struggle, given the much greater sensitivity of its current economy to external effects. Low growth defines the Korean economy now, engendering a series of related problems, including income inequality. Korean policymakers therefore stand at an important crossroad regarding the future of the nation's fiscal policy. As income inequality continues to worsen around the world, more and more researchers and experts are turning to the government to stem the tide by making massive fiscal investments.

Income inequality can take on a variety of effects and manifestations from country to country. Given Korea's small tax revenue as a percentage of its gross domestic product (GDP) and its low level of public spending on social welfare, the Korean government needs to increase investment in various measures and programs that will mitigate income inequality among individuals over the long term. In the past, fiscal investment in lessening income inequality among regions has been a top-priority in the Korean government's policy on promoting regional development and intergovernmental coordination, with much investment having already gone toward these causes.

Considering the current and prospective macroeconomic conditions and the anticipated changes in future fiscal demand, however, Korean policymakers will need to redirect their attention to lessening income inequality among individuals with greater fiscal investment and spending. Regional income

inequality, in the meantime, should take a backseat. This, in turn, would mean that a greater degree of efficiency would be expected of fiscal injections of even the same amounts into regional development.

Until now, much of the fiscal resources for regional development comprised the fiscal resources transferred into local government finances, which is what has complicated the process of effective fiscal performance evaluations. As matters of local government finance tend to be decided on the basis of political considerations, they have commanded far less attention and analysis than their importance warranted. However, we must note that the Korean government's investment in regional development, including resources and support provided for local government finances, represents the second-largest area of public spending next to spending on social welfare.

The sources of fiscal injections for regional development projects are not only limited to the Special Account for Metropolitan Cities and Provinces. Some government subsidy funds set aside for social overhead capital (SOC) development and some regional revenue are also spent on regional development. In particular, all the fiscal investments made in the development of facilities under the local government finance system, aside from cash subsidies, have gone toward aiding regional development.

Therefore, in discussing how we might improve Korea's regional development policy, we need also to discuss how we might reform and improve the intergovernmental fiscal coordination system. Moreover, as social spending will continue to increase in the future, while regional development spending decreases, we need to start exploring ways to enhance the effectiveness and efficiency of regional development support.

The Korean government has recently reaffirmed its commitment to promoting regional development as part of the national policy agenda. The Park Geun-hye administration in fact announced its policy on promoting regional development in July 2013, and it followed up with the announcement of a locally led economic revitalization plan in March 2014. What then sets the Park administration's regional development policy apart from similar policies of its predecessors? The Park administration's policy introduces the right to welfare and prosperity, and it strengthens, with necessary legal changes, the authority and role of the Presidential Committee on Regional Development in the process

of budget-making and allocation.

Aside from these changes, however, much of the new policy remains similar to the existing "Block Grant Program," allowing local governments to decide on what regional development projects to pursue and providing package-type support for each region as a unit. The reforms in the Special Account for Metropolitan Cities and Provinces that the new policy has introduced are confined to name changes only, with the Regional Development Account renamed as the Basic Livelihood Account, and the Metropolitan Development Account as the Economic Development Account. Under the new policy, local governments undertaking regional development projects can still follow much the same procedure to obtain much the same amount of fiscal resources. Perhaps the only significant difference is that the introduction of the right to welfare and prosperity has broadened the scope for local governments to devise new regional development projects. The Park administration's policy on regions, meanwhile, remains steadfastly focused on realizing the paradigm shift toward individual welfare and prosperity.

Since the introduction of the Special Account for Balanced Development in 2005, the Korean government's policy on regional development, along with the structural and fiscal support it entails, has changed nearly every five years with each new presidential administration. Regional development by its very nature, however, cannot be realized in such short time spans. Given the near-impossibility of distinguishing between the public sector's role and the private sector's role in regional development, along with the need to include the outcomes of the local government finance support policy in the evaluation of the effects of the regional development policy, it is extremely difficult to ensure the effectiveness of regional development policy by limiting its span to five years at a time.

With every new administration, Korean policymakers emphasize the need to adopt a "new paradigm" for regional policy to address the state of disparity among regions, but they show reluctance in ensuring a scientific evaluation of regional development policy results. Although the steady decline in numbers of people moving into the Seoul-Gyeonggi region and increased inter-city and inter-county mobility are outcomes of the regional development policy of the past few administrations, Korean policymakers have failed to properly focus

on and analyze these phenomena.

This study explains the need to bring regional development policy and fiscal policy together to ensure the efficiency of both policies, and it explores specific paths to that end. Part II surveys Korea's regional development policy so far and then examines its implications for fiscal policy. Part III describes the methods used to estimate the amounts of fiscal resources for regional development and then assesses the importance of such fiscal support in the context of international comparisons. Part IV surveys the regional development policies of major economies around the world and their implications for Korean fiscal policy. Part V provides an empirical analysis of the factors of fiscal injections and regional development that cause populations to move from one region to another in Korea. Part VI provides a summary of the foregoing parts before listing specific ways to enhance the correlation between regional development policy and fiscal policy in Korea.

Ⅱ

Regional Development Policy: Current Status and Issues

1 Assessment of reforms to regional development policy under the Park administration

A. Assessment and issues

As required by the amended Special Act on Balanced National Development (SABND) of 2009, the Korean government introduced the Special Account for Metropolitan Cities and Provinces (SAMCP) in 2010, thus implementing a new regional development policy focused on regional economies to overcome the issues identified with regard to the previous Special Account for Balanced National Development. The amendment of the statute in 2014 led SAMCP being renamed as the Special Account for Regional Development (SARD). Although the Park Geun-hye administration has additionally introduced new changes, including the right to welfare and prosperity, the structure and size of fiscal resources set aside for SARD will remain much the same.

The Park administration introduced the concept of the right to welfare and prosperity with the goal of strengthening the authorities of local governments, while also encouraging them to form a system of collaboration in utilizing the resources saved in the existing account. The key measure of change and success would depend on the extent to which the new concept prompts and enables local governments and authorities to introduce new regional development projects that are compatible with and effective under the existing autonomous organizations of municipalities, provinces, and local districts (including counties).

In theory, local governments are eligible for resources from both SARD and central government subsidies in pursuing their regional development projects. Therefore, we need to decide what kinds of incentives are needed to induce local governments to initiate projects focused on the right to welfare and prosperity. We also need to look at continued monitoring and evaluation of how effective more autonomous local governments are with these new types of projects in comparison with government-subsidized projects for regional development.

In this study, we will assess and diagnose the problems with regional development policy in Korea across multiple phases; that is, the strategy, implementation, and execution phases. In the strategy phase, the Presidential Committee on Regional Development (PCRD), the main supervisor of regional development policy, decides the goals and objectives of policy projects in consultation with other related departments, authorities, and stakeholders. This conforms to the ideal of the Park administration and presents no major issues.

However, problems began to arise in the implementation phase, even though goals and objectives of policy projects may be clearly and effectively defined in the strategy phase. Given the strong sway of government subsidies in regional development projects today, there is effectively no difference between the regional projects run by various departments of the central government, on the one hand, and the locally run development projects, on the other. In Korea, policy projects necessarily place one or more ministries in charge. These ministries, being agents of central government, are unable to identify local needs with sufficient clarity, either alone or together. For instance, the central government's projects for developing underdeveloped rural communities are mostly handled by either the Ministry of Agriculture (MoA), the Ministry of Government Administration and Home Affairs (MGAHA), the Ministry of Land, Infrastructure, and Transport (MOLIT), or various combinations thereof. Even some of these projects overseen by MOLIT involve the input of other departments, such as the Ministry of Employment and Labor (MOEL), further complicating prospects of interdepartmental coordination and communication. Although these ministries need to work together to reform the running of government-subsidized projects—eliminating overlapping projects and introducing new projects—the current subsidy structure does not permit it.

In an effort to break free of this pattern, the Park administration strengthened the role of the PCRD as the main "control tower" over regional development projects, boosting its function in coordinating different interests. However, the fact that the PCRD is dependent on the support and assistance of various ministries and departments may limit the committee's ability to insist upon views and perspectives differing from those ministries and departments. The current plan for enhancing the PCRD's role might simply perpetuate the existing framework for policy projects, without leading to meaningful changes and strategic outcomes. Moreover, it is impossible to support the current regional development policy with only the fiscal resources of the SAMCP without achieving some sort of intergovernmental fiscal coordination. The current governance structure, however, does not appear likely to produce any substantial improvement in this regard.

B. Realizing the right to welfare and prosperity using block grants

One key benefit of SARD's regional development projects is in the ready access to "block grants" from the government. These subsidies allow the subsidizer to ensure the efficiency of the resources it provides and the recipient to exercise greater autonomy in using those resources. As the right to welfare and prosperity necessarily presumes the autonomy of local governments undertaking development projects, the presence of block grants can significantly enhance the range of local government options.

In the past, however, block grants failed to induce sufficient collaboration from local governments working on similar projects. This is because regional development projects largely hinge upon clearly demarcated geographic boundaries, with few incentives to involve other local government authorities.

The Park administration need not introduce new units of regional development projects. Rather, it should first and foremost review whether the existing intergovernmental fiscal coordination system allows for the effective implementation of its regional development policy. In implementing the policy, the Park administration needs to enlarge the presence of block grants and the leeway it provides for local governments intent on launching new development projects. The Park administration, in other words, can realistically improve the

effect of its regional development policy by reforming its incentive structure, so that local governments have a greater range of options and level of autonomy in planning their development projects.

2 Regional development policy and fiscal support

A. Characteristics of the regional development policy

The regional development policy in Korea divides the spheres of living and economic activities into metropolitan regions and local area units. The regional development projects undertaken under this policy therefore target these area units, and they require reciprocal cooperation and partnership among these units—collaboration among place-based regional projects is also a significant pattern found with inter-regional collaboration projects in the European Union (EU). Then, in the execution phase, regional development is again divided between government-subsidized and locally funded projects. The central government's "capital expenditure," which forms part of fiscal spending, includes spending on these projects, in the form of government subsidies (including the SAMCP) and local spending.

The regional development policy projects take on different aspects and outcomes, depending on the amount of fiscal support available from central or higher-level government; the industrial and economic characteristics of the regions or communities they target; the given demographic structure; and the fiscal capacity of the local government involved. In order to enhance the effectiveness of these policy projects, we need to gain a good understanding of the fiscal support for local government finance. However, past presidential administrations have made few attempts to introduce official fiscal links between central and local governments, aside from the SAMCP introduced under the Participatory Government (Roh Moo-hyun administration). As Korea's intergovernmental fiscal coordination, such as the regional development policy, aims to promote a "more balanced development across different regions," the fiscal support provided for local government finance should also be considered in evaluating the outcomes of regional development policy projects.

The intergovernmental fiscal coordination system was introduced in order to promote balanced nationwide development. This is because 49.2 percent of the total national population is concentrated in the central-Capital (Seoul-Gyeonggi) region (compared with the Organization for Economic Cooperation and Development [OECD] average of 23.8 percent in 2008), with much of the national tax revenue similarly concentrated in that region. The established literature confirms that the Korean government adopted government subsidies (including the SAMCP) and local revenue sharing programs as part of its intergovernmental fiscal coordination structure to mitigate the social and economic differences between the nation's capital and other regions.

The local revenue sharing program allocated over 90 percent of its budget to regions outside of the Seoul-Gyeonggi region in the 1990s. The share, however, has dropped to 80 percent or below since the dawn of the new millennium, with new social welfare projects introduced. The Seoul-Gyeonggi region, where about half the Korean population resides, typically receives 10 to 20 percent of the fiscal equalization grants. The same pattern is noted with respect to government subsidies, with the share of the Seoul-Gyeonggi region steadily increasing from 10 percent in 1997 to 20 percent in the first decade of the 21st century.[1] This reflects that the focus of these programs is shifting from the balanced development of national territories to individual welfare and social services.

B. Fiscal support for local government finance

As of 2014, the total amount of annual fiscal spending from local governments amounted to slightly less than KRW 160 trillion. The central government's budget for supporting local government finance amounted to KRW 274.7 trillion, and the central government's spending after fiscal coordination reached KRW 158 trillion. Local governments in Korea together obtained KRW 67 trillion from local taxes and other non-tax sources of revenue, and they

1) The share of the Seoul–Gyeonggi region in these programs is on the rise, first because of the increasing size of its population, and second, because more and more program resources are being spent on supporting welfare and social services rather than on the development of infrastructure

received KRW 69 trillion in total from the central government via the local revenue sharing program and subsidies. In the meantime, the fiscal grants for local education, fixed to 20.27 percent of the total domestic tax revenue, amounted to KRW 40 trillion.[2)]

The local revenue sharing program provides place-based "general grants" in support of the general accounts of local governments. Government subsidies, on the other hand, refer to the earmarked grants that various ministries and departments of the central government provide for local governments. In general, local taxes provide the resources for local investments and therefore form the pool for government subsidies. Local governments, intent on introducing their own regional development projects, can make use of both their own tax revenue and the additional resources available via the local revenue sharing program. However, the notable increase in the number of welfare and social service projects, and the increasing burden on local governments to apportion the necessary funds, make it increasingly difficult for local governments to invest their own fiscal resources in development projects. The majority of capital expenditure projects are therefore based on government subsidies which, in turn, have their basis in the laws and policies of the central government.

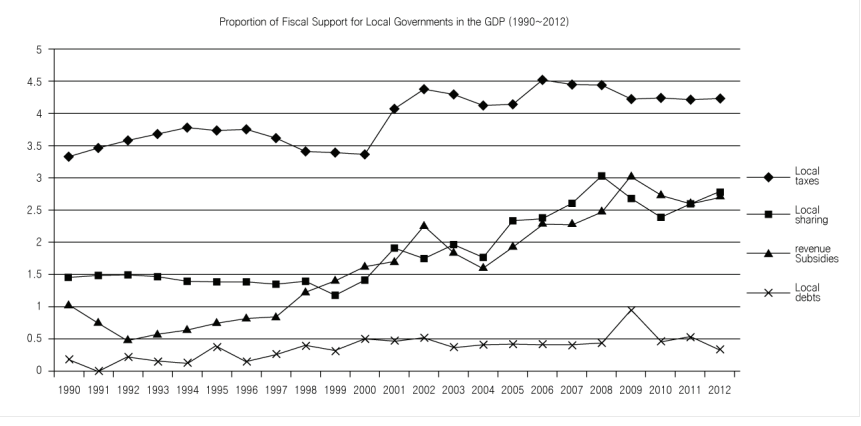
Local revenue sharing consistently accounted for 1.5 percent or so of Korea's gross domestic product (GDP) from 1990 to 2000. Its share began to rise afterward, reaching 2.7 percent in 2012, slightly higher than the OECD average of 2.3 percent. A similar pattern is repeated with respect to government subsidies. The two kinds of support for local government finance accounted for 5.0 percent or so of Korea's GDP by 2011.[3)] However, keep in mind that some of the cash benefits provided via government-subsidized welfare and social

2) MGAHA, *Integrated Local Government Finance Overview 2014*, p. 11.

3) An international comparison reveals that the total amount of fiscal resources (fiscal equalization grants, local education fiscal subsidies and government subsidies) transferred to local governments in Korea in 2011 amounted to 8.06 percent of the country' s GDP, which is significantly higher than the OECD average of 5.95 percent. The OECD Fiscal Decentralization Database shows that, while the OECD average kept rising from 5.46 percent in 2000 to 5.64 percent in 2008 and to 6.21 percent in 2009, it suddenly dropped to 5.58 percent in 2012. The amount of spending on local government finance abruptly rose in certain member states (e.g., Denmark, Israel) in recent years except during the financial crisis of 2008 and 2009. The overall trend, however, is that of a consistent and slow growth

[Figure II-1] **Proportion of Fiscal Support for Local Governments in the GDP (1990-2012)**

(Unit: %)



service projects, such as the National Basic Livelihood Security and Medicaid benefits, are designed to benefit individuals and not regions or local communities. Therefore, we should *not* regard the entirety of the government subsidies as having been provided in support of regional development.

The distribution of government subsidies shows that the Ministry of Health and Welfare (MHW) was the recipient of KRW 18.3 trillion (out of a total of KRW 36.7 trillion) and KRW 22.0 trillion (out of a total of KRW 40.0 trillion) of government subsidies in 2013 and 2014, respectively. In other words, the share of government subsidies for cash benefits in welfare and social services rose from 49 to 55 percent.

In 2014, the fiscal decentralization resources provided for regional development included local revenue sharing (2.5 percent of the GDP) and government subsidies (1.25 percent of the GDP). The two kinds of support together amounted to 3.25 percent of the GDP. In comparison, the average amount in fiscal equalization grants across the OECD member states accounted for 2.3 percent (ranging from 0.5 to 3.8 percent) of the GDP or 1.2 to 7.2 percent of government spending.[4)]

The increasing emphasis on subsidizing the costs of welfare and social

services will lead to a gradual decrease in the amount of fiscal resources for regional development and other causes. Given the trend so far, the level of local revenue sharing in Korea will remain more or less the same. The total amount of government subsidies, in the meantime, may increase in absolute terms, but they are likely to play a decreasing role in support of local government.

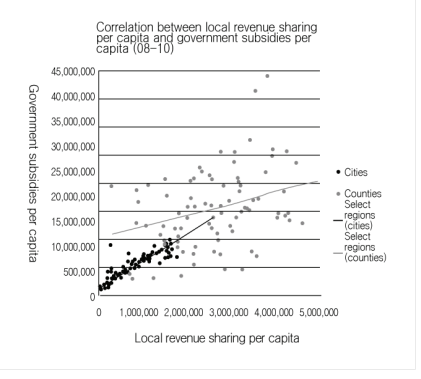
C. Characterizing different types of fiscal decentralization resources

Before we set out to promote and encourage regional development, we need a good grasp of how fiscal support for local government finance works in Korea at present. This study seeks to demonstrate that Korea's national government has provided a significant amount of fiscal resources for regional development over the past few decades through the intergovernmental fiscal coordination system, with a particular focus on supporting underdeveloped rural regions. Demonstrating and understanding these and related facts are crucial for us in designing a more effective regional development policy.

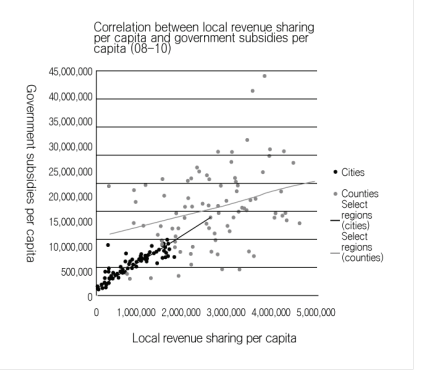
For example, in designing a new regional development policy, we need to decide whether to increase our emphasis on and support for the development of underdeveloped regions or delegate support for underdeveloped regions as a concern of the fiscal coordination system only and shift our focus altogether to enhancing the competitiveness of local and regional economies. Established literature confirms that, in Korea, both local revenue sharing and government subsidies are focused foremost on fiscal coordination. Although government subsidies, in theory, are supposed to be provided in proportion to demand, both local revenue sharing and government subsidies have followed similar distribution trends since 2000. So, fiscal support for local government finance until now has served as an instrument of redistributing wealth among different regions. Redefining the roles and purposes of the two kinds of fiscal support will therefore bear significantly upon the future of regional development policy in Korea.

4) OECD (2009b), p.120.

[Figure II-2] Local Revenue Sharing per Capita and Government Subsidies per Capita, 2003-2007



[Figure II-3] Local Revenue Sharing per Capita and Government Subsidies per Capita, 2008-2010



Source: Kim (2012), p. 99 (Figures IV–42 and IV–43).

In order for us to maximize the effectiveness of the fiscal support for local government finance and development, we need to consider the requirements and tasks of both local fiscal support policy and the policies of specific local governments. Before surveying the achievements of Korea's regional development and government finance support policies up until now, we need first to estimate the amount of fiscal resources available to support regional development. Moreover, we need to conduct an empirical analysis of how capital expenditure has affected and shaped demographic trends over the years through local investments, thereby preparing a key measure of the performance of fiscal resources for regional development

Ⅲ

Estimating Fiscal Resources for Regional Development

How much in fiscal resources has the central government of Korea provided for regional development so far? The SAMCP represents the nominal and minimal amount of fiscal resources explicitly set aside for regional development. Yet there are a far greater number of government-subsidized and locally funded projects that use significant, yet unspecified, portions of national and local budgets. This failure to keep statistical track of fiscal resources used to support regional development is a common phenomenon observed not only in Korea, but also in other OECD member states.[5] Before designing the proper reform of the current situation, we need first to estimate and identify the amounts of fiscal support that have been provided for regional development until now. In this section, we shall define and examine the different types of fiscal resources for regional development in Korea, and then we will place them in the context of an international comparison with a view to estimating the proper amount of fiscal support needed.

1 Special Account for Regional Development (SARD)

As of 2013, the SAMCP held KRW 9.7 trillion in total (6.2 percent of the combined local government budget of KRW 150 trillion or 2.8 percent

5) OECD (2010), "No country reported an overall estimate of the regional policy budget," *Regional development policies in OECD countries*, p. 20.

〈Table III-1〉 **SAMCP Budget Trends**

(Unit: KRW 100 million)

Account	2005	2006	2007	2008	2009	2010	2011	2012	2013
RDA	40,500	45,127	50,288	57,676	36,588	36,282	36,332	34,707	34,737
MDA (a.k.a. "Local Innovation Account")	12,767	13,960	14,921	16,770	54,024	58,946	58,252	55,538	59,046
Jeju Special Self-Governing Province	–	–	3,476	3,931	3,719	3,782	3,942	3,840	3,531
Total	53,267	59,087	68,685	78,377	94,331	99,010	98,526	94,085	97,314

Notes: 1) Data pertaining to the years 2005 through 2011 were obtained from internally circulated documents on the PCRD
2) Data pertaining to the years 2012 and 2013 were obtained from internally circulated documents in the Ministry of Strategy and Finance (MSF)

of the total national budget of KRW 342 trillion). Of this, block grants ("sealed budgets") for the Regional Development Account (RDA) (which includes autonomous organizations of municipalities, provinces, and districts) amounted to KRW 3.4 trillion, while the Metropolitan Development Account (MDA) accounted for KRW 5.9 trillion. These figures may not sound like much, but they are in fact significant sums, especially when considering that the majority of OECD member states actually lack any specific accounts set up to support regional development.

The United Kingdom and Japan manage similar accounts to support regional development. Yet, even when compared to the United Kingdom's account, the amount of resources Korea's SAMCP provides is sizable. The few historical precedents in which a central government set aside certain amounts of fiscal resources for regional development include the single-pot program, administered by the regional development agencies (RDA) in the United Kingdom. But even this single-pot account amounted to a mere 0.7 percent of the public spending budget of each RDA at the time. Subsequently, when the single-pot program was replaced by the local enterprise partnerships (LEPs), the direct support from the central government disappeared together, with local governments receiving significantly less financial support from the Local Growth

Fund upon application, whose budget was less than one-third of the previous RDA budget.[6] The Japanese government introduced community renovation grants in 2004, whose budget increased dramatically to JPY 251 billion in 2009. Even so, that total amounted to a mere 0.27 percent of the Japanese government's total budget of JPY 90 trillion.[7]

As of 2013, the SAMCP included such subunits as the RDA and the MDA, and it provided for 18 projects of various ministries and departments in total. MOLIT was by far the biggest recipient, claiming some KRW 3 trillion, while MoA received KRW 1.68 trillion and the Ministry of Trade, Industry, and Energy (MOTIE) received KRW 1.57 trillion. These three ministries together claim 64 percent of the entire budget in the SAMCP. Much of the money in the MDP, in particular, goes toward funding MOLIT's projects. MoA handles many projects involving the autonomous organizations of cities and lower-level districts, while MOTIE handles projects that mostly feature autonomous organizations within municipalities and provinces (<Table III-2>).

The block grants amounted to KRW 4 trillion in total in 2005 when the SABND was first introduced, and they kept growing to KRW 5.7 trillion in 2008. Under the Lee Myung-bak administration, however, their total amount dropped to KRW 3.6 trillion and further to KRW 3.4 trillion in 2014. The budget in the MDA, on the other hand, tripled from KRW 1.6 trillion in 2008 to KRW 5.9 trillion by 2013. The SAMCP, which was renamed the Special Account for Regional Development (SARD) in 2015, retained its structure and allocation even after the change of name, while taking on a new subunit known as the "social account." The name of the RDA was changed to the Basic Livelihood Account in January 2014, while the MDA was not known as the Economic Development Account (EDA) until the beginning of 2015.[8]

6) Kim (2011), p. 197.

7) OECD (2009b, p.119), Box 3.4.

8) See the text of the Special Act on Balanced National Development

〈Table III-2〉 **Current Status of Budget Spending from the SAMCP**

(Units: KRW 1,000,000, % – for margin of yearly increase/decrease)

	2012	2013	Yearly increase/decrease	Main project
Ministry of Education (MoE)	676,060	753,615	2%	HRD for regional economies
	–7%	11%		Enhancing competitiveness of local universities
MGAHA	463,547	454,739	–1%	Developing specially situated regions
	–6%	–2%		Improving structures of risky roads
Ministry of Culture, Sports, and Tourism (MCST)	602,876	650,430	4%	Developing tourism resources
	–4%	8%		Supporting athletic facilities
MoA	1,660,059	1,685,300	–1%	Developing general farming and fishing communities
	–2%	2%		Strengthening farming and fishing infrastructure
MOTIE (formerly known as Min. of Knowledge Economy)	1,384,747	1,575,844	3%	Fostering new regional industries
	–7%	14%		Encouraging local investment
MHW	2,333	3,446	–9%	Supporting jobs for seniors (Jeju)
	20%	48%		
Ministry of Environment (ME)	477,704	769,800	20%	Installing and maintaining waterworks
	–3%	61%		Preserving and conserving natural environment
MOEL	10,516	8,564	12%	Fostering social enterprises (Jeju)
	53%	–19%		
Ministry of Gender Equality and Family (MOGEF)	41,477	50,550	3%	Creating youth facilities
	–16%	22%		

〈Table III-2〉 **Continued**

	2012	2013	Yearly increase/decrease	Main project
MOLIT	3,243,306	2,993,725	−6%	Growth−stimulating regional development
	1%	−8%		Creating roads to industrial clusters and double−lane railways
Ministry of Patriots and Veterans Administration (MPVA)	1,360	1,473	7%	Compensations for Jeju victims
	6%	8%		
National Police Agency (NPA)	27,014	27,014	−6%	Improving regional transportation control system
	−9%	0%		
National Emergency Management Agency (NEMA)	358	350	4%	Acquiring additional rescue equipment for 119 emergencies
	−8%	−2%		
Cultural Heritage Administration (CHA)	14,820	16,241	−18%	Developing tourism resources
	−26%	10%		
Rural Development Administration (RDA)	97,578	95,822	3%	Supporting rural technological specialization
	2%	−2%		
Korea Forest Service (KFS)	283,072	316,596	16%	Developing forests and greeneries
	3%	12%		Creating roads to forests
Small and Medium Business Administration (SMBA)	417,076	324,709	−10%	Fostering industrial−academic alliances on technology development
	−4%	−22%		Small Vender Support Center
Ministry of Food and Drug Safety (MFDS)	4,594	4,594	−2%	Monitoring food and drug safety
	−5%	0%		
Total	9,408,497	9,732,813		

Sources: MSF, Digital Budget Accounting System"(www.dbrain.go.kr); final budgets of 2012 and 2013.

2 Estimating fiscal resources for regional development

A. Yearly capital expenditure trends

In 2012, local governments in Korea together spent capital expenditure of KRW 51.8 trillion, which was about 34.5 percent of the aggregate local budget of KRW 150 trillion. Current transfers, representing the portion of social and welfare spending, amounted to KRW 54.2 trillion, which was 36.1 percent of the aggregate local budget. The capital expenditure of local governments in 2012 amounted to 42 percent of the KRW 121 trillion set aside for policy projects. Since 2005, the amount of social and welfare spending has been rising, causing capital expenditure to drop from 43.7 percent in 2005 to 34.5 percent in 2012. Current transfers saw their share increase from 23.2 to 36 percent over the same period of time. In other words, cash benefits and transfers have come to make up a greater share of local government spending, while investment in local infrastructure and SOC development has waned. The trend is likely to persist for the time being.

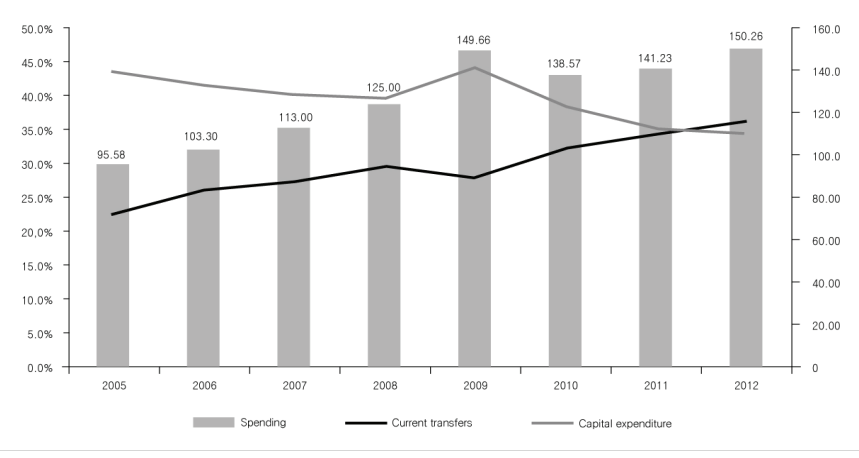
In 2012, locally funded policy projects made up 38 percent of the capital expenditure, which is significantly higher than the 30-percent share of current transfers. Capital expenditure projects, in other words, tend to depend more on local initiatives and resources than current transfer projects. This is because the increase in the demand for current transfer projects and social services has deepened local governments' dependency on government subsidies, while also compelling them to find resources of their own to pursue regional development projects

Since 2000, local governments have kept the levels of their expenses on labor, goods, and the like consistent, while their current transfer amounts kept increasing against a steady decline in capital expenditure. In sum, much of the increase in local government budgets in recent years can be attributed to the rapid increase in the amount of current transfers.

Since the onset of the recent financial crisis in 2009, local governments have introduced exceptional spending programs that run on capital expenditure. Nevertheless, this move has been unable to stem the increase in the amount

[Figure III-1] Pure Statistics Analysis of the Expenditure of Local Governments Since 2005: General and Special Accounts

(Units: KRW 1 trillion, %)



Source: "Capital Expenditure 400" and "Current Transfers 300" in the *Annals of Local Government Finance*, each year, for capital expenditure items and current transfers, respectively.

〈Table III-3〉 Pure Statistics Analysis of Different Items of Tax Spending by Local Governments: Overview

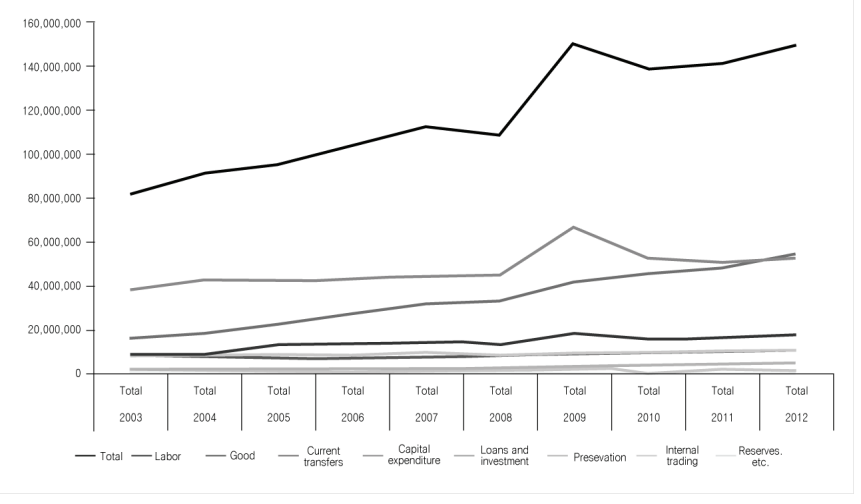
(Unit: KRW 1 billion)

	2011			2012		
	Total	300–00 current transfers	400–00 capital expenditure	Total	300–00 current transfers	400–00 capital expenditure
Total	141,233	48,518	50,186	150,261	54,166	51,807
Policy projects	113,787	43,414	49,704	121,344	48,669	51,298
Locally funded projects	51,131	14,626	19,866	51,844	14,577	19,293
Government–subsidized projects	62,657	28,788	29,837	69,499	34,092	32,005
Financial activities	7,455	2,348	388	7,715	2,359	427
Administrative and operating expenses	19,991	2,755	94	21,202	3,137	81

Source: MGAHA (2013), *Overview of Local Governance Finance*

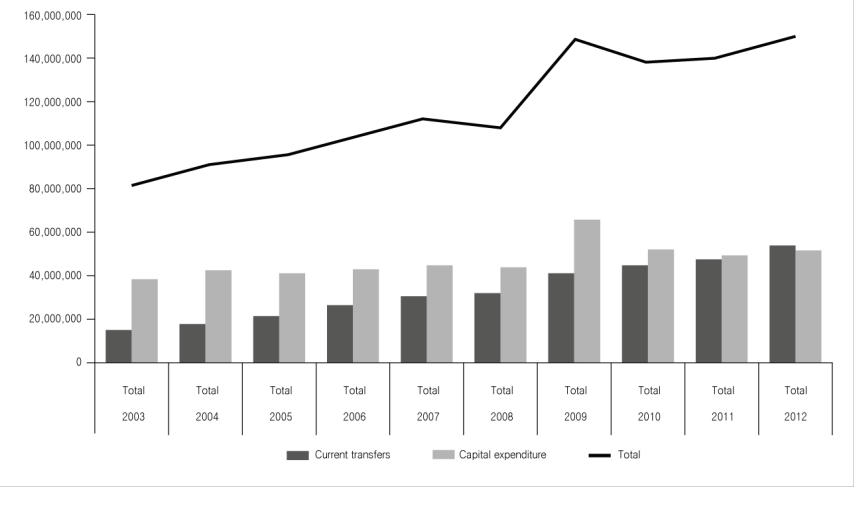
[Figure III-2] **Trends in Different Items of Local Government Spending Since 2000**

(Unit: KRW 1 million)

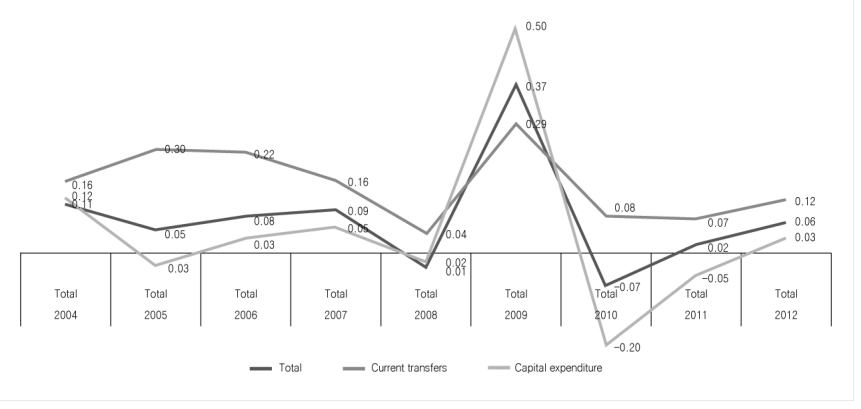


[Figure III-3] **Total Budget, Current Transfers, and Capital Expenditure of Local Governments**

(Unit: KRW 1 million)



[Figure III-4] **Current Transfers vs. Capital Expenditure: Rates of Increase**



of current transfers or it exceeding the amount of capital expenditure by 2012.

In 2005 and 2006, the amount of current transfers increased by 23 percentage points and—in just a year—by 22 percentage points, respectively; the capital expenditure dropped by three percentage points and grew by a mere five percentage points, respectively; and this was even as the overall budget increased by five percentage points and eight percentage points, respectively. While the amount of capital expenditure and the total budget have been steadily decreasing since 2009, the spending on current transfers has continued to grow at seven or eight percent a year.

B. Capital expenditure trends by region

Since 2007, the amounts of capital expenditure have reached KRW 9.4 trillion for Gyeonggi-do and KRW 5.3 trillion for Gyeongsangbuk-do. Capital expenditure has been on the wane in special and metropolitan cities, such as Seoul and Incheon, while on the rise in a few major cities, such as Busan and Daegu. With capital expenditure of KRW 4.9 trillion and KRW 4.7 trillion, the provinces of Jeollanam-do and Gyeongsangnam-do came in third and fourth, respectively. Of the local revenue sharing of KRW 31.4 trillion in 2014, Gyeongsangbuk-do claimed KRW 5 trillion (16 percent); Jeollanam-do claimed

KRW 4.3 trillion; and Gangwon-do, Gyeongsangnam-do, and Jeollabuk-do claimed KRW 3.2 trillion each.

On the whole, the share of capital expenditure in the local government budget has been decreasing since the latest global financial crisis. In terms of the rate of decrease since 2007, Gangwon-do tops the list, followed by Jeollanam-do, Gyeongsangbuk-do, and Gyeonggi-do, in that order. More specifically, the share of capital expenditure in the given budget dropped from 26.3 percent to 18.8 percent in Seoul, and from 45.1 percent to 34.4 percent

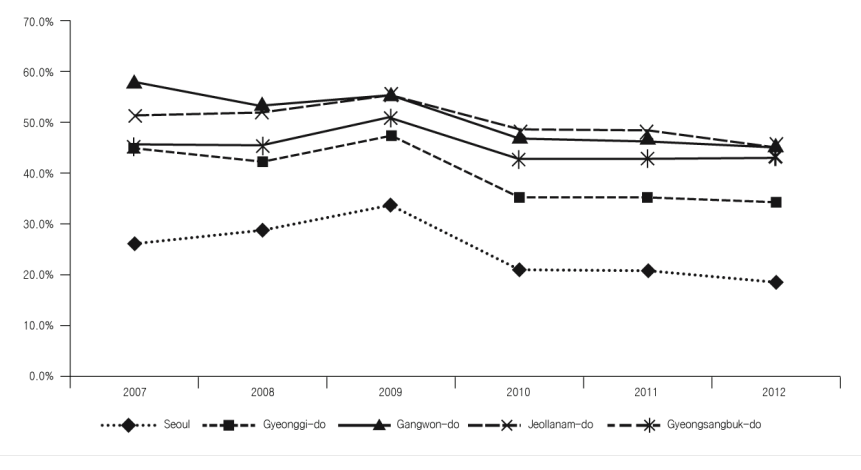
〈Table III-4〉 **Capital Expenditure Trends by City, Province, and Year**

(Unit: KRW 1 billion)

	1997	2000	2005	2006	2007	2008	2009	2010
Seoul	4,370	4,436	4,673	4,401	4,766	5,822	7,801	5,697
Busan	1,808	1,408	1,728	1,681	1,696	2,081	2,819	2,449
Daegu	1,369	1,236	947	720	735	983	1,419	1,343
Incheon	1,138	892	1,672	1,816	2,203	1,863	3,144	2,686
Gwangju	745	680	726	734	672	584	1,011	812
Daejeon	523	561	768	778	863	776	1,102	903
Ulsan	393	511	679	745	662	987	1,171	900
Gyeonggi-do	4,778	4,794	8,703	9,286	9,680	9,846	13,349	9,862
Gangwon-do	1,612	1,724	2,826	2,942	3,991	3,659	4,391	3,381
Chungcheongbuk-do	1,092	1,016	1,877	1,806	1,984	2,269	2,937	2,429
Chungcheongnam-do	1,572	1,573	3,012	2,862	2,816	3,048	4,132	3,504
Jeollabuk-do	1,771	1,436	2,070	2,564	2,246	2,692	3,456	2,918
Jeollanam-do	2,067	2,092	3,789	3,837	3,935	4,686	5,969	5,044
Gyeongsangbuk-do	2,054	2,126	3,458	3,679	3,809	4,311	6,105	5,086
Gyeongsangnam-do	2,295	2,365	4,056	4,192	4,372	4,650	6,234	4,740
Jeju-do	515	518	807	1,019	992	1,207	1,559	1,202
Total	30,099	29,366	43,797	45,068	45,422	49,464	66,599	52,956

in Gyeonggi-do, between 2007 and 2012. In the meantime, the share dropped only marginally from 44.8 percent to 43.6 percent in Gyeongsangbuk-do, while increasing by 5.7 percentage points and 0.5 percentage point in Jeollanam-do and Jeollabuk-do, respectively. As mentioned, the capital expenditure amounts to 18.8 percent of the total local budget in Seoul, but it hardly benefits from the local revenue sharing program. With the share of capital expenditure in the city's general account falling by more than 10 percentage points between 2002 and 2012－from KRW 1.9 trillion to KRW 1.1 trillion－we can see that the increase in local fiscal resources for welfare and social spending clearly contributes to a decrease in local capital expenditure

[Figure III-5] **Trend in the Shares of Capital Expenditure in the Local Budgets**



〈Table III-5〉 **Pure Statistics Analysis of Spending by Local Governments: Overview**

(Unit: KRW 1 billion won)

	2011			2012		
	Total	Current transfers	Capital expenditure	Total	Current transfers	Capital expenditure
Total	141,233	48,518	50,186	150,261	54,166	51,807
Seoul	22,036	8,948	4,680	22,334	9,414	4,205
Busan	8,440	3,635	2,250	8,985	3,945	2,373
Daegu	5,459	2,260	1,313	5,813	2,536	1,589
Incheon	6,829	2,496	2,380	7,432	3,012	2,351
Gwangju	3,204	1,434	843	3,495	1,640	873
Daejeon	3,094	1,104	948	3,210	1,226	926
Ulsan	2,539	796	792	2,900	902	961
Sejong	0	0	0	205	71	75
Gyeonggi-do	25,082	8,313	8,935	27,452	9,873	9,442
Gangwon-do	7,223	1,861	3,428	7,522	2,015	3,481
Chungcheongbuk-do	5,649	1,794	2,359	5,969	1,972	2,387
Chungcheongnam-do	8,164	2,522	3,396	8,635	2,759	3,589
Jeollabuk-do	7,827	2,708	3,188	8,216	2,999	3,207
Jeollanam-do	10,115	2,868	4,869	10,949	3,286	4,971
Gyeongsangbuk-do	11,534	3,536	4,954	12,312	3,901	5,372
Gyeongsangnam-do	11,324	3,523	4,650	11,835	3,813	4,710
Jeju-do	2,714	720	1,201	2,996	804	1,295

Source: *Annals of Local Government Finance*, each year

3 Estimating the costs of government-subsidized projects

A. Estimating the social overhead capital (SOC) stock by region

Until now, the task of estimating fiscal resources that went into regional development involved examining only the flows of fiscal resources from year to year, as indicated on annual local government budgets. However, when more closely investigated, the majority of infrastructure and related features developed in these regions have resulted from projects directly subsidized by the central government. Harbors, roads, railways, etc. should therefore be counted as part of each region's total SOC stock. So the capital expenditure included in local government budgets does not represent all the capital facilities in their given regions. The majority of roads, railways, harbors, airports, and so on are built and maintained by the central government via public corporations. Even if they were to belong to given regions as local assets, they would still count as part of national wealth, or returns on the investment of national capital.

When a certain portion of the population of Region "i" moves to Region "j," for example, the total SOC stock of "j" would remain the same, irrespective of who owns it (i.e., whether the central government, the local government, or a private-sector entity). The SOC capital refers to the amount of assets that has been accumulating in a given region, and it is therefore not reflected in the flow-based approach to the review of local government budgets.

The "flow" items that form the "stock" of a given year correspond to the "total capital formation" in the National Account. Total capital formation can be defined as investment that a producer makes in the acquisition or development of inventory and fixed assets for future profits. Total capital formation (i.e., the sum of total fixed capital formation and increases or decreases in inventories) serves to increase the capital stock at a given point in time. The estimate on the total capital stock of the base year can be added to time-series statistics on the total capital formation concerning the period starting in and extending after the base year to measure the current level of the capital stock.[9] In international comparisons concerning periods after the

financial crisis of 2008-2009, the public investment made by each government amounted to the sum of the total fixed capital formation and the capital transfer. An analysis of the portion in this public investment imputed to local governments in Korea revealed that local governments were responsible for more than 50 percent of all such investment, on a par with the OECD average.[10)]

In this study, we include the fiscal resources that the central government provides directly for the development of the SOC stock into the fiscal resources provided for regional development in general. The only source of data on the SOC capital stock development in Korea is the *National Wealth Statistics Survey*, conducted every 10 years. However, the survey provided data on local situations in the year of 1997 only and was conducted for the last time in 1997.[11)] Although international comparisons in research worldwide do cite official data on Korea's national wealth (i.e., total fixed capital formation) provided by the Korean government, no such data are collected separately with respect to local and regional situations. A series of studies, starting with Kim and Kwon (2003) and including Kim (2004), Ryu (2005), Ahn and Kim (2006), Kim (2010), and Mun (2014), have attempted to estimate the status of SOC capital stock by region that have accumulated since Statistics Korea released its findings on local SOC capital stocks in 1997. These studies apply the to SOC capital－including transportation infrastructure (roads, railways, harbors, airports, etc.), amenities and utilities (waterworks, electricity, gas, etc.), communications features, and water-related facilities－and estimate the total capital stock of each area using the prices of 2000 as the base. The studies therefore provide useful information for estimating capital stocks by region. The latest study by Mun (2014), in particular, improves and expands upon the original methodology formulated by Kim (2004, 2010) and also provides updates on national wealth statistics. The findings and data provided by Mun (2014) therefore form the basis of the capital

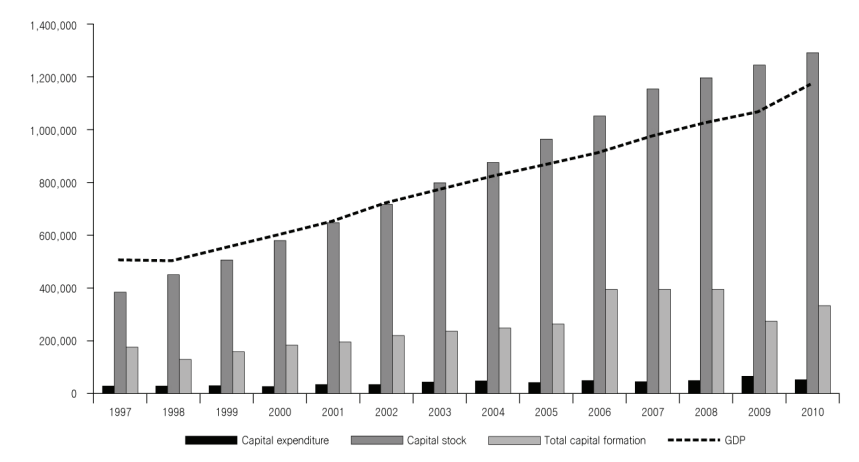
9) Song Byeong-ho (2006), "Annotations on the OECD Capital Stock Estimation Manual: Part 5," *Quarterly National Account*, National Balance Sheet Task Force, Economic Statistics Bureau, Bank of Korea, pp. 195–196.

10) OECD (2010), p. 23, Figure 1.5.

11) Quoted in Mun (2014), p. 2.

[Figure III-6] **Capital Stock and GDP**

(Unit: KRW 1 billion)



stock estimation and analysis in this study.

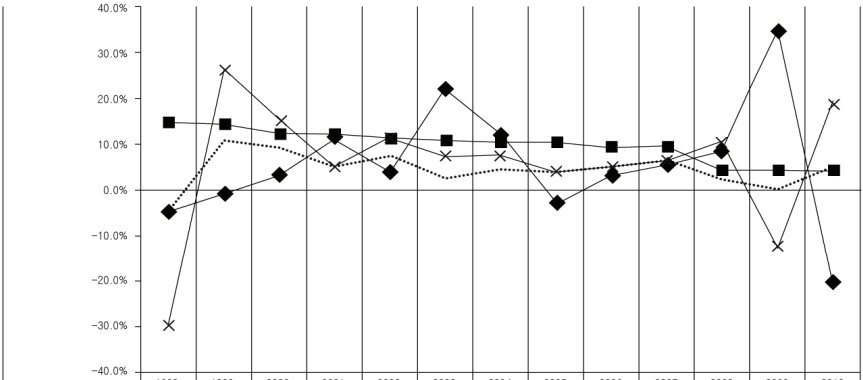
Government-subsidized facilities that are included in capital stock include roads, railways, airports, harbors, waterworks and sewage facilities, irrigation and flood control facilities, electricity and gas facilities, and communications facilities. In 1997, the total value SOC stock in Korea amounted to KRW 394.6 trillion. Since then, the total value has kept growing at an average of 9.2 percent a year, more than tripling to KRW 1,295.7 trillion by 2010. Past *National Wealth Statistics Surveys* reveal that the amount of capital investment by the government had multiplied by over 84 times in just two decades, from KRW 4.6 trillion in 1977 to KRW 388.2 trillion in 1997. The surveys show that the greatest amounts of investment went into building roads, gas facilities, and irrigation and flood control facilities, in that order.

By 1997, the total capital stock had increased by 14.3 percentage points in value from the previous year, but the growth rate began to slow down afterward, continuing at around 10 percent until 2004 and dropping further to 9.6 percent by 2006, 6.5 percent by 2007, and 3.8 percent by 2008. The declining growth rate may reflect the saturated state of SOC development in Korea,

befitting the rise in income levels. However, it also reflects an actual decrease in the share of budgetary resources allocated to that end, particularly due to the increase in demand for welfare and social services.

In 2012, the total capital formation in Korea amounted to KRW 350 trillion or so, about double the KRW 178 trillion of 1997. In the economic recovery years following the Asian Financial Crisis, total capital formation in Korea kept growing rapidly, by 26.9 percent from 1998 to 1999 and again by 15.7 percent from 1999 to 2000, but its growth rate soon began to slow, dropping to 4.0 percent by 2005. Its growth rate spiked again briefly to 10 percent or so under the Lee Myung-bak administration, before plummeting to -13.1 percent in 2009 due to the global financial crisis. Although the growth rate picked up to 18.9 percent in 2010 and 8.5 percent in 2011, it again dropped to -2.65 percent in 2012. Overall, total capital formation is subject to much more dramatic fluctuations in its growth rate than capital expenditure, which reflects the redistribution of resources in the interest of more balanced regional development

[Figure III-7] **Resources for Regional Development and the Changing Share in the GDP**



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Capital expenditure	-4.9%	-0.6%	3.0%	11.2%	4.0%	21.6%	12.1%	-3.1%	3.0%	5.5%	8.9%	34.6%	-20.5%
Capital stock	14.6%	13.9%	12.4%	11.8%	11.1%	10.8%	10.3%	9.8%	9.4%	9.4%	3.7%	4.1%	3.9%
GDP	-5.7%	10.7%	8.8%	4.0%	7.2%	2.8%	4.6%	4.0%	5.2%	5.1%	2.3%	0.3%	6.2%
Total capital formation	-30.2%	26.9%	15.7%	4.9%	11.8%	7.5%	7.5%	4.0%	5.6%	6.6%	10.7%	-13.1%	18.9%

B. Distribution of SOC stocks by region

Between 1997 and 2010, capital stock in the Seoul-Gyeonggi region increased slightly, from 31.8 percent to 33.4 percent of the national total.[12] This clearly contrasts the region's capital expenditure, whose share in the national total dropped from 36.6 percent to 30.9 percent over the same period. However, when we look more closely, Seoul's share of capital stock decreased slightly from 14.9 percent to 13.1 percent, while Gyeonggi's share increased from 12.9 percent to 16.1 percent. The other regions with the greatest shares of the nation's SOC stock were Gyeongsangbuk-do (around 10 percent), Gyeongsangnam-do (9.7 percent), and Chungcheongnam-do (seven percent), whose respective shares in the national total remained consistent throughout the given period. Aside from Jeju, the region with the smallest share in the nation's SOC stock was the Metropolitan City of Gwangju, whose share has stayed at 1.8 percent over . Chungcheongbuk-do and Jeollabuk-do were the provinces with the smallest shares, at 4.7 percent and 6.0 percent, respectively.

As for other indicators of balanced development, the government's commitment to the goal is most apparent in the clear decrease in the amount of capital expenditure on the Seoul-Gyeonggi region, while the amounts of local tax revenue from various regions remain constant. In the meantime, Seoul-Gyeonggi's shares have increased in both the gross regional domestic product (GRDP), which reflects the workings of market economy principles, and in the amount of capital stock that is subject to the economy of scale and direct support from the government. The region's share of the national population, which sums up these economic effects, also increased from 45.5 percent in 1997 to 49.3 percent in 2012.

12) See the Appendix for the level variables of the major indicators

〈Table III-6〉 **Capital Stock by Region and Year**

(Unit: KRW 1 billion)

	1997	2000	2005	2006	2007	2008	2009	2010
Seoul	58,856	82,429	129,186	139,908	151,212	157,374	163,789	170,275
Busan	19,357	27,733	45,858	49,971	54,581	57,119	59,795	62,090
Daegu	14,402	21,314	35,237	38,124	41,307	42,391	43,434	44,742
Incheon	15,892	25,637	38,422	42,440	46,808	49,197	52,062	54,829
Gwangju	7,293	10,871	18,028	19,807	21,723	22,438	23,053	23,694
Daejeon	9,309	13,994	23,525	25,569	27,640	28,277	29,067	29,954
Ulsan	7,233	9,962	17,374	19,364	21,834	23,299	24,488	25,542
Gyeonggi-do	50,896	80,312	143,279	159,090	176,576	186,075	197,595	208,116
Gangwon-do	24,910	38,323	68,380	75,154	82,796	84,601	86,839	88,886
Chungcheongbuk-do	18,581	28,592	48,940	53,548	58,535	59,934	61,805	63,812
Chungcheongnam-do	27,864	40,976	67,650	74,138	80,958	83,921	87,170	90,762
Jeollabuk-do	24,080	35,228	57,766	63,027	68,618	70,578	72,989	75,257
Jeollanam-do	30,082	43,774	73,798	80,595	88,356	91,885	95,995	99,759
Gyeongsangbuk-do	41,956	58,449	96,836	105,101	113,730	116,557	120,019	124,177
Gyeongsangnam-do	38,356	53,546	88,129	96,133	105,168	108,906	113,271	117,599
Jeju-do	5,555	7,668	12,391	13,424	14,555	14,999	15,622	16,230
Total	396,619	580,810	966,805	1,057,399	1,156,401	1,199,559	1,249,001	1,297,735

〈Table III-7〉 **Seoul-Gyeonggi vs. Rest: Distribution of the Major Indicators in 1997, 2005, and 2012**

(Unit: %)

		GRDP	Population	Local taxes	Capital expenditure	Capital stock
1997	Seoul-Gyeonggi	47.1	45.5	54.8	36.6	31.8
	Rest	52.9	54.5	45.2	63.4	68.2
2005	Seoul-Gyeonggi	48.9	48.1	57.6	36.0	32.2
	Rest	51.1	51.9	42.4	64.0	67.8
2012	Seoul-Gyeonggi	48.2	49.3	54.7	30.9	33.4
	Rest	51.8	50.4	45.1	69.1	66.6

Note: The capital stock for the year 2012 is actually based on the measures from 2010.

C. Distribution of GRDP by region

The regional development policy and the local government finance support system in Korea strive to ensure more balanced development of all of the country's regions. Private-sector capital flows and market mechanisms, if left unregulated, tend to concentrate in highly populated areas or regions. Therefore, as a counter to this, the local revenue sharing program and diverse government subsidies have heavily favored less populated regions and cities outside of Seoul and Gyeonggi-do.

To determine whether these measures of direct governmental intervention have indeed led to the expansion of production bases in all the regions of Korea,

〈Table III-8〉 **Regional Shares in Major Indicators, 2012**

(Unit: %)

	GRDP	Population	Local taxes	Capital expenditure	Capital stock
Nationwide	100.0	100.0	100.0	100.0	100.0
Seoul	22.8	20.0	24.9	8.1	13.1
Busan	4.9	6.9	6.3	4.6	4.8
Daegu	3.1	4.9	3.8	3.1	3.5
Incheon	4.5	5.6	5.1	4.5	4.2
Gwangju	2.1	2.9	2.2	1.7	1.8
Daejeon	2.2	3.0	2.4	1.8	2.3
Ulsan	5.1	2.3	2.8	1.9	2.0
Gyeonggi-do	20.9	23.7	24.6	18.3	16.1
Gangwon-do	2.5	3.0	2.5	6.7	6.9
Chungcheongbuk-do	3.2	3.1	2.7	4.6	4.9
Chungcheongnam-do	6.9	4.0	4.3	6.9	7.0
Jeollabuk-do	2.9	3.7	2.7	6.2	5.8
Jeollanam-do	4.7	3.7	3.0	9.6	7.7
Gyeongsangbuk-do	6.2	5.3	4.6	10.4	9.6
Gyeongsangnam-do	6.9	6.5	6.5	9.1	9.1
Jeju-do	0.9	1.1	1.3	2.5	1.3

Note: The capital stock figures are based on the measures from 2010.

we need first to review the GRDP statistics. Between 1997 and 2012, all regions' respective simple shares in the GRDP remained almost the same. The yearly growth rate rose to 10.9 percent by 2002 and remained around 10 percent until 2005 or so. However, it declined to 4.9 percent in 2006 and continued to drop in the aftermath of the global financial crisis, except when it briefly spiked back up to 10 percent in 2010 due to an increase in the fiscal investment.

Seoul-Gyeonggi's share in the GRDP rose from 47.1 percent in 1997 to 48.2 percent in 2012. However, upon a closer look, we can see that Seoul's share rather dropped by 2.3 percentage points over the same period, while Gyeonggi's increased by four percentage points. After Ulsan was declared a metropolitan city in 1998, the shares of Gyeonggi-do and Chungcheongnam-do slightly increased by 2.3 percentage points, while the shares of other regions remained constant.

4 International context

South Korea spent approximately 4.0 percent of its GDP on capital expenditure for local governments and development, which is significantly higher than the OECD average of 2.4 percent. The rise in capital expenditure was the norm worldwide in 2009 as governments struggled to cope with the economic crisis. Nevertheless, Korea remains outstanding in terms of spending on regional development.

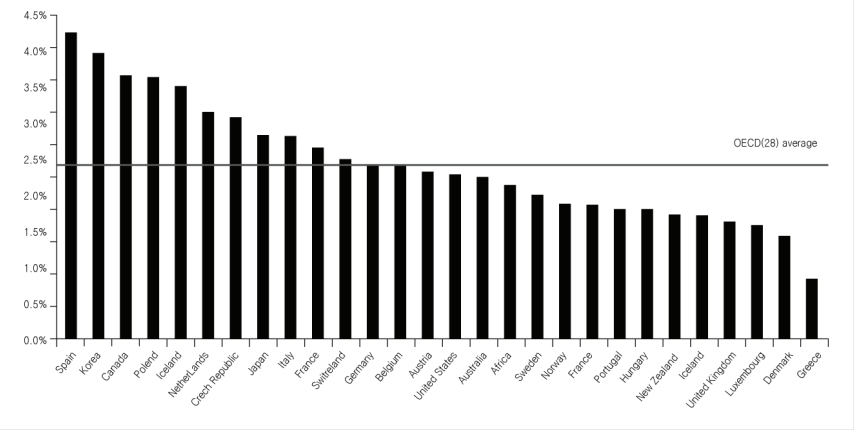
Major member states of the OECD spent the greatest portions of their local government capital expenditure on economic affairs, education, environmental protection, and medical care, in that order. In Korea, the capital expenditure on welfare and social services is steadily rising. Korea also leads its fellow OECD member states in terms of the general government expenditure known as "public investment."[13] In 2004 and 2011, local governments in Korea

13) "Public investment" combines the gross fixed capital formation and capital expenditure. It is an indicator of public–sector investment that is frequently used in international comparisons. (See the system of categorization, based on the EURO stat concept, in OECD at a Glance [2011], p. 58.)

collectively contributed to public investment amounting to 60 percent of the public investment by the central government, which is a ratio on a par with the OECD average. In conclusion, the Korean government remains heavily invested in regional development, much of which is pursued through spending by local governments.

No clear correlation is observed between the transfer of fiscal resources and capital expenditure in major member states of the OECD. The governments of France, Spain, Ireland, Portugal, and Czech Republic spend about half of their transferred fiscal resources as part of capital expenditure, while other states spend them on welfare and other types of spending. In other words, even in states with relatively high levels of fiscal resource transfers from central government, the level of capital expenditure is not necessarily high. Capital expenditure by local governments rather corresponds more clearly to the economic growth rate and the decentralizing activities of central government. In *WDR* 2009, the World Bank and the EU named Ireland and the Netherlands, respectively, as exemplary countries in this regard.

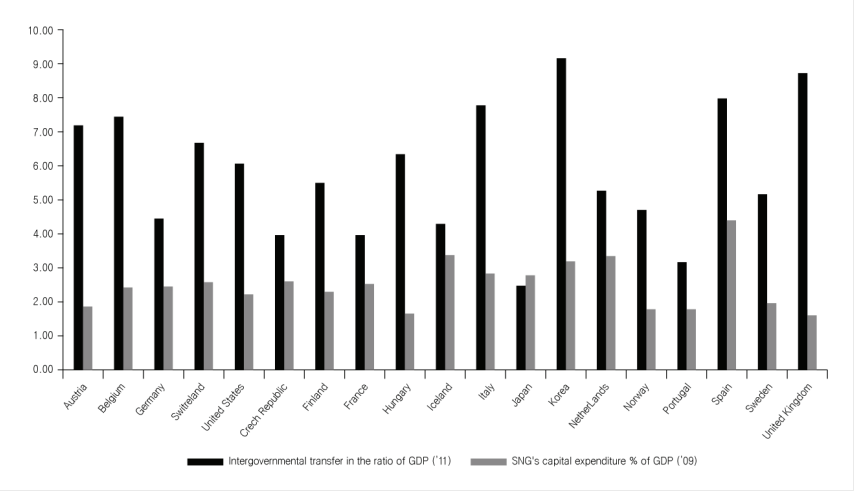
[Figure III-8] SNGs' Capital expenditure as a Percentage of GDP, 2009



Source: OECD (2011), "Making the Most of Public Investment in a Tight Fiscal Environment Multi-level Governance Lessons from the Crisis," *OECD National Accounts 2009*, p. 31 (Figure 1.6).

[Figure III-9] Transferred Fiscal Resources and Capital Expenditure in Major Economies

(Unit: %)



Sources: OECD (2011), "SNG's Public Investment as a Percentage of GDP," *OECD Regions at a Glance 2011*.
SNG's capital expenditure % of GDP (2009): OECD (2011), "Making the Most of Public Investment in a Tight Fiscal Environment Multi-level Governance," *Lessons from the Crisis*
Intergovernmental transfer in the ratio of GDP (2011): OECD (2011), OECD *National Accounts*

Ⅳ

Regional Development Policies Worldwide: Characteristics and Outcomes

1 United States

The United States is a federation of 50 states and possesses institutions that are irreconcilably different from those found in Korea, particularly those concerning intergovernmental finance. As a given nation's regional development policy strives to ensure balanced development of all the given national territories, we need to decide whether to target our analysis on the federation or the individual states. Truth be told, the fact that the United States is a federation has precluded it from the analyses of international policies on regional development in studies conducted in Korea.

The latest global financial and economic crisis, however, has compelled policymakers and researchers worldwide to find a new paradigm, with the governments of a number of countries emulating tried and tested examples of other countries with which they share few institutional similarities.

Until now, U.S. regional development policy has been considered strictly the mandate of the state government, with the federal government making little to no intervention. OECD (2010) characterizes this American arrangement with "no overarching framework, separate laws for different federal programs, [and] State-level regional policymaking" (p. 303). Perhaps the only significant regional development program involving the federal government is its partnership with the 13 Appalachian states to promote the development of the region.[14] Therefore, we cannot apply a consistent standard or formula to estimate the

total amount of regional development budgets executed by the federal and state governments in the United States. Drabenstott (2005, 2006) has estimated that approximately USD 188 billion went into regional development (with over 90 percent of the money supporting local infrastructure and education) in the first several years of the new millennium, amounting to 25 percent or so of federal spending during the era.[15] Most of the support that the U.S. federal government provides for regional development is meted out via such agencies as the Although the EDA has recently introduced new programs, such as occupational training for raising local employment rates, these programs still occupy only a minor share of the regional development projects supported. Meanwhile, the Community Development Block Grant (CDBG) program, a leading regional development program in the United States, saw its budget cut by over 20 percent over the last decade.

In sum, regional development has not been a major policy concern for the U.S. federal government until very recently, as the matter has been treated as falling within the exclusive purview of state governments. Drabenstott (2006) remarks that, "there is no definitive list in Washington of economic development programs," and he strongly criticizes this current state, emphasizing the need for the federal government to outgrow its role as a mere "referee" on local economic development and to start intervening actively and efficiently. The U.S. Government Accountability Office (GAO, 2000) has thus set out to expand the outward scope of the federal government's powers on the regional development policy by redefining the types and nature of projects serving regional development.

The first breakthrough came after more than a decade. The "Strong Cities and Strong Communities: SC2" program, introduced under the first Obama administration in 2011, represents the first instance in American history in which

14) "Different federal departments and agencies may work with the state government or have their own regional representatives offices, each with a different catchment area...." OECD (2010), p. 303 (Table 2.32).

15) Drabenstott's analysis is based on the budget estimates from the White House's Office of Management and Budget (OMB). "There is no unified budget for regional and community economic development or tracking of overall spending in this area." Drabenstott (2006), p. 120.

regional development has been explicitly endorsed as part of a presidential agenda. The new program also introduced a "new model of federal-local collaboration," highlighting the federal government's lead over its implementation.

The purpose of the SC2 program is to prevent the further decline and deterioration of small and middle-sized towns under the chronic pressure toward recession in the U.S. economy. Representing President Obama's commitment to enhancing the competitiveness of American cities, the program has been enjoying even greater support and attention since he won election to a second term. As urban policy has become a new central issue on the White House's agenda, HUD and other related organizations have experienced a surge in their capability and popularity.[16] However, we have yet to see how the program will ultimately pan out, as it is an untested precedent and its aim of stopping both the deterioration and sprawl of small-to-medium American cities will certainly take some time to materialization.[17]

The SC2 Council named 13 cities in 2011 for management, mainly focusing on utilizing and expanding local networks of industrial-academic collaboration. The program differs from its counterparts in other major economies in that it prepares for long-term projects on the basis of scientific and empirical analyses from scholars. Another key difference stems from the fact that the SC2 program has outgrown the conventional framework of construction-heavy investment, designed instead to achieve certain policy values such as creating more jobs and supporting the middle class. In addition to the 13 cities chosen in 2011 (including Chester, PA; Cleveland, OH; Detroit, MI; Fresno, CA; Memphis, TN; New Orleans, LA; Youngstown, OH; Greensboro, NC; Hartford, CT; and Las Vegas, NV), the council named two more in 2014.

As we have seen so far, U.S. regional development policy has until very recently been a matter of state government policymaking－clearly contrasting

16) The SC2 Council is co-chaired by the Secretary of HUD and the Assistant to the President for domestic Policy. See "Strong Cities, Strong Communities Initiative: 1st Annual Report," White House Council on String Cities, Strong Communities, April 2013, p. 6 (fn. 6).

17) The discussion on the HUD is based on an interview with an expert

the centralized pattern in Korea. The latest global economic crisis, however, worsened inter-city and inter-regional inequality in the U.S., and that prompted the federal government to actively incorporate regional development into its policy agenda and thereby introduce the SC2 Initiative.

The U.S. federal-regional development policy shares a number of similarities with Korea's "Innovative City" (Sejong) program and the "Local Innovation Account" that was added to the SABND under the Participatory Government (i.e., Roh Moo-hyun administration) several years ago. The majority of projects supported by the Local Innovation Account were administered by MoE and MOLIT, and the majority of beneficiaries were major regional universities and colleges. The Local Innovation Account, like the SC2, involved designating specific cities and enhancing the industrial-academic collaboration projects of the city's major local universities, with a view to fostering the universities as new centers of research and development. The Local Innovation Account also accompanied a governance structure similar to that of SC2, featuring the Presidential Committee on Balanced National Development, along with a council of representatives from various ministries and departments, local governments, and universities.

The Lee Myung-bak administration subsequently merged the Local Innovation Account with the Metropolitan and Regional Account, although the Innovative City program continues to operate. Even before the merger, however, the Local Innovation Account was criticized for a number of inherent problems, especially its failure to distinguish itself from existing MOLIT and MoE projects and its resistance to effective performance monitoring and evaluation.

The U.S. federal government similarly ran into much resistance and opposition when it separated the Transportation Bureau from HUD and relocated its headquarters to the outskirts of Washington D.C. in the interest of balanced development. This move bears striking resemblance to the Roh administration's attempt to move key political and institutional functions from Seoul to a new "administrative capital" named Sejong City. In other words, a number of ambitious regional development initiatives that the White House has introduced in recent years are reminiscent of attempts made in Korea by the Roh administration several years ago. We Koreans therefore have a strong interest in how the U.S. initiatives will evolve in the future, particularly in how their

unique institutional and governance settings will contribute to the outcome. In Korea, the Local Innovation Account has ultimately become a failure, while the Innovative City (Sejong) project has been mostly about relocating the physical facilities of public institutions.

In identifying the difference between SC2 and Korea's similar efforts, we can delineate key implications for the future of Korea's regional development policy. First, SC2 has involved the development of a new intergovernmental finance system featuring diversified and stable sources of fiscal resources. By opting to directly fund regional development projects, the federal government has effectively preempted the need to involve intermediary departments and state governments. This is something that cannot be done in Korea, as all support for local government finance must be based upon specific statutory grounds that require the central government to deliver fiscal resources to cities and communities via metropolitan and regional governments. There is a presidential committee overseeing the matter, but the committee lacks its own fiscal resources and instruments. As a result, resources from both the Regional Development and Local Innovation Accounts are provided for cities and communities in much the same manner as general subsidies. In the U.S., on the other hand, the SC2 Council wields a comprehensive range of authorities regarding all components of the program, complete with a purse kept strictly separate from state government accounts and budgets. Prior to SC2, there was no intergovernmental finance and transfer system to speak of, which is why the Obama administration has been able to introduce such sweeping changes without readjusting and recalibrating existing institutional checks. In Korea, however, the central government has long presided over quite a complex and expanding system of fiscal redistribution, with well-established institutions constituting an intergovernmental finance system that is resistant to change. Moreover, in the U.S. there are Community Development Financial Institutions (CDFIs) that also serve as key channels through which private-sector financial resources can move. Local and state governments in the U.S. provide ready bridges to these private-sector resources in promoting and undertaking regional development projects.[18)]

Second, unlike its Korean counterpart, the U.S. federal government has been monitoring and evaluating the progress of the program on a yearly basis.

The SC2 policy involves identifying and promulgating "best practices" through the educational and training programs aimed at municipalities. Although there are numerous systems of performance evaluation in use in Korea, fiscal performance evaluation tends to focus on the ministries and departments that give or distribute subsidies, giving short shrift to local governments that actually receive and use such subsidies. Because the fiscal performance of local governments is evaluated not for the goal of determining the cost and effect of subsidy programs, but merely for the purpose of being added to fiscal analyses, the actual progresses and outcomes of local governments' projects are not disseminated sufficiently. The accounting and performance evaluation of the SAMCP is plagued with the same problem. Although the PCRD does evaluate the performances of the municipal and district projects it oversees, the number of such projects is too small to exert substantial impact on the policy overall.

Third, the SC2 program also provides different projects for different cities. The project for Detroit, for instance, involved retraining and supporting the reemployment of automotive industry experts amid the decline of the city's auto manufacturing industry. The project for New Orleans involved expanding the scope of medical care coverage for eligible residents. And the project for Cleveland required participants to develop new business plans, focusing on core and emerging markets, on the basis of the existing governance structure. The SC2 program, in other words, set out to identify the particular needs and characteristics of the chosen cities and tailored the provision of resources and assistance accordingly. In contrast, it is doubtful that the Korean Innovation City program has provided all the necessary and required measures with sufficient flexibility and efficiency. The statutory requirements, the complex web of different departments and their interests, and the reluctance of local governments to provide extensive financial assistance tend to limit policymakers in Korea from introducing diverse projects akin to their U.S. counterparts.

Fourth, the U.S. government also assigned skilled federal government

18) In the case of Cleveland, the SC2 team connects the government development teams with available funds or investors in the private-sector banks as well as with other channels of public fiscal support in addition to the direct support provided by the federal government. See the White House's *Annual Report*, pp. 25 and 29.

employees to the administration of SC2 projects, giving them time and opportunity to develop a good understanding of their respective projects and become central players in long-term regional development policy. The future success of the SC2 policy depends on the capabilities of these people. This kind of personnel structure is almost unheard of in Korea, where the implementation of a policy program involves setting up the highest-ranking committee and leaving practical and routine tasks to employees of varying levels of skill and experience, who are "dispatched," on a temporary basis, by relevant ministries and departments. The presence of these dispatched employees makes it nearly impossible to preclude conflicts of interests among diverse ministries and departments involved. It is unthinkable in Korea for a policy program committee to actively recruit expert policy operatives from outside represented ministries or departments and accord them the respect and treatment they deserve as key components of a given policy program.[19] Based on the U.S. experience, Korea should learn to develop and secure policy operatives and personnel with sufficient expertise and skills.

This study reaches a favorable assessment, overall, of the recent evolution of the U.S.'s federal policy on regional development. Although there will be trial and error and a learning curve in the implementation of the policy, it still holds much promise, given its necessity, the specificity and clarity of its objectives and methods, the active and cooperative inclinations of its participants, and the sustainability of its available fiscal resources. However, as the SC2 policy tends to be perceived as a signature policy of the Obama administration, we might wonder whether future administrations will be willing to sustain it. Even in the United Kingdom, it is customary for a new government to discard policies of its predecessor without a thorough review of their outcomes and progress. The Lee Myung-bak administration in Korea, for its part, also refused to inherit the goal of balanced national development touted by the prior Participatory Government.

19) "The SC2 Council is exploring avenues with senior leadership at various agencies to make future SC2 team positions for federal staff more widely available as a complement to recruit, retention, and skills development strategies..." The White House's *Annual Report*, p. 31.

The constituents of target regions tend to be the political bases upon which local government policymakers depend. This inherently political nature of regional development policies limits and even undermines the sustainability and durability of their future prospects. Nevertheless, the rising fiscal pressure in the aftermath of the global economic crisis continues to prompt many states around the world to experiment with regional development policy.

2 United Kingdom

The United Kingdom is a nation that encompasses four constituent countries, i.e., England, Scotland, Wales, and Northern Ireland. The referenda of 1997 organized by the Labor Party government significantly enhanced the respective autonomies of these constituents and prompted balanced regional development to emerge as a major issue of decentralization. The OECD and other policy researchers tend to confine the UK's regional development policy to England only.[20] The UK's Regional Development Agencies (RDAs), frequently discussed in numerous studies in Korea, provided the direct model for Korea's own regional development policy of the Presidential Committee on Balanced National Development under the Participatory Government

The RDAs ended in 2012 after the Conservative government came to power and were replaced with local enterprise partnerships (LEPs), running on a Regional Growth Fund (RGF) that came to only a quarter of the most recent RDA budget. The combined RDA budget, amounting to GBP 2.2 to 2.3 billion per year since 2005, had already been cut drastically to GBP 1.4 billion by 2010-2011. Whereas RDAs were effectively recognized as organizations under the law and given substantial organizational and budgetary autonomy in the form of the single-pot budget support from the central government, the LEPs were rather provisional and were forced to secure their own operational funds without

20) The name of the program for elsewhere in the United Kingdom, such as Scotland and Wales, is the Regional Selective Assistance Policy. England, moreover, is home to 84 percent of the total population of the United Kingdom. See OECD (2010), p. 293.

support and subsidies from central government.

On the surface, it may appear that a mere change of government has led to the replacement of the RDAs with the LEPs. However, in delving more deeply we discover the true significance of the metropolitan governance structure－centered on the RDAs－in the United Kingdom. Regional development policies are, by nature, swayed largely by the political considerations and calculations of the governing party. The organizational form of regional development policies therefore may be redefined in diverse ways, but the success or failure of such policies ultimately depends upon the characteristics of the political institutions and arrangements of a given society.

Now, let us examine the differences between London, with its own RDA, and other regions lacking such a governmental structure. Parliament installed nine RDAs in 1999 and 2000, thus revising the spatial scope of the Government Office for the Regions (GOR) that had previously been defined by the Conservative government, and added a new component of public-private partnership. The Labor Party, in power at the time, originally envisioned a metropolitan and local government system based on the RDAs and the GOR and with members elected by constituents in England. The plan, however, was thwarted by 78 percent of voters voting "No" in Northeastern England in November 2004. The plan for the Greater London Authority (GLA), on the other hand, successfully gained majority votes from the electorate and moved the powers that be to decide upon and enforce transportation, spatial development, economic development, and environmental policies in Greater London.[21] The RDA plan therefore lost ground for implementation in all of England except for London.

Some scholars have blamed this failure on the deep-rooted tendency toward centralization in English politics, as well as on the half-hearted manner with which Parliament promoted its plan. However, a more fitting interpretation would be that the failure reflected the fundamental characteristics of

21) Jeong Jun-ho (2011), Cabinet Office; Building the big society, p. 32. (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/78979/building-big-society_0.pdf)

intergovernmental finance in England. All metropolitan and local governments in the UK－with the notable exception of London－relied exclusively on revenue and fiscal resources transferred from central government, and therefore they wielded only limited powers. London, by contrast, was capable of funding its own activities, and the RDA model represented a chance to enhance its autonomy in relation to the central government. The success of the RDA/LEP model, therefore, depends on a multiplicity of factors outside the policy itself, such as the industrial and economic structure of a given region, the size of a given population, and the nature of intergovernmental fiscal relations. Thus success or failure of the current LEP model will also depend on the readiness and conditions of the regions subjected to it and not on the inherent characteristics of the program or its organization.

The two major parties in the United Kingdom have sharply clashed over how to define the spatial scope of the regional development policy. Whereas the Conservative Party envisions a minimal scope, consistent with its belief in small government, utilizing other resources and organizations available at the local level, the Labor Party pursues a regional development policy with a greater scope, at the metropolitan and regional levels. The neoliberal framework of the Conservative government, intent on redefining the role of the government and emphasizing decentralization and localism, will likely produce quite different results via the LEPs.

While political and ideological tendencies certainly exert impact on regional development policy in the United Kingdom, the more fundamental source of change underlying the country's evolving local development policy today is the mounting fiscal pressure to cut spending on regional development. The LEPs significantly differ from the RDAs in that the former are required to find and secure the financial resources they need, mainly from social enterprises and other private-sector entities. Thus the success or failure of spatially defined metropolitan or regional development projects ultimately depends not upon the goals and ideals of policy, but on the characteristics and competitiveness of each region. Regions in the United Kingdom other than the fiscally self-sufficient ones like London will therefore likely remain in the traditional scope of local development policy. Cities and regions with growth potentials, however, should establish new partnerships through LEPs and other

〈Table IV-9〉 **RDAs vs. LEPs: Similarities and Differences**

	Difference	Similarity
Origin	RDAs were legal bodies that comprised elected metropolitan/regional officials. LEPs are councils.	
Roles and purposes	– LEPs involve a greater spatial scope. – RDAs were instruments of the central government's policy (and had many of their functions revoked by the central government subsequently).	– Both RDAs and LEPs strive to revitalize local economies and redefine the government's role in readjusting economic cycles (RDAs, by promoting more balanced growth, and LEPs, by encouraging private-sector participation). – Both RDAs and LEPs were based on a concept of "region" defined not in terms of market functions, but in terms of administrative units.
Management and accountability	– RDA Committee members were appointed by central government. LEPs have greater leeway in defining membership qualifications. – RDAs were accountable to central government and also subjected to local monitoring.	– Both RDA and LEP Committees comprised government and private-sector representatives capable of providing leadership over projects.
Funding and resources	– RDAs had access to budgets and subsidies set aside by central government to serve specific purposes. LEPs receive resources according to principles of free and fair competition. – RDAs enjoyed much greater resources (up to GBP 2 billion a year and the hiring of 2,000 persons).	– Both RDAs and LEPs run on single-pot funds consisting of budgetary contributions from diverse ministries and departments.
Outcomes	RDAs utilized not only a performance evaluation system approved by central government but also an organizational performance evaluation model based on independent assessments. LEPs have freedom to decide which evaluation model to adopt.	

Source: Philip Amison (2013), "Sub-national economic development policy in England since 1999: A comparison of Regional Development Agency and Local Enterprise Partnership 'models'", SURGE Working paper series, Working paper no.12, Coventry University, p. 22 (Figure 4).

such organizations. Apart from these, there are other rural or underdeveloped towns that may still require support from the central government. Considering this disparity among regions, the LEPs that allow central government to retain most powers concerning regional development may work better for underdeveloped regions than the more autonomy-conscious RDA model. \

The cases of the United States and the United Kingdom overlap with Korea's experience to a certain extent, and carry significant policy implications for Korea's future. The balanced national development policy of the past Participatory Government in Korea, involving the Local Innovation Account and the Innovative City Project, overlaps significantly with the United States' current SC2 policy. The "metropolitanization" policy of "5+2," left somewhat vague since the Lee Myung-bak administration, shares similar concepts with the UK's RDA model, bearing significant implications for the future trajectory of the Park administration's "neighborhood-centered" right-to-welfare-and-prosperity programs. In all three cases, we can see that regional development policies evolve over time in response to the tides in political ideologies, the extent and level of decentralization, and the social and economic institutions and competitiveness of target regions and communities.

Studies in this regard summarize the implications of these foreign cases on the future trajectory and aims, the monitoring function, the metropolitan and urban organizations, and the metropolitan-urban relations that are the subjects of the Korean regional development policy.[22] The current debate on the fiscal policy for regional development is centered on fiscal decentralization (i.e., whether to raise the local consumption tax rate or the local revenue sharing rate, or both) and the reform of the SARD.[23] However, little attention is paid to the issue of whether and how to make use of private-sector financial resources in support of regional development. As the amount of fiscal resources for regional development continues to dwindle in the majority of OECD member states, numerous governments worldwide are intent on looking for and securing new

22) Bae Jun-gu (2013), "New Administration's Local Development Policy," Spring Academic Conference

23) PCRD (2012), "Subcommittee Research Plan for Fiscal Support for Local Development," *Local Development Forum Review Meeting*

resources in the private sector.

As an important part of the national policy agenda, Korean regional development policy depends crucially upon the fiscal support that the central government provides, which is why policymakers on the national level are having such a hard time making meaningful cuts to fiscal support. However, international case studies reveal that the Korean government needs to begin cutting fiscal support for regional development and search for private sector substitutes instead. It is simply no longer possible for intergovernmental finance alone to sustain regional development in today's increasingly unpredictable economic environment. Public-private partnerships and other such channels for securing private-sector financial resources will not constitute abandonment of regional development policy. Rather, they will represent the ability of the Korean government to make necessary changes and readjustments in order to enhance the long-term sustainability of regional development policies.

V

Empirical Analysis of Inter-Regional Migration and Regional Economic Growth

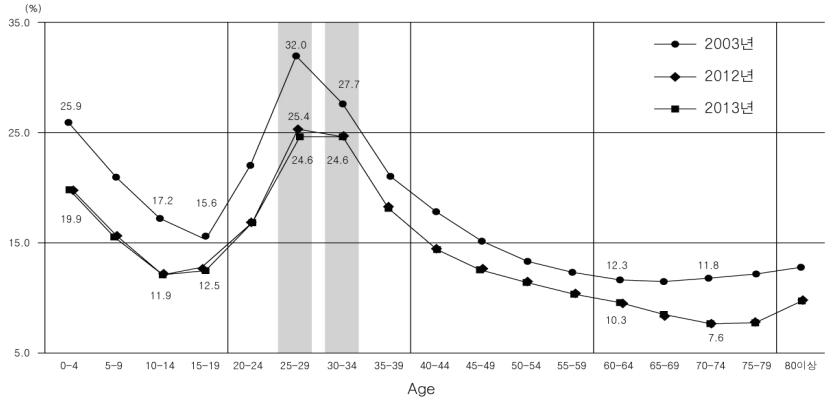
1 Causes of migration and their implications for the public fiscal policy

According to an analysis from Statistics Korea, the main cause of an increase in population in a given region is employment or jobs, while the main causes of a decrease are (shortages of) housing and family affairs. Together these three factors account for 83 percent of all demographic movements in Korea, while transportation, culture, the availability of amenities and convenience facilities, health, and residential/natural environments account for less than 20 percent. Among all age groups, people in their 20s are the most mobile. However, the mobility rate of 25-29 year olds decreased by more than seven percentage points between 2003 and 2013.

This pattern is nothing unique to Korea, as it is also observed in both the United States and the United Kingdom. Migration researchers point out that the onset of the latest global economic crisis has increased the rigidity of job markets worldwide, lessening inter-regional migration on the whole. Some studies on migration patterns in the United States also find the cause for less migration in the increasing volatility of housing prices.[24] The migration rate

24) Molloy et al. (2011), pp. 175 and 192.

[Figure V-1] **Demographic Movements of Different Age Groups, 2003-2013**



Source: Statistics Korea (2013), *Demographic Movement Statistics 2013* (Figure 2).

in the United States is higher than its counterpart in Europe due to the greater instability of the American job market. This could mean that the European jobmarket is relatively more settled and/or that Europeans tend to stay in the same jobs for much longer than Americans.[25] Bonin et al. (2008) provides an empirical analysis demonstrating the significant correlation between the migration rate in a given society and the frequency of job changes over one's lifetime in that society. Other studies show that the United States is almost the only exception showing a decline in the inter-regional migration rate; that the migration rates in Denmark, Hungary and Finland are consistently higher than those in the United States; that the migration rate across Europe was relatively high in the first several years of the 21st century; that the inter-provincial migration rate in Canada is lower than the inter-state migration rate in the United States, and so forth.[26]

25) Oswald (1999)

26) "...higher migration rates in the United States may indicate lower frictions in the labor market as compared to Europe. Thus, lower migration rates might signal an increase in labor market frictions, although the direction of causality is not clear...." p. 194.

These studies confirm that, aside from the impact of the latest global economic crisis, the high percentage of people in their 20s in a given population and the flexibility of a job market are reliable indicators of high migration rates. Like the United States, Australia, and New Zealand, Korea today is also receiving an increasing number of immigrants from overseas.

These studies show that the major causes of migration include changes in the macroeconomic environment and their impact on the job market and local or regional conditions. In other words, they explain much of migration in terms of the market effect. However, we need also to reveal the fiscal policy effect that contributes to or causes migration. More specifically, we need to determine whether and what kinds of fiscal policy measures can induce increases or decreases in the population of a given region. Analyses adopting this approach mostly focus on specific cases, such as Canada, with its sizable amount of fiscal equalization resources, and Sweden, with local governments possessing significant degrees of fiscal responsibility for meting out social and welfare services. In adopting the fiscal policy approach, we must keep in mind that no simple comparisons can be made among countries with significantly different sizes of populations, national territories, or labor market conditions.

For instance, Molloy et al. (2011), in a study on the high migration rate in the United States, concludes that countries such as the United States with such high migration rates need not invest a large amount of fiscal resources in public and social services, as the given population holds little expectations of such services. Such a conclusion, however, is excessively focused on the superficial phenomenon of migration patterns, without exploring more deeply into what such patterns may imply for the current state of welfare services.

Moreover, the high migration rate in the United States may be more a result of certain exceptional characteristics of the country－e.g., the continued influx of immigrants from overseas, the sustained economic growth, the ethnic diversity of the population, and the vastness of national territories－than a universal phenomenon. It may hold little applicability to European countries and Korea where balanced national development is essential part of the national policy agenda. Canada, occupying the other half of North America, implements a fiscal policy strikingly different from the American one, and thus it is much more familiar with the concept of fiscally induced migration.

The empirical analysis in this section strives to verify whether there is any significant causal correlation between the steady decline in the migration rate in Korea and the fiscal policy. While there can be multiple factors or causes of decline in migration—such as the rise in the income level, the economic recession, the growing instability of housing prices, and the aging population—ur concern is to determine whether the policy of fiscal support for local governments and development has played any role in the phenomenon. From the redistribution perspective, such intergovernmental fiscal coordination reflects the underlying assumption that its goal is to provide social and public services in a given underdeveloped region so that it would be more rational for resident to stay in the region and maintain a certain quality of life than to move in search of jobs and pay the high cost of migration. Our empirical analysis therefore starts from the hypothesis that Korea's current intervernmental fiscal coordination system, underpinned by local revenue sharing and subsidies from central government, has in fact contributed to the drop in the country's inter-regional migration rate.

2 Empirical analysis of inter-city and inter-province migration

A. Analysis models[27)]

The following analysis appropriates a model of analysis developed by Mills et al. (1983), which has been repeatedly used in subsequent studies, including Watson (1986), Kim and Jang (1997), and Kim (2008 and 2013). The model assumes that an individual considering migrating to another region chooses that region based on an estimation of the benefits and costs involved. The utilities that such individuals consider are the level of the expected income (I), the availability of public goods in the given locale (G), and the availability of housing (H). The utility function for such individuals is therefore expressed as follows:

27) The framework for the analysis herein is a reformulated version of the one found in Kim (2008)

$$B = B(I, G, H) \tag{1}$$

The "I" is determined on the basis of the average income level and the employment rate of the region being considered. The "G" includes both the variables dependent on local governments' spending (e.g., availability of waterworks and sewage facilities, roads) and the variables dependent on the central government's spending (e.g., education). As for public education, the central government provides much of the required resources, but the individual considering migration tends to perceive it as part of the public and social services available in the desired region, which is why it is included as part of "G." This study treats the investment income in housing ("H") as a separate variable. Individuals considering migration will necessarily weigh the costs of possible choices. The cost of residence ("R") is therefore made up of such variables as the amount of monthly or yearly rent. The "T" stands for the taxes or prices on the local public goods and services provided. We can estimate the net benefits and costs for an individual considering migration using the following formulae:

$$C = C(R, T) \tag{2}$$

$$NB = B - C \tag{3}$$

An individual considering migration will also estimate the expected future benefits and costs of either staying at the current location ("i") or moving to a new location ("j") at a certain point in time in the future ("t"). When $E[NB_{ij}] > 0$, the individual will move from "i" to "j" according to Formula (4). The linear equation (Formula (6)) for estimating the migration function (Formula (5)) is as follows:

$$E[NB_{ij}] \equiv E[NB_j] - E[NB_i] = f(EI_i,\ EI_j,\ G_i,\ G_j,\ H_i,\ H_j,\ R_i,\ R_j,\ T_i,\ T_j) \tag{4}$$

$$M^t{}_{ij} = F\left(\frac{EI^{ti}}{EI^{ti}},\ \frac{ED^{ti}}{EDI^{ti}},\ \frac{RO^{ti}}{RO^{ti}},\ \frac{RE^{ti}}{RE^{ti}},\ \frac{LT^{ti}}{LT^{ti}},\ \frac{HP^{ti}}{HP^{ti}}\right) \tag{5}$$

$$M\,i' = \beta_1\ \beta_2\frac{EI_j}{EI_i} + \beta_3\frac{EI_j}{EI_i} + \beta_4\frac{RO_j}{RO_i} + \beta_5\frac{RE_j}{RE_i} + \beta_6\frac{LT_j}{LT_i} + \beta_7\frac{HP_j}{HP_i} + \epsilon_{ij} \tag{6}$$

Consider the models and the anticipated signs underlying our hypotheses. First, according to the classic theory of urban economics originating from the Harris-Todaro model (1970; HT), an increase in expected income is the most important factor prompting migration. As people decide to migrate somewhere else when they expect to earn more income there than they currently do, the sign in front of the coefficient will be $\beta_2 > 0$. Second, the Broadway and Flatters model (2002; BF) explains migration and population concentration as effects of fiscal policies. The variables resulting from the fiscal policy in this model include education, extended roads, capital expenditure, local taxes per capita, and transferred fiscal resources per capita. We can assume that the signs attached to all these variables except the local taxes per capita will be positive (+). In this analysis, we equate the local taxes per capita to the prices of public goods available at the migration destination.

Third, Dusansky and Koc (2007) demonstrate that the greater the returns on investment, the greater the demand for house ownership. The price of housing is seen as a return on investment, unlike the cost of residence. Such returns in investment reflect the fiscal costs and benefits in large cities (i.e., tax revenue per capita subtracted by tax spending per capita). Local taxes are not spent on metropolitan and regional transportation facilities, subway services, and environmental maintenance services in which the central government invests for the benefit of local communities. The fiscal costs and benefits in various regions and communities resulting from national government-led policy projects shape and affect the living environments in these regions and communities (e.g., quality of schools, park services), and they are ultimately reflected in the prices of local real estate properties. Accordingly, the migration and concentration of populations in urban areas indicate that for the same amount of taxes they pay, taxpayers receive public services of better quality (e.g., as in Gangnam-gu, Gwacheon). The quality of public services in these areas further serves to induce greater immigration, exerting an upward pressure on local housing prices. Therefore, we can assume $\beta_7 > 0$. Finally, the Brueckner and Kim (2001; BK) model helps us estimate the residential costs one will likely pay upon migrating into a large city (e.g., rents on houses). The sign attaching to this variable therefore will be negative ($\beta_5 < 0$).

B. Analyzed data

The purpose of this study is to reveal the correlation between the decline in the migration rate and the fiscal policy in Korea over the last 16 years, marked by two major economic crises and sustained decentralization.[28] To this end, we specify and subdivide all the variables involved in fiscal spending, particularly attempting to understand how fiscal resources provided in support of regional development, such as the post-2004 KTX effect and capital expenditure, have affected regional development in the form of inter-regional migration.

The panel data subject to the analysis in this study include the migration of populations among 16 metropolitan cities and provinces over the 16 years from 1997 to 2012.[29] For each of these 16 cities and provinces, there are 15 other possible destinations for migration. Therefore, each year's panel includes 240 samples, and the total number of samples over 16 years amounts to 3,840. As for the dependent variable, i.e., size of migration among the 16 cities and provinces, the data on net migration from Statistics Korea's Migration Statistics were used. The dependent variable used in the empirical analysis was operationalized as the ratio (M^t_{ij}) of the net number of persons moving from Region "i" to Region "j" in a given year ("t") to the total population of Region "i." The greater the population of a region, the greater the net number of new persons migrating to that region. Therefore, to adequately capture qualitative changes in inter-regional migration, we need to use a standardized variable, i.e., dividing the net number of new migrants by the total population of the migration destination, for consistent comparisons.[30] The subscripts "i" and "j" attached to the explicatory variables signify the current location and the future location (i.e., migration destination) of the migrant, respectively. Each explicatory variable has been similarly operationalized and standardized.

The expected income, as an explicatory variable of inter-regional

28) Kim (2008), Kim (2013)

29) The year 1997 was chosen as the starting year because that is when Ulsan, the last metropolitan city on our list, was declared a metropolis

30) Kim and Jang (1997), p. 187.

migration, is measured in terms of real income and the probability of employment. The data on real income by region and industry, indicating "employee income," were obtained from Statistics Korea's Local Income Statistics. First, as for the probability of employment, the employment rate of each week of job hunting, measured by Statistics Korea, was used. The amount of expected income is therefore estimated by multiplying the employee income by the employment rate. Second, the variable of educational opportunity, standing in for the learning environment of a given region, is based on the number of students enrolled in colleges and beyond, as detailed by MoE. Third, for the variable of public goods, the total road networks detailed by MOLIT were used. This study also measures the fiscal policy using the variable of capital expenditure, which is a "net" variable encompassing all of the General Account, the Other Special Account, and the Special Accounts for Public Corporations. The KTX effect, often discussed as the cause of migration in Korea post-2004, is measured using the ratio of the number of passengers boarding and getting off KTX trains in a given region to the total population of that region.

Fourth, the cost of residence, i.e., the cost of entering a large city, was measured using the variable of the official land value.[31] Kim (2013) uses the price of renting houses for two years on a *jeonse* basis, as included in the labor panel on the period up to 2008, and the *jeonse* price index for the period after 2008. In the subsequent section, however, this study uses the cost of housing from the fiscal panel, and therefore there was no need to designate and measure other or separate variables for the cost of residence.

Fifth, for the price of public goods available in a region, the variable of local taxes per capita was used. In theory, the amount of a local tax is equivalent to the price of the public goods uniquely provided in that region. In practice, however, a uniform local tax rate is in use across South Korea,

31) Another variable that may stand in for the cost of entering a large city is the monthly housing rent. However, monthly housing rents vary greatly depending on the size of security deposits required of tenants, and they were extremely difficult to measure with meaningful accuracy. The macroeconomic data – based on statistical surveys of Kookmin Bank and underlying the *jeonse* price index annually updated by MOLIT – indicate only the amount or level of year–to–year variation, without providing a fixed standard variable, and therefore do not adequately reflect the rent trends in a given region

making it impossible to determine which public goods are available in which region by looking at the local tax rate alone. We may more accurately gauge the difference in the amounts of taxes among different regions not by means of tax rates, but by comparing the tax bases, i.e., the amounts of capital gains, of different regions.[32] Extra caution is therefore required in interpreting this particular variable, along with additional research for more appropriate variables on local taxes.

Sixth, the price of housing is regarded as a return on investment and a major factor prompting migration in Korea. This study uses the official land value per square meter (i.e., average land value) detailed by MOLIT. One might wonder why this variable is used instead of the housing price also detailed by MOLIT. This is because details on housing prices up until 2004 for all types of housing, aside from collective ones, lack a sufficient level of accuracy. Moreover, the official land values provide a more consistent standard against which we can compare the 16 cities and provinces.

C. Characteristics of data and methods of analysis

Before proceeding to the empirical analysis, we need to gauge the disparity among the 16 cities and provinces using the Gini coefficients. The inter-regional disparity was most pronounced in terms of the official land value, while the unemployment rate was the variable with the least inter-regional variation. Although the unemployment rate is not explicitly used in this study's analysis, the chance of employment is one of the decisive factors prompting inter-regional migration in Korea, and the unemployment rate therefore provides a useful addition to other variables. The other variables that show manifest inter-regional disparities include employee income and the number of students in college and beyond. The disparity in local taxes and post-2005 property taxes continues to grow, mainly in response to the rises in the level of capitalization

32) See Kim (2010), p. 127: "This may be because the inter-regional disparity in local tax per capita reflects not the difference in local tax rates, but the difference in the amounts of tax burdens that non-residents, including corporations, included in a local tax base are to bear"

〈Table V-1〉 **Basic Data Underlying Post-Standardization Ratio Variables**

Variable	Obs	Mean	Std. Dev.	Min.	Max.
Net migration rate	3,840	0.003	0.0059	0.0001865	0.05
Rate of employee income per capita	3,810	1.04	0.30	0.30	3.38
Rate of students in college and beyond	3,810	2.07	3.37	0.03	33.38
Total road network ratio	3,810	1.78	1.95	0.09	11.14
Capital expenditure ratio	3,840	1.69	1.92	0.06	16.85
KTX ratio	947	3.17	9.25	0	162.22
Official land value rate	3,810	11.50	41.49	0.002	475.57
Local tax per capita	3,840	1.04	0.30	0.39	2.58
Transferred fiscal resources per capita	3,840	2.45	4.96	0.01	8.57

〈Table V-2〉 **Inter-Regional Disparity of the Variables (Gini Coefficients)**

	1997	2000	2004	2005	2006	2007	2008	2009	2010	2011	2012
Official land value (i.e., avg. land value, KRW/㎡)	0.63	0.63	0.65	0.64	0.65	0.63	0.65	0.64	0.65	0.64	0.64
Employee income0 (in KRW 1 mil.)	0.30	0.32	0.31	0.31	0.32	0.36	0.35	0.35	0.35	0.35	0.35
Number of students enrolled in college and beyond	0.27	0.31	0.31	0.31	0.32	0.31	0.31	0.31	0.31	0.31	0.31
Unemployment rate (%)	0.10	0.03	0.03	0.05	0.08	0.05	0.03	0.06	0.04	0.04	0.06
Capital expenditure (in KRW 1 mil.)	0.23	0.24	0.28	0.27	0.27	0.27	0.27	0.26	0.24	0.23	0.23
Number of residents with resident registration	0.26	0.28	0.29	0.29	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Local tax	0.35	0.38	0.38	0.38	0.39	0.38	0.38	0.38	0.36	0.35	0.35
Property tax	0.34	0.34	0.38	0.44	0.44	0.45	0.47	0.46	0.46	0.46	0.45
Resident tax	0.43	0.43	0.42	0.42	0.44	0.45	0.43	0.43	0.44	0.43	0.43
Number of KTX passengers			0.28	0.27	0.27	0.27	0.27	0.26	0.23	0.23	0.23

Note: Local income taxes were used instead of resident taxes in the years 2010 and 2011 due to the reform of the local tax system

and in official land values. The integration of the land and premises tax bases in 2005 has reduced the gap between the property tax rates and the actual prices for which real estate properties are traded, thus raising inter-regional disparity. The variable of capital expenditure shows the least inter-regional variation after the unemployment rate. The number of passengers getting on and off KTX trains in different regions showed little variation, which is surprising because new KTX stations have continued to open throughout Korea since 2004.

The methods of analysis used include the simple ordinary least squares (OLS) based on Linear Equation (6), as well as the fixed-effect and random-effect models. Because, in theory, the error terms of the equations used for estimation reflect both local and temporal characteristics, the fixed-effect model was used separately for the current location and the migration destination of the migrant.

D. Empirical analysis: findings

Model 1 uses the same set of data found in the existing literature to determine any possible trends or changes in recent data. Model 2 takes into account the post-2004 KTX effect. Model 3 includes microeconomic data (i.e., fiscal panel) that reflect income and the capitalization index. The empirical analysis attempted in this study confirms some of the findings of earlier studies but also yields different findings.

The findings are as follows. First, the variable of expected income did not sufficiently explain migration results, clearly contrasting the conclusions of earlier studies as well as the hypothesis of the classical theory of migration. We generally assume that young people in their 20s migrate most frequently in search for jobs, and they are incentivized by greater expected income. In this analysis, however, expected income did not confirm such an assumption and failed to explain inter-regional disparity in employee incomes.[33]

33) The data on employee income in manufacturing used in this analysis may have been faulty. The other income data in the fiscal panel, such as the total income (including business income) and labor income were thus subjected to the analysis, but to no satisfactory answer

〈Table V-3〉 **Hypotheses and Empirical Analysis Findings**

	HT	BF (incl. public goods and fiscal policy)			BK	Capital gains
	Expected income	Educational opportunity	Total capital stock / capital expenditure	Local tax / cost of housing	Jeonse / monthly rent security deposit	Official land value
Hypothesized	+	+	+	−	−	+
Outcome	?	+	+	?	+	+

There are a number of factors to consider in this regard. For one, the aging of the Korean population on the whole may mean that the absolute number of people in their 20s and migrating to other regions is decreasing. Also, inter-regional disparity in the employee income may not actually amount to much in reality, given the expenses and costs of living in certain regions.

Second, the number of students in colleges and beyond acted as a significant factor in migration. Standing in for the educational environment of a given region, the number of students in colleges and beyond, along with other education-related variables such as educational spending, exerts a great impact on migration.

Third, capital expenditure and capital stock, both representing the amount of fiscal resources provided for regional development, both retained a significance level of one percent as explicatory variables, thus confirming the hypothesis that an increase in capital expenditure by a given local government and in the amount of capital stock directly subsidized by the central government will translate－all things being equal－into an increase in the number of people migrating to the given region. Capital expenditure includes spending not only on SOC development, but also on the creation of local facilities for culture, athleticism, and social and welfare services. It is therefore crucial for researchers in the future to clarify and explain the exact nature of the correlation between fiscal efficiency (in expanding capital facilities) and the competitiveness of a given region in relation to migration. As massive public investments in SOC development have also been found to induce immigration, we will also need to analyze the exact impact of capital stock in ensuring balanced development.

Total road networks, standing in for SOC development, also exerted an impact on migration of all types.

The KTX effect, however, failed to serve as an adequate explicatory variable, whether analyzed separately or jointly as part of capital expenditure. Because the KTX effect was analyzed for the years after 2004, there were only 946 samples subjected to analysis. No "straw effect" was found in this framework of analysis, as there appeared to be no KTX effect on migration.

Fourth, transferred fiscal resources per capita were excluded from the list of explicatory variables. Since 2005, these resources have been merged with welfare spending and therefore serve more as "transferred expenses" than as items of capital expenditure. Moreover, most transferred fiscal resources went toward creating new welfare and social service facilities than toward providing cash benefits. Including both variables in the analysis therefore could raise problems of multicollinearity.

Fifth, the greater the difference between the current location and the migration destination in terms of the official land value, the greater the inclination to migrate. This implies that people's expectations of increasing their wealth by moving to a region with more valuable real estate properties could serve to induce migration. Interestingly, the amount of security deposits for housing rentals, included in the BK model, exerted a positive effect contrary to the hypothesis. This may be because such deposits are regarded more as part of the official land value (as benefits) than as costs of migration.[34)]

Sixth, even in this analysis, the local tax per capita was not a decisive factor prompting migration. This is because, as already explained, local taxes in Korea do not serve as prices of public goods, as is hypothesized in the classical theory of migration. So long as the central government holds the power to decide the tax bases and enforce a uniform local tax rate throughout the country, the inter-regional differences in local tax per capita will stem from the differences in the tax bases that capitalize market and public effects. Therefore, we need to use microeconomic data to analyze the costs of housing (including prices

34) The rent variable in the fiscal panel was also subjected to analysis. The resulting sign was negative but not significant enough

of utilities) that may represent the prices of public goods. However, even the inter-regional disparities in the cost of housing were found not to affect the inclination to migrate.

Finally, the "year" variable controlling for the annual decline in the migration rate and the distance between two given regions also explain the downward trend in inter-regional migration in Korea. That is, the greater the linear distance between two given regions, the less the inclination to migrate. The linear distance variable is time-invariant and therefore should properly be

〈Table V-4〉 **Empirical Analysis of Migration among 16 Metropolitan Cities and Provinces, 1997-2012**

Dep.: net migration	Model 1: Macroeconomic data	Model 2: KTX data added	Model 3: Fiscal panel supplemented
Expected income	0.0006(0.84)	0.0011(0.29)	−0.0012(0.21)
Number of students in colleges and beyond	0.00001(0.00)***	0.0003(0.03)**	0.0001(0.00)***
Capital expenditure of local government	0.0004(0.00)***	0.0004(0.00)***	0.0004(0.00)***
(National spending and capital stock)	0.0006(0.00)***	0.0006(0.00)***	0.0008(0.00)***
Official land value	0.0002(0.00)***	0.0002(0.00)**	0.0001(0.02)**
Local tax/cost of housing per capita	0.0020(0.40)	0.0019(0.11)	−0.0017(0.62)
Number of passengers boarding KTX	–	−0.00001(0.37)	–
Welfare budget per capita	–	–	−0.0001(0.01)**
Security deposit for housing rental	–	–	0.0005(0.00)***
Linear distance	−0.0002(0.00)***	−0.0003(0.00)***	−0.0004(0.00)***
Year	−0.0005(0.00)***	−0.0003(0.00)***	−0.0001(0.04)**
Constant	0.1015(0.01)**	−0.62(0.03)**	−0.98(0.02)**
Model type	Fixed effect	Fixed effect	Fixed effect
N	3,810	946	596
(Overall) R^2	0.12	0.10	0.14
Hausman stat.	42.7	21.6	19.7

Note: Figures in parentheses represent the P-values, while the asterisks (***, **, and *) attached to coefficients indicate significance levels of one percent, five percent, and 10 percent, respectively

excluded from the fixed-effect analysis. This study, however, included the variable in the fixed-effect model in order to control for the cost of migration. The fact that even local taxes are perceived more as benefits of migration than costs indicates that there is no equilibrium of migration in Korea's economic structure. If there are only benefits and no costs to migration from "i" to "j," it may speak to the faulty structure of the economic model used and its inability to explain patterns of migration in reality. This analysis therefore used the linear distance between two given regions to substitute for the missing concept of physical cost. The greater the physical distance, the greater the cost of logistics and perhaps the greater the cost of post-migration adaptation as well.

In conclusion, educational conditions and official land value, which are variables of the market effect, are the two decisive factors that clearly and significantly affect migration. Furthermore, the presence of SOC-like infrastructure (effect of public policy) and the increase in capital expenditure (i.e., fiscal spending) also exert a demonstrable impact on migration.

E. Implications

The empirical analysis so far is rather pessimistic about the prospects of Korea's fiscal policy, but it also reveals the need to adopt a different approach to regional development policy. Korea needs to outgrow the spatial nature of regional development and enhance direct subsidies from the central government, as well as improve intergovernmental fiscal coordination to that end.

The analysis reveals that the variables that clearly and significantly affect migration are the official land value (measured as the amount of security deposit for *jeonse* rental, etc.) and the amount of fiscal support from the central government in the form of capital expenditure and capital stock. In the meantime, as local tax per capita and monthly rent, which together constitute the cost of migration, are also perceived as the "benefit" of migration in promising to provide better living conditions. People migrating from one region to another therefore regard these items of cost as signals of the benefits they can receive at the migration destination. In sum, the models used in the empirical analysis reveal only the benefits of migration and fail to take into account any costs. According to this empirical analysis, people who consider migrating will necessarily move

to another region, despite the relatively high levels of monthly rents or *jeonse* security deposits, in order to benefit from better educational environments and public library services. This, in turn, will prompt the official land value at the migration destination to move upward and new districts of commerce to be developed.

From these findings, we are forced to conclude that there is no point of sustainable equilibrium in Korean fiscal policy for regional development. When there is no clear boundary between the cost of entering a new region and the benefit that can be obtained in that region, the bubble will ultimately burst. We can ensure sustainable forecasts only by developing a new system that forces migrants to pay higher prices for public goods of better quality, such as better educational and cultural environments.

In the current structure that obliterates the correlation between local tax per capita and local economic growth, even massive amounts of fiscal support and investment cannot yield predictable results. This structural distortion, in the long run, exerts a downward pressure on the amount of fiscal support for regional development and even reduces the significance of regional development on the national policy agenda. Inter-regional disparities then begin to grow, with only a few benefitting from such an unequal structure, while migration is no longer considered a practical option. This is why the correlation between regional development policy and fiscal policy must be strengthened and clarified. Fortunately, the analysis of the cost of housing, which constitutes part of the public services charges on the fiscal panel, effectively serves as a "cost" of migration, indicating that an increase in the amount of local taxes and service charges imposed by the local government will contribute to the sustainability of that local government's fiscal spending structure.

Researchers of labor and urban policies should also note that inter-regional employee income disparity and annual income among the microeconomic data do not significantly affect migration in Korea. Here we need to be careful in interpreting whether the phenomenon indicates that there are no effective regional boundaries on the Korean job market or whether the phenomenon is a result of an increase in employment insecurity due to low economic growth. The phenomenon, unobservable in the data from 2003 to 2011, forms an important topic of macroeconomic research, and it further reveals the

need to strengthen the correlation of regional development policy not only with the fiscal policy, but also with the labor policy.

The empirical analysis provided by this study may only serve to reaffirm the weak link between the local tax per capita and economic development of a given region. However, the analysis also shows how the current intergovernmental fiscal coordination system affects inter-regional migration in Korea.

3 Regional development policy and local economic growth

A. Data analyzed

The GRDP, representing the extent of the production basis at a given region and the local income (income at the origin) are two important indicators of the economic status of a given region. In this section, we assess how fiscal support from the central and local governments in Korea affect the economic conditions of a given region, thus approaching the empirical findings on inter-regional migration from a new perspective. Our goal is to determine how the budgetary support from central and local governments affects the GRDP and local income before exerting an impact on inter-regional migration

The regional development policy and the fiscal resources involved can affect the economic growth of a given region first by affecting the levels of employment, output in the region, and local income. The GRDP is often used as a variable or indicator of the economic capacity of a given region, but only with respect to the production-supply side. The data on income at origin, forming the basis of local income estimations, supplement this conceptual shortcoming of the GRDP.[35] Park (2013), which seeks to explain the patterns in which each economic variable is concentrated in certain regions, estimates the local concentration of each economic variable－in light of its impact on human migration－using population-weighted coefficients of variation. In this study,

35) Park (2014), p. 44.

〈Table V-5〉 **Population-Weighted Coefficients of Variation by Year**

Year	Net GRDP per capita	Net income at origin per capita	Net disposable income per capita
2000	0.2873	0.2668	0.1551
2001	0.2705	0.2756	0.1628
2002	0.2805	0.3015	0.1697
2003	0.2754	0.2878	0.1602
2004	0.2822	0.2808	0.1655
2005	0.2824	0.2855	0.1541
2006	0.2765	0.2774	0.1442
2007	0.2804	0.2937	0.1435
2008	0.2718	0.2861	0.1313
2009	0.2884	0.2908	0.1336
2010	0.2837	0.3094	0.1482
2011	0.2906	0.3268	0.1790

Source: Park (2013), p. 50.

the Gini coefficient of the GRDP (i.e., production basis) is lower than that of income concentration, but higher than that of disposable income concentration (i.e., redistribution). Given the progressive nature of income and tax revenue, the concentration of the production basis is likely to be low. Because the concept of disposable income refers to the amount of personal income after the redistribution of wealth thanks to governmental intervention, its concentration is likely to be higher than that of local income

The dependent variables of the analysis forming this section are the GRDP and local income. Here we need to determine whether the variables affecting these two dependent variables should include the capital expenditure of local governments and the total capital formation consisting of yearly flows. In analyzing inter-regional migration with regard to different conditions of living, it is reasonable to assume that the state of capital stock until the time of migration

does affect migration patterns. However, the state of capital stock until the time of migration will necessarily exert a base effect on the GRDP and local income. Therefore, the total capital formation of each year may offer a greater explicatory power on the increases or decreases in the production basis and income of each year. This study therefore measures fiscal investment made by the central government in regional development by the amounts of capital expenditure indicated on local governments' budgets, as well as by the data on total capital formation provided by the Bank of Korea.

The reason this study uses total capital formation as a substitute for the national spending on SOC development is because total capital formation is the only source of information on trends in national capital spending by regional and local governments. Although data on the flow-type national capital spending can be found as part of item-by-item expenditure of the integrated fiscal balance and also as part of capital spending in net loans in d-Brain's *Nara Salim*, d-Brain presents data by account type (general or special accounts of central and local governments), source (central/local/educational budgets), and spending type (capital or current expenditure) only and not by region or city.

As of 2012, the general government tax spending of KRW 274.7 trillion included KRW 18.7 trillion spent by the central government and KRW 54.6 trillion spent by local governments. Much of capital expenditure, in other words, comes from local governments.[36] However, this is the case only when we apply the narrow definition of capital expenditure as indicated in government budgets. International comparisons show the adoption of a broader definition. The OECD (2010, p. Figure 1.5), for instance, also includes within public spending the total capital formation in the public sector and the transferred expenditure.[37]

In 2012, total capital formation amounted to KRW 277 trillion. The private-public ratio in contributions to total capital formation has remained at

36) See the Appendix.

37) Total capital formation consists of the total fixed capital formation, construction investment, facility investment, investment in intangible fixed assets, increases and decreases in inventories, and net acquisitions of valuables. Of these, total fixed capital formation forms 97 percent of all total capital formation. See Bank of Korea, "National Account," at http://kosis.kr/statHtml/statHtml.do?orgId=301&tblId= DT_074Y057&conn_path=I3).

〈Table V-6〉 **Private Sector vs. Government in Total Capital Formation**

(units: KRW 1 billion, %)

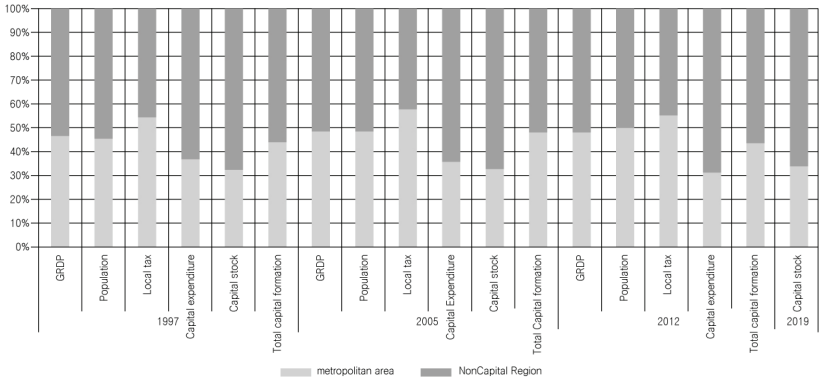
	2007	2008	2009	2010	2011	2012
Total capital formation	277,729.0	277,772.8	240,411.7	278,359.2	282,324.0	277,335.6
Private sector	233,639.1	234,911.2	186,268.2	232,139.1	239,031.9	235,805.1
Government	44,123.2	42,948.9	53,356.3	46,480.3	43,679.3	41,962.3
Private sector (%)	84.12	84.57	77.48	83.40	84.67	85.03
Government (%)	15.89	15.46	22.19	16.70	15.47	15.13

Source: Bank of Korea, National Account KOSIS, http://kosis.kr/statHtml/statHtml.do?orgId=301&tblId=DT_074Y057&conn_path=I3.

85 to 15 since 2007 (except in 2009), or KRW 235 trillion from the private sector versus KRW 42 trillion from the government. In other words, the central government directly invested KRW 42 trillion in 2012 into total capital formation. Although the private sector overwhelming dominates total capital formation in Korea, the public sector has made consistent investment over the last decade, while international research also uses part of total capital formation to estimate the amounts of public investment in various countries. Accordingly, part of total capital formation is used in this study as a measure of public investment resources by region.

In 1997, 43.7 percent of the total capital formation in Korea was concentrated in the Seoul-Gyeonggi region. That ratio is slightly lower than the population concentration rate of 45.5 percent, the GRDP concentration rate of 47.1 percent, and the local tax concentration rate of 54.8 percent in the region, but it is higher than the region's share of either capital expenditure (36.6 percent) or capital stock (31.8 percent). The divide between Seoul-Gyeonggi and Korea's other regions persisted well into 2012. The other explicatory variables used include local taxes, local revenue sharing, and government subsidies. The control variables included the population growth rate and the employment rate. For more on the reasons for choosing these variables, see Kim (2010), Choi (2010), Ju (2009), and Kim (2007).

[Figure V-2] **Total Capital Formation and Other Variables**



B. Method of analysis

The model used in this analysis employs the Arellano-Bond dynamic panel data (AB DPD) estimators. Local data panels including level variables are bound to reflect the characteristics of the chosen time series and regions. As variables reflecting the characteristics of the chosen time series carry significant degrees of auto-correlation and risks of endogenous dependent variables, we cannot guarantee the accuracy of the estimates on these variables by only using a general regression model or a fixed-effect model. Most studies using regional data panels use either fixed-effect models or random-effect models. As panel data involve greater numbers of samples than do either time-series data or cross-sectional data, they allow for greater freedom and measures of estimation efficiency. They also minimize the risk of multi-collinearity among explicatory variables and thereby reduce the estimator bias.

The dependent variables in this analysis are GRDP and local income that show clear macroeconomic trends. We cannot overcome the endogeneity of these variables by using log values or based on a unit root test only. Therefore, this study uses a dynamic panel model, which gives due acknow- ledgement to the economic and regional characteristics of the dependent variables and also

considers their dynamic auto-correlations, while controlling for the endogeneity between the variables.

The AB DPD approach is essentially a generalized method of moments (GMM), which uses the lagged variables as instrumental variables. The problem of endogeneity－ensuing the correlation of each variable to the error term－is overcome by ensuring the accuracy of the estimates using these instrumental variables and minimizing the specific errors of variables by applying to the local and demographic characteristics of time-invariant variables.[38] A dynamic panel model like this is preferred when the time dimension is smaller than the region dimension (i.e., $T = 16 \leq N = 16$).

C. Findings

Through the empirical analysis discussed in this section, we can see whether capital expenditure (including government subsidies and other fiscal resources indicated in local government budgets) and total capital formation (directly invested in by the central government) do indeed affect the economic growth of different regions in Korea in the forms of the GRDP and local income. The analysis reveals that capital expenditure does bear a positive correlation to the GRDP, while total capital formation bears a significant correlation to local income. This is interesting because it signifies that the facility investments made by the central government (i.e., government subsidies for local SOC development) do affect local production bases positively. Total capital formation－massive direct government investments in the acquisition of roads, harbors and other such facilities－also affects local income, but this is at the level of businesses and large corporations rather than individuals. The expansion of infrastructure facilities does increase the operating income of large corporations, thereby raising the local income level on the whole.

We will need an additional analysis of the correlation between personal income and disposable income to clarify the exact nature of local income. For now, we can safely conclude that the fiscal support from the central and local

38) Nickell (*Econometrica*, 1981), Elitza Mileva, "Using Arellano–Bond Dynamic Panel GMM estimators in STATA," Economics Department, Fordham University, July 9, 2007.

〈Table V-7〉 **GRDP, Local Income and Fiscal Resources for Regional Development, 1997-2012**

Dependent variable	Model 1: GRDP	Model 2: Income at origin
GRDPt−1/Rlt−1	0.63(0.00)***	0.51(0.00)***
Population growth rate	0.02(0.00)***	−0.01(0.22)
Local government capital expenditure	0.05(0.00)***	0.04(0.37)
Total capital formation	−0.02(0.19)	0.01(0.03)**
Local revenue sharing	0.02(0.26)	0.05(0.17)
Local tax	0.25(0.00)***	0.39(0.00)***
Employment rate	−0.18(0.41)	0.94(0.05)**
Constant	1.79(0.08)*	0.57(0.83)
Wald Chi^2	9,352.15	635.16

Note: The variables, except for population growth and employment rates, represent the log values per capita. Figures in parentheses represent P−values. Asterisks (***, **, and *) attached to coefficients indicate significance levels of one percent, five percent, and 10 percent, respectively

governments for regional development bear positive correlations to local economic growth and rising local income.

On the other hand, for convergence in local economies, the growth rate of the GRDP was used as a dependent variable. In conclusion, total capital formation does show a significant correlation to the rate of increase in local income, but fiscal support from the central and local governments was incapable of explaining the growth rate of the GRDP.

The analysis of the Italian experience from 1970 and 1995, provided by Auteri and Costantini (2004), demonstrates that direct capital investments by the central government, as well as fiscal resources transferred into local government budgets, bear a positive correlation to the economic growth of given regions.[39)]

Although Kim (2010) analyzes how total capital formation raises the rate of increase or decrease in the GRDP, he uses capital expenditure and total capital formation as control variables, and he simultaneously uses both capital expenditure and government subsidies as measures of transferred fiscal resources. His model of analysis also differs from the one used in this study in methodology (i.e., using the PMG model for correcting errors, etc.).

〈Table V-8〉 **Growth Rates of the GRDP and Local Income**

Dependent variable: Growth rate of GRDP or local income (LI) per capita		
	GRDP	Local income (income at origin)
GRDPt−1/LIt−1	−0.13(0.07)*	−0.51(0.00)***
Population growth rate	−0.78(0.03)**	−0.01(0.88)
Local government capital expenditure	0.63(0.87)	0.04(0.37)
Total capital formation	0.41(0.22)	0.01(0.03)**
Local revenue sharing	0.06(0.69)	0.05(0.18)
Local tax	0.90(0.08)*	0.39(0.00)***
Employment rate	18.69(0.31)	0.92(0.05)**
Constant	−65.04(0.41)	0.63(0.13)
Wald Chi^2	8.79(0.26)	63.95

Note: The variables, except for population growth and employment rates, represent the log values per capita. Figures in parentheses represent P−values. Asterisks (***, **, and *) attached to coefficients indicate significance levels of one percent, five percent, and 10 percent, respectively

39) A great number of researchers continue to study and analyze the correlation between public investment and economic growth, particularly in developing, little developed, and transition states as part of assisting the official development assistance programs of such organizations as the World Bank and the International Monetary Fund (IMF). However, the differences in contexts and variables from country to country have so far prevented us from finding universal implications and lessons. See Monica Auteri and Mauro Costantini (2004), "Fiscal policy and economic growth: the case of the Italian regions," *Review of Regional Studies*, Vol.34, No.1, pp. 72−94.

The empirical analysis discussed in this section confirms that government investments in regional development, whether provided directly by the central government or via local governments, bear positive effects on the growth of the GRDP, local income, and even population in a given region.

Another important factor revealed by our empirical analysis is the role and function of local taxes in Korea. We were empirically able to prove that local taxes exerted a consistent impact on the level variables and growth of the GRDP and local income. Whereas local taxes showed little effect in the earlier analysis of inter-regional migration, they did exert an impact on the production bases and local income in a given region. In Korea, local taxes are designed to reflect inter-regional differences in tax and production bases, and, as such, bear significant correlations to local income and intra-regional production. From the perspective of individual citizens, however, local taxes hardly change the prices of public goods they use in their respective communities.

VI

Conclusion and Implications

1 Estimating the amount and outcomes of fiscal resources for regional development

This study raises the need to perform additional analyses of Korea's capital expenditure to fine-tune the estimates on the amounts of fiscal resources needed to support regional development. It emphasizes that additional analyses should refer to the capital expenditure account of the Korean government and the efficiency of fiscal projects, rather than be based on capital expenditure plans and budgets. More analyses are also needed on specific items of capital expenditure arising in Korea.

This study provides empirical analyses of capital expenditure as indicated on local government budgets, total capital formation, and capital stock in Korea. Although any substantial debate on the regional development policy should be preceded by a review of the performance of fiscal support provided in support of regional development, this study unfortunately omits such a review. Instead, it applies methods of empirical analysis to determine how fiscal spending on regional development affects inter-regional migration.

While acknowledging that much human migration is caused by market effects, such as job opportunities and marriage, this study focuses on how public fiscal policy can cause or conspire with these market effects in inducing inter-regional migration. Through theoretical and empirical analyses we identify and analyze the correlation between the decline in Korea of the inter-regional

migration rate, on the one hand, and changes in the Korean fiscal policy, on the other, with the goal of figuring out how fiscal support for local governments and development serves to minimize migration on top of other factors, such as the rise in the income level, the economic recession, the growing instability of the housing price, and the aging of the population. The Korean government subsidizes local government and development projects in order to ensure that public services of certain types and quality are provided throughout Korea's national territories, so that locals can maintain a certain standard or quality of living without paying the cost of migrating to other regions. Our empirical analysis reveals that capital expenditure, as indicated on local government budgets, and capital stock, as acquired through direct investment from the central government, both bear significant correlations to inter-regional migration in Korea. The expansion of capital stock thanks to fiscal support for local government has helped to improve the living conditions of underdeveloped communities, and therefore it has affected the decline in Korea's inter-regional migration rate.

Our analysis, however, is confined to the income-redistributing function of the central government only, and falls short of demonstrating whether and how local governments themselves use their fiscal resources to induce or prevent migration. Local tax rates perform such a role in the case of other countries. The uniformity of local tax rates in Korea, however, prevents us from making the same assumption. The empirical analysis contained in this study, therefore, concerns the performance of the central government's regional development policy and refrains from making any assessments of the state of fiscal decentralization or the development policies of local governments in Korea.

This study also empirically analyzes how the fiscal support from the central government affects the GRDP and local income of various regions, which are two important factors that bear upon inter-regional migration. The analysis confirms that capital expenditure of local governments increases the GRDP of given regions, while total capital formation can also contribute to the growth of local income on the whole. Fiscal support from the central and local governments therefore helps to expand the production bases and increase the income level in a given region, and in doing so it may induce inter-regional migration.

Having selected the most conservative and rigorous methods of analysis, this study nonetheless has some shortcomings with respect to the data sets used. As already stressed, it was not possible within the scope of the study to isolate the residual effects of the unstable fundamentals of the Korean economy today from the effects of fiscal investment on the country's changing migration patterns. Furthermore, the numerical figures themselves do not explain the institutional significance they represent. As Molloy et al. (2011) have shown in their interpretation of migration patterns in the United States, the description and prescription of migration problems in a given country resulting from market effects and fiscal policy can significantly vary depending on the characteristics of existing institutions. Any empirical analysis of policy outcomes, therefore, can only be secure its findings if followed by a review of existing institutional settings. Nevertheless, this study's analysis is of value in that it concerns the quantifiable outcomes of massive amounts of fiscal support and investment that go into regional development in Korea.

2 Ensuring the efficiency of fiscal spending

In this section, we will explore and discuss possible measures to ensure and enhance the efficiency of fiscal spending in Korea. First, Korean policymakers need to start by reforming and streamlining the subsidies that various ministries and departments of the central government provide for regional development. Aside from enhancing its regional development policy, the Korean government is also pursuing the rationalization of overlapping projects and the establishment of PAYGO as part of its fiscal reforms. The streamlining of government subsidy projects will therefore be inevitable. However, under the current budget control system, PAYGO is unlikely to exert an impact on overlapping subsidy projects, at least not to the desired extent.

The only type of subsidy likely to be adjusted significantly under the interdepartmental PAYGO scheme is that of the block grant in the Regional Development Account. The sealed budget projects supported by the Regional Development Account as part of the SAMCP allow local governments to adjust and coordinate the relations of diverse involved departments. The main ministries

and departments of the central government in charge of promoting regional development include MOLIT, MOTIE, ME, MoA, and MGAHA, among others. Considering the near impossibility of successfully coordinating overlapping subsidy projects among these ministries, our best hopes for streamlining unnecessary and overlapping subsidies may lie in enhancing the discretion and autonomy of local governments receiving block grants from the Regional Development Account.[40]

Another important change to be introduced is to convert local revenue sharing resources into categorical grants. The OECD (2009b) recommends (p. 120) that national governments earmark general grants for regional development so as to facilitate the evaluation of resulting performance. An excess of fiscal equalization grants reduces the incentive for local governments to enhance their fiscal efficiency, and it may even perpetuate a rent-seeking structure that obliterates fiscal transparency and accountability. In providing fiscal support for regional development, Korean policymakers therefore need to clarify and expand the scope of earmarked grants even while increasing the amounts of fiscal equalization grants.

However, it is unlikely the Korean government will make radical cuts to its local revenue sharing program overnight, given Korea's high population density and prevalent public sentiment in favor of balanced national development based on inter-regional fiscal equalization. Nevertheless, with the dramatic rise in the demand for welfare services and the difficulty of finding the necessary additional fiscal means, Korean policymakers cannot afford to forgo thorough and effective evaluations of the performance of general grants.

3 Diversifying financial resources for regional development

The empirical analysis of this study reveals that what is more important

40) According to the MSF' s budget for 2015, fiscal support for nine projects in social services and environmental conservation is to be converted into block grants in 2015, thus increasing the number of block-grant projects from 25 to 34 (MSF, 2014).

and effective than decentralizing the population away from the Seoul-Gyeonggi region is increasing the absolute amount of financial and fiscal resources available for investment in SOC and other facilities in regions outside of Seoul-Gyeonggi. Current fiscal demand in Korea, however, tends to be concentrated on social and welfare services, making it impossible for central and local governments to raise additional fiscal resources for local SOC development. In fact, the amount of fiscal resources for capital expenditure has been steadily declining for some time. The same phenomenon is also observed in other advanced economies, many of which have been forced to diversify resource sources for their capital expenditure on local SOC development.

Given the distribution of fiscal resources and the comparable experiences of other countries, Korean policymakers, intent on linking regional development and fiscal policies, need first and foremost to find alternative fiscal means in the anticipated event of a depletion of the national treasury. Numerous OECD member states that have experienced mounting fiscal pressures due to increases in welfare spending have found their answers in diverse channels, including fiscal decentralization, the coordination of diverse interests of stakeholders, and private-sector investments. Regional development projects need not be an exclusive purview of either the central or local governments and may benefit from the participation of other actors, including public corporations, nonprofit organizations, and private-sector businesses. Deregulation in the form of contractual services may serve to induce greater participation and investment from these actors. Long-term spending projects, such as those of SOC development, form the majority of regional development projects. The Korean government therefore needs to start a serious debate on how to diversify the sources of fiscal resources dispensing with the prevalent opinion that only spending approved by statutes is transparent and legitimate.

In order to find the required additional financial resources for regional development, we need to discuss how to make use of resources available from the private sector through public-private partnerships (PPPs) and other channels. In numerous advanced economies, the higher the level of fiscal decentralization and the better the social perception of contracts, the greater the dependency on PPPs.[41] We will also need to conduct more in-depth analyses on the possible ways to increase and diversify financial and fiscal resources for regional

development, including enhancing the autonomy of local governments and loosening departmental regulations.

4 Enhancing local governments' control over regional development

What would it take to enhance the effectiveness of Korea's regional development policy? The answer would certainly not be found in conventional means, such as the reorganization and expansion of the roles of related departments and local governments, the establishment of a new and integrated governance structure, or the enhancement of the powers and roles of the involved committees. The PCBND, when it first came into being, was given considerable decision-making powers over matters of regional development. Nevertheless, the conflicts of interest among diverse ministries and departments represented on the committee rendered it unable to serve as an effective center of decision-making. Even with new organizations or governance structures, we would not be able to avoid a repetition of the same problem. We are led to the conclusion, then, that we can only overcome the current shortcomings of the regional development by boosting the role and function of local governments.

The decrease in local tax revenue and the contrasting increase in the number of government-subsidized projects in the recent years have significantly reduced the autonomy of local governments in matters of fiscal spending. The rise in local consumption tax, the expansion of the local revenue sharing program, and the increase in the amount and number of general grants for local governments have further served to calcify unequal fiscal relations between the central and local governments. The local tax system should be reformed to allow local governments to vary local tax rates in response to changes in local living conditions that will ultimately expand the local tax base. Local governments and economies can become competitive only through repeated experiences with fair competition. Giving local governments a greater leeway over tax rates and

41) Laure Athias, Julie Le Gallo and Thierry Madies (2014), "Does decentralization hinder or foster privatization? Evidence from Public Private Partnership in OECD countries", 70th IIPF Conference.

spending is the first step toward establishing such a healthy competitive environment. The current top-down structure and department-centered nature of regional development and subsidy policies must give way to greater control and autonomy of local governments over regional development projects. Increased local leadership should then lead to improvements in the quality of public services that local governments provide, which, in turn, should be reflected in the differential local tax rates.

5 Enhancing the income-redistributing effect and function of the regional development policy

Before our final remarks, we need to check our understanding of the nature of the regional development policy in general. The policy is meant to serve as an instrument with which the government can intervene in the distribution of wealth among different regions of a given state by fostering spatial development and transformations. As economies worldwide continue to grow more unstable and income inequality worsens, governments are compelled to create new policy to address the related problems. Leaving the economy to the whims of the market and the principle of efficiency will dramatically increase the cost of social security. The World Bank's space-neutral discussion of regional development policies, with its emphasis on market functions, reflects a profound failure to understand the redistributive effect and function of such policies. The state can redistribute wealth not only among individuals, but also among communities and regions. Social insurances, such as retirement pensions and health insurances, are good examples of redistributive policies for individuals. There is no reason why underdeveloped regions and communities should not be entitled to similar redistributive measures. In fact, the amount of fiscal support for the development of underdeveloped communities is on steady rise in Europe, the United States, and Korea alike. This is evident in the changing distribution of resources between the structural fund and the cohesion fund (for underdeveloped regions) in the EU. The cohesion fund occupied only six percent or so of the EU's budget in 2000, but it has seen its share multiply to 15 percent after the global financial crisis of 2008 and rise even further to 20 percent by

2012.[42] Similarly, an increasing portion of the Regional Development Fund in Korea is spent on supporting underdeveloped regions rather than growing ones. In today's political economy, individual citizens are not the only actors having a say in political decision-making. Regions and communities sharing the same political interests and groups can now also voice their opinions. This study therefore argues that regional development policy focusing on spatial development ought to be maintained and preferably with stronger ties to national fiscal policy, thus enhancing the effectiveness of the fiscal support provided for regional development and intergovernmental fiscal coordination.

In addition, we need to be careful applying lessons learned from foreign cases, such as the EU, to the reform of our own regional development policy. The EU was forced to maintain its place-based approach to regional development policy in order to coordinate the diverse interests of its member states with differing political and economic stakes in the union. We should question applying the same place-based approach to the situation in Korea without modifications. The regional economy policy of the Lee Myung-bak administration, for instance, marked an active appropriation of the regional policies of the EU and the RDA model of the United Kingdom. These policy models define a "region" as a sphere of overlapping economic and living activities, and therefore it is seen as defined by the market effect. Market functions are built into these European models, making it easy to ensure at least a certain level of fiscal efficiency. However, the Lee administration went too far by mandating that the concept of "region" in regional development policy be revisited and redefined every five years whenever a new presidential administration came to power. Yet regional development projects gain substance and content on the basis of the underlying fiscal projects. Cities, provinces, counties, and smaller districts are the principal recipients and executives of the fiscal resources provided via such projects. There is already a firmly established structure of incentives pertaining to the distribution and effects of budgetary resources. It was therefore unnecessary and infeasible for Korean policymakers to renew the concept and definition of "region" every so often solely for the sake of implementing a new policy. It is important to

42) Go to the EU Web site, at http://ec.europa.eu/budget/figures/interactive/index_en.cfm.

keep in mind that place-based regional development policies strive to ensure a more balanced development of the given national territories by providing underdeveloped areas with prioritized support and assistance. In Korea, it is nearly impossible to provide fiscal support in addition to the established framework of the local revenue sharing program and government subsidies, irrespective of how the concept of "metropolitan region" is defined. This is because the unit of fiscal redistribution and the concept of "region" as a beneficiary of regional development policy must correspond to each other for such fiscal support to be provided.

The Park Geun-hye administration's emphasis on the right to prosperity and welfare stresses the need to design and implement regional development projects at the level of neighborhoods. As such, it is unlikely to contradict the existing system of intergovernmental fiscal coordination. However, the current approach provides few incentives for local governments at city and county levels. Both the balanced development policy of the Roh Moo-hyun administration and the metropolitan region policy of the Lee Myung-bak administration have failed because of the discrepancy between the concept of "region" used in these policies and the actual units of fiscal redistribution, because of the absence of proper fiscal incentives for local governments, and because of the failure to balance the relations between new policies and existing government-subsidized projects. The failures of these policies indicate that if the Korean government is to provide actual and substantial benefits for the country's residents in all regions and communities, it needs to ensure the consistency of the unit of its policy and the unit of fiscal redistribution.

This study confirms that fiscal support for regional development and intergovernmental fiscal coordination are indeed effective policy instruments for inducing inter-regional migration, as they can stimulate the economic growth of certain regions and cause rises in local income.

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