Research Paper 12–04

A Study on Central and Sub-national Fiscal Share in Social Expenditure

December 2012

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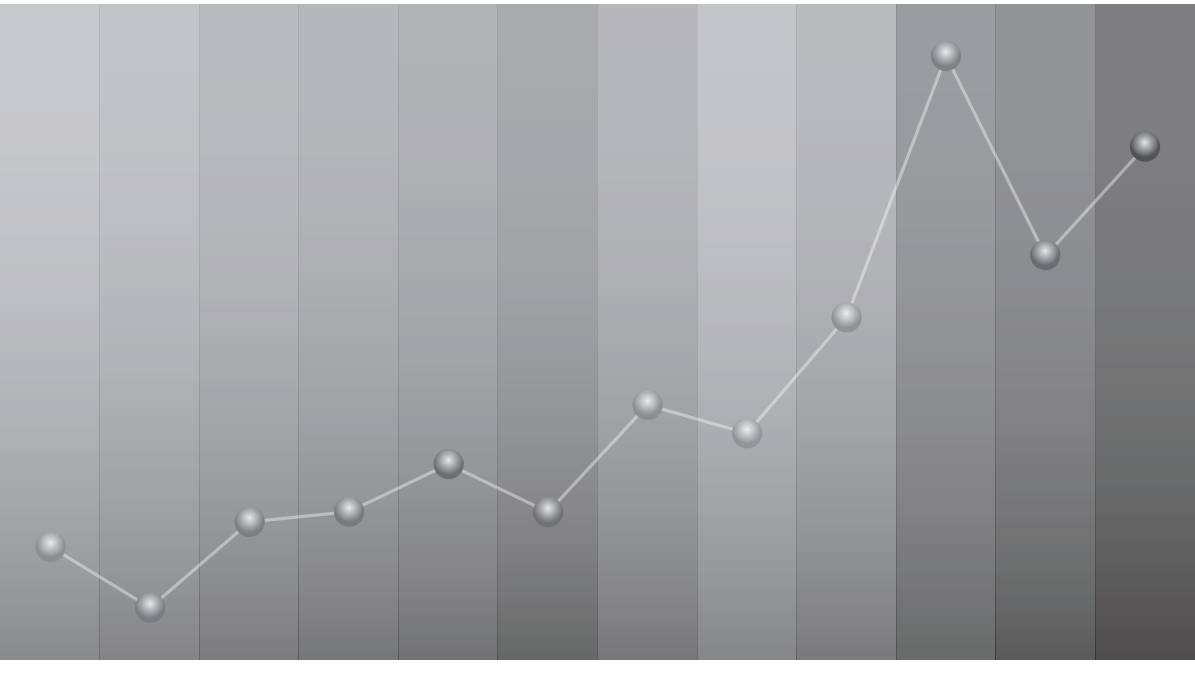

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Introduction

Recent fluctuations in the economic environment are bringing heightened attention on fiscal soundness. While factors such as economic instability abroad cast uncertainty on the revenue environment, central government expenditure is growing, centering on welfare services. An increase in welfare spending that outpaces economic growth is generally held as one of the contributing factors to the crises in southern Europe, and rapidly growing pension expenses are expected to take a large portion of the nation's fiscal expenditure.

The environment faced by local authorities is no different. With a limited net increase in revenue, a sharp increase in social welfare-related expenditures has made local governments' fiscal conditions more difficult. The structural problems of intergovernmental finances have been exposed through the increased financial share of local governments with regard to welfare services, which has continuously risen since the introduction of the decentralization local shared tax (decentralization LST), and an increase in social expenditures caused by government subsidized welfare programs implemented mainly based on mandatory expenditure. In addition, the financial pressure placed upon local governments following the rise in social expenditure has incurred disparities in the provision of welfare benefits by local governments, thereby further burdening local governments and fiscal authorities.

As solutions to such problems, previous studies have discussed remedies such as the re-classification of local transfer programs; reverting programs to national subsidized programs; an increase in decentralization LST; expansion of differential subsidy rate and introduction of a social welfare subsidy. These alternatives, however, may alleviate the local financial burden temporarily, but cannot resolve structural problems. This is because local governments' social expenditures accompany problems both characteristic of welfare-related programs as well as fundamentally arising from intergovernmental finance. Amid prospects of a growing scale of social expenditure due to the status of national economic growth and the recent trend of population aging, an important task facing fiscal authorities is the distribution of the financial burden between central and local governments. This cannot be simply resolved by alleviating the burden of either level of government, central or locals. Gaining and maintaining the status of an advanced country is dependent on the government's design of the social safety net, paramount to which are the roles central and local governments should assume and structuring the distribution of the financial burden in order to accomplish their goals.

This study aimed to focus on the current fiscal situation of central and local governments, and among a range of discussions presented by previous studies, it attempted to tackle the previous focal points through three issues for discussion. Before addressing such cases in point, this paper took note of "the scale of social expenditure." The sharing of finance for welfare services between central and local governments is based on the comprehensive design of sharing the financial burden, which allows the discussion of sectoral financial sharing with regard to welfare services. To understand the size of social expenditure, this paper investigates social expenditures of central and local governments and then the size of the aggregate finances by budget items. This study also intended to illustrate the status of fiscal expenditures based on the central and local government comparison and international comparisons, and also to examine a growing scale of fiscal expenditure on public goods by comparing cases from major advanced countries.

The issues addressed by this study are as follows. First, it attempted to secure a ground for deliberation regarding "raising the national treasury

subsidy rate (NTS)." Considering that the government is responsible for fiscal expenditures on providing public goods including cash transfer, in-kind services, and a range of tax assistance, the study was initiated with the awareness that it must surpass the shortcomings of simplistic comparisons with major countries. Therefore, this paper aimed to scrutinize the reorganization of intergovernmental fiscal transfers (IFT) demonstrated in the expansion of social expenditure. Particular attention was given to the cases of Sweden and Norway, the countries which expanded public spending while facing economic downturns and rising social expenditure. Significant implications were also posed by the content of social expenditure sharing in the U.S. and Japan, whose tax burden ratios are low. Second, this study intended to present the results of allocation of NTS with the reflection of local characteristics, including population composition in Korea and its correlation with transfer resources, and to reaffirm changes in fiscal transfers that have been shown since 2008 by using a regression analysis. To this end, in particular, it was deemed necessary to understand the distinction of LST and NTS through the allocation of transfer funds on local governments. Considering the features of finance share between the central and local governments, it was also necessary to examine if IFT has been managed as an aggregate or if there is a need to optimize the individual functions of LST and NTS. This is because attention on the central-to-local allotment of financial resources naturally leads to the examination of its effects on social equity based on the exact assessment of national subsidies in question and other available resources. Another issue is the "reorganization of the differential subsidy rate," and this study viewed that instead of focusing on the previous means of equalizing the rates of individual programs, there was also a need to simultaneously investigate the existing distribution of IFT. For further objective investigation into this system, this study strived to provide empirical analysis that illuminates both policy effects and limitations of differential subsidy rates, which are implemented on the level of individual programs.

Therefore, this study intended to stress that there is a need of a variety of perspectives toward the welfare fiscal burden shared between the central and local governments and this paper is structured as follows. Chapter II presented various standards regarding the size of the welfare budget and

estimated the Korean welfare budget based on parameters selected by this study. In particular, the increased amount of local social expenditure was examined by function and autonomous authority, and various issues including decentralization LST and welfare programs for infants and toddlers were covered in Chapter II. In addition, efforts to enhance fiscal efficiency were reviewed in the areas of local authorities' own programs and non-welfare programs. Chapter III explained the objectives of this study to summarize current issues related to social expenditure based on the current status of intergovernmental welfare spending and major issues between central and local governments, and also suggested directions for improvement. In Chapter IV, the individual issues mentioned above were addressed with different frameworks for analysis. On the matter of whether an NTS rate should be raised, the study reached a conclusion through case studies on individual countries; as for the expansion of differential subsidy rates, it took note of analyses on the current status by examining the relationships between population composition and IFT and then used this as the basis to present hypotheses and verified them through a regression analysis. Following this, the paper pointed out the limitations in discussion of sharing financial resources under the soft budget constraint and emphasized the need of evaluating effects of fiscal responsibilities through risk diversification effect that is produced by IFT. In the last chapter, based on such analyses, the paper presented improvement directions and concrete measures to achieve improvement in the short and long term.

II

The Scale of Central and Local Government Social Expenditure

1 Welfare Spending Scale Based on Korean and International Statistics

A. Scale of Central Government Social Expenditure

Financial resources for welfare (health + welfare + labor) in the central government's 2012 draft budget reached approximately 92 trillion won, accounting for 28.2 percent of the total budget of the central government, 326 trillion won, and the largest portion in the sectoral budget spending. As of 2005, social expenditure constituted 23.7 percent of the central government budget and has continued to increase at the rate of 6.4 percent from 2011, higher than the 5.5 percent increase rate of total expenditures. The composition of welfare outlays shows that if 19 trillion won spent for housing is excluded from the total budget of 92 trillion won, mandatory outlay accounts for 80.8 percent, or 58.8 trillion won; discretionary outlay, approximately 19.5 percent, or 14.2 trillion won. This indicates that Korea manages its welfare expenditure structure mainly based on "mandatory outlay" for statutory programs.

<Table II-1> Structure of Welfare Budget Draft for 2012

(Unit: trillion won)

Total welfare budget of 92 trillion won minus 19 trillion won for housing equals: 73 trillion won		
Mandatory Expenditure 58.8 trillion won (80.8%)		Discretionary Expenditure 14.2 trillion won (19.5%)
<Budget programs: 16.4 trillion won> Basic livelihood benefit 7.0 Basic old-age pension 3.0 Disability pension, disability allowance 0.4 Childcare subsidy support 2.0 Veteran compensation, etc. 3.4 Others 0.6	<Social insurance programs: 41.4 trillion> Pension benefit 26.8 Unemployment benefit 3.3, Maternity protection benefit 0.6, Employment injury benefit 3.9, others 0.3 (Subtotal of insurance programs 34.9 trillion won) Health insurance assistance 6.0 Long-term care insurance support for senior citizens 0.5 (Subtotal of support from national treasury 6.5 trillion won)	Financially assisted job creation 2.5 Career development 1.2 Employment subsidy 1.2 Facility operation support, care services

Note: The size is measured based on the total expenditure and mandatory expenditure is based on the internal standard set by the National Assembly Budget Office.
Source: "Analysis on 2012 Budget Draft I," Budget Draft Analysis Series No. 7, p. 119, Table 7, National Assembly Budget Office, November, 2011.

Out of the central government's social expenditure, the sectoral details of "social welfare spending" (24.7 trillion won) are as follows: the largest portion amounting to 7.9 trillion won was spent on basic livelihood security, along with 3.9 trillion won for "senior citizens and the youth" and 3.2 trillion won for "childcare, family and women." Since 2007, the annual increase rate has been about 9.6 percentage points on average, with senior citizens and the youth constituting the highest rate of 43.7 percentage points, followed by 22.5 percentage points for "childcare, family and women," and 17.1 percentage points for social welfare in general.

<Table II-2> Changes in Central Government's Social Expenditure Over 5 Years

(Unit: trillion won, %)

Size of Welfare Budget Expenditure	2008	2009		2010	2011	2012	Aggregate	Annual Increase Rate
		Main Budget	Supplementary					
Total Government Expenditure (A)	262.8	284.5	301.8	292.8	309.1	325.4	1,491.9	6.6%
Welfare Spending (B)	68.8	74.6	80.4	81.2	86.4	92.6	409.4	8.7%
Percentage of Welfare Spending out of the Total Expenditure (B/A)	26.2	26.2	26.6	27.7	28.0%	28.2%	27.4%	
[Sectoral]								
Social Welfare	62.9	67.7	73.4	73.9	78.9	84.8	373.9	8.7%
Health	5.9	6.9	7.0	7.3	7.5	7.9	35.6	8.5%

Note: 1. Based on the final budget reflecting the supplementary budgets from 2005 to 2008 (no supplementary budget for 2007)
2. The aggregate and the average annual increase rate for 2009 are based on the supplementary budget (however, statistics by account for 2008 and 2009 are based on the main budget).
3. 2008 statistics by account (budget / fund) is based on the main budget (social expenditure: 67.6 trillion won).
4. "Support for the socially vulnerable, etc." is the sum of three sectors such as the support for the socially vulnerable, the elderly and youth, and the general social welfare.

Source: Each year's *Public Finance* and dBrain, Park In-hwa (2010), p. 39, Table 3.

<Table II-3> Central Government's Social Welfare Budget Size

(Unit: million won, %)

Classification	2007	2008	2009	2010	2011	2012	Annual Average Increase Rate
Sub-total	15,699,591	18,387,889	20,869,759	22,691,285	23,878,922	24,785,230	9.6
Basic Livelihood Security	6,575,921	6,850,473	7,135,490	7,297,260	7,516,784	7,902,802	3.7
Support for the Vulnerable	735,329	846,205	930,635	1,354,713	1,181,326	1,261,888	11.4
Public Pension	1,592,338	1,524,276	1,824,248	1,715,545	1,677,345	1,922,029	3.8
Childcare, Family and Women	1,169,470	1,592,663	1,897,206	2,297,967	2,658,957	3,223,163	22.5
Elderly and Youth	651,274	2,132,504	3,174,330	3,543,810	3,786,357	3,988,191	43.7
Labor	915,968	953,997	1,182,712	1,220,846	1,361,329	1,724,753	13.5
Veteran Care	2,705,258	3,010,480	3,228,586	3,467,930	3,723,247	3,897,625	7.6
Housing	1,100,327	1,171,828	1,126,404	1,348,321	1,446,648	306,513	-22.6
General Social Welfare	253,707	305,462	370,147	444,895	526,930	558,265	17.1

Source: Ministry of Strategy and Finance Digital Budget & Accounting System (http://www.digitalbrain.go.kr)

B. Scale of Local Government Social Expenditure

Prior to examining the scale of local government expenditure for welfare items, an exploration into the GDP growth rate and the growth rates in local finance and local government social expenditure from 1992 to 2010 finds that while the scales of GDP and local finance showed similar increases with 9.0 percent and 9.3 percent respectively on an annual average, the increase in social expenditure for the same period showed approximately 18.5 percent, more than twice the growth in GDP and local finance.

<Table II-4> Local Government's Social Expenditure: National and Local Composition (2012)

(Unit: million won, %)

Classification	Total	National Expenditure (A)	Expenditure (City/Province) (B)	Expenditure (City/County/District) (C)	Ratio		
					A	B	C
□ Social Welfare	30,915,723	15,917,442	8,931,453	6,066,828	51.5	28.9	19.6
Basic Livelihood Security	9,299,837	7,117,298	1,625,092	557,447	76.5	17.5	6.0
Assistance to the Socially Vulnerable	4,378,644	1,622,820	1,871,073	884,751	37.1	42.7	20.2
Nursery, Family, and Woman	7,749,047	3,111,350	2,532,647	2,105,049	40.2	32.7	27.2
Elderly and Youth	7,083,632	3,632,747	1,542,721	1,908,164	51.3	21.8	26.9
Labor	625,508	173,327	225,052	227,129	27.7	36.0	36.3
Veteran Care	209,570	18,392	52,081	139,098	8.8	24.9	66.4
Housing	1,221,377	137,851	1,003,926	79,601	11.3	82.2	6.5
General Social Welfare	348,107	103,658	78,860	165,589	29.8	22.7	47.6
□ Healthcare	2,082,544	574,428	591,865	916,250	27.6	28.4	44.0
Medical Healthcare	2,032,921	565,709	578,125	889,087	27.8	28.4	43.7
Food and Drug Safety	49,623	8,720	13,740	27,164	17.6	27.7	54.7

Source: Ministry of Public Administration and Security, *Summary of Local Budget for Fiscal Year 2012*

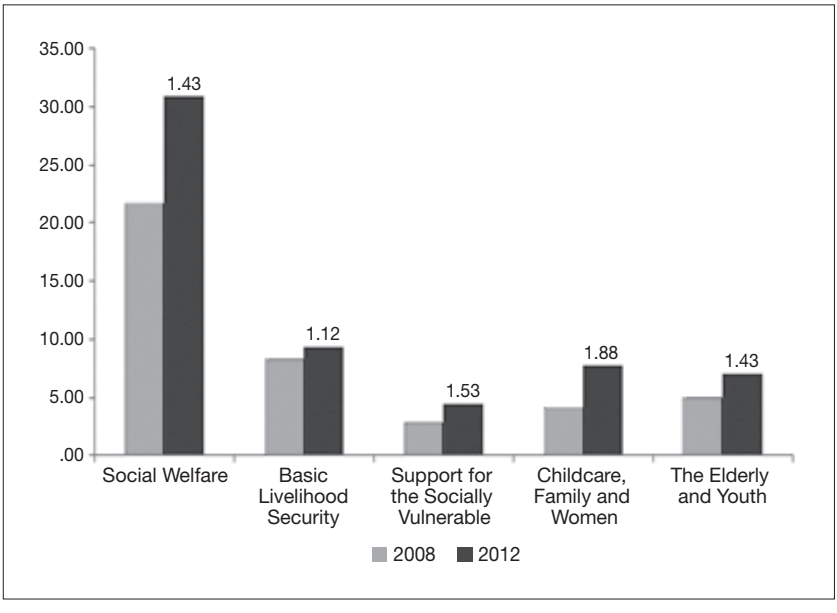
The welfare sectors of local governments based on the breakdown of government expenditure by functional items can be seen to include social welfare and healthcare, which accounted for approximately 21.7 percent, or 33 trillion won, out of 151 trillion won in the summary of FY 2012 budget for local governments, thereby also constituting the largest budget item. The fiscal welfare size of the local government budget included national subsidy from the central government, and the revenues were financed from the central government (national subsidy = 16.4 trillion

won) and from local government (finances from cities / provinces + finances from cities / counties / districts = 16.4 trillion won). By sector, the ratio of finance shared by the central and local government for social welfare is 51:49 and 27:73 for healthcare with local governments accounting for the higher portion. This portion corresponds to the ratio of central and local governments in terms of welfare financial burden within the local government budget.

A look into the changes in the 2012 local government spending in the social welfare sector, compared to 2008, found that the total expenditure for social welfare grew approximately 1.43 times, with 1.12 times for basic livelihood security; 1.53 times for assistance to the socially vulnerable; 1.88 times for childcare, family and women; 1.43 times for the elderly and youth. If these figures are assessed in terms of city / province and city / county / district, the former shows the sharpest increase in the childcare, family and women sector in terms of both the budget and growth rate, while for the latter, the sectors of childcare, family and women, and the elderly and youth sees the greatest rise.

[Figure II-1] Changes in Local Government Social Welfare Spending from 2008 to 2012

(Unit: trillion won, times)



C. Total Social Expenditure by Central and Local Governments

This analysis calculated the proportion of total social expenditure from the central and local governments out of the aggregate expenditure for welfare services (91 trillion won as of 2012) adjusted for the fiscal coordination through NTS. The ratio of the central and local governments, calculated by deducting overlapping national outlays, which were also included in the central government's expenditure, was 70:30 and this ratio has been maintained since 2008. The ratio of 50:50 of the central and local governments in the above-described *Summary of Local Government Budget* is the percentage within the local government budget, which only refers to the scale of welfare services supplied through local budgets. For recipients of welfare services, the size and content of welfare services are far more important than identifying whether the service is supplied by the central or local governments. A more meaningful distinction for these recipients

is the proportion of the central-to-local government ratio out of welfare services as a whole, rather than out of services "exclusively supplied by local government budgets." Therefore, this study was conducted based on the presumption that the central and local governments hold a ratio of 70:30 in the financial share of providing welfare services that include all social services offered.

The ratio of 70:30 stands in contrast to the declining state of local finance due to the increasing share of local expenditures, and this can be explained by the following reasons. First, from the perspectives of local authorities, programs for basic livelihood security, for instance, with a high percentage of national subsidies, are deemed as national programs, while local authorities face a greater financial burden regarding programs for which national grants are small, such as "childcare, family and women." Second, the 70:30 ratio of financial burden shouldered by the central and local governments corresponds to the average of totals, and finance-sharing levels vary because different "basic subsidy rates" are applied according to local authorities, specifically, between upper- and lower-level local authorities, and between the Seoul Metropolitan Area (SMA) and non-SMA among such lower-level local authorities. Local government expenditure in the social welfare sector grew approximately 1.43 times from 21.6 trillion won in 2008 to 30.1 trillion won in 2012, with the sector of "childcare, family and women" showing the highest increase of 1.88 times.

<Table II-5> Changes in Expenditure of Central vs. Local Government for Welfare Services

(Unit: trillion won, %)

	2008	2009	2010	2011	2012
Central	56.3	61.2	67.0	69.6	75.1
	70.5%	70.1%	69.9%	69.6%	69.8%
Local	23.5	26.0	28.7	30.4	32.5
	29.5%	29.9%	30.1%	30.1%	30.2%
Total	79.8	87.3	95.7	100.0	107.6

Note: The central government refers to the sectors of social welfare and health care in the category of government "budget" and the scope of local expenditure for welfare services covers the expenditure of cities/provinces and that of cities/counties/districts in those two sectors (based on each fiscal year's *Public Finance, Summary of Budget and Summary of Local Budget*).

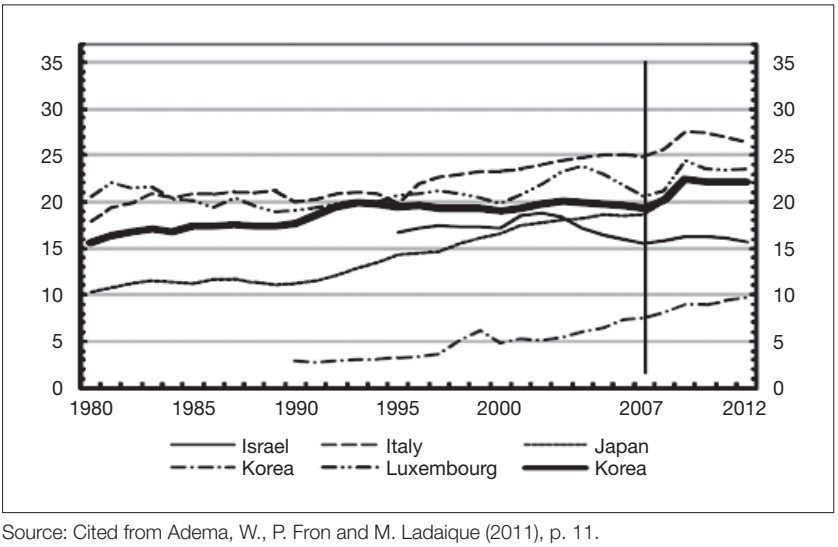
With regard to intergovernmental distribution of social expenditures, the characteristics of local social expenditure can be summarized as follows. First, the proportion of local expenditure is on the increase but for the past five years, the balance of financial burden between the central and local governments has been maintained. Except for funds, basic livelihood security (7.9 trillion won as of 2012) and health insurance (4.9 trillion won) were found to take up the large proportion among services financed out of government general accounts. As for a portion of public sector expenditure, the foundation for Korea's welfare policies constitutes living wages and medical services for assisting those living in poverty. A large portion of budget is provided by funds, including 30.7 trillion won for public pensions; 11 trillion won for labor related funds, including employment insurance and workers' compensation insurance; and 16.5 trillion won for national housing. Second, the sector of "childcare, family and women" will be the largest in fiscal composition when considering the fiscal scale, the trends of increasing fiscal scale and increased future fiscal burden as seen through overseas cases. Other large sectors placing a financial burden to the local government budget include support for the elderly, the youth and the socially vulnerable. Third, this study includes funds from the central government to analyze the size of social expenditure in terms of the aggregate budget. Most studies on the fiscal share for welfare services have generally focused on general financial resources, excluding funds. The below analysis will focus on "national subsidized programs," operation based on local matching funds in response to subsidies from the central government.

D. Changes in Social Expenditure of Major Countries

The international comparison of welfare services shows that Korea's welfare spending is relatively lower (below 10% of GDP as of 2009) than that of advanced countries. With regard to the growth trend in this sector, however, a research paper co-authored by Park Hyung-soo and Jeon Byung-mok presented that spending related to population aging in Korea has seen a sharp increase of over three-fold in comparison to EU states, due to a rapidly aging population and a maturing pension system, while the

GDP growth prospect in 2050 based on OECD SOCX database is expected to record 20.8 percent, up 12.2 percentage points from 2009.

[Figure II-2] Changes in Social Expenditure as a Share of GDP since the 1980s

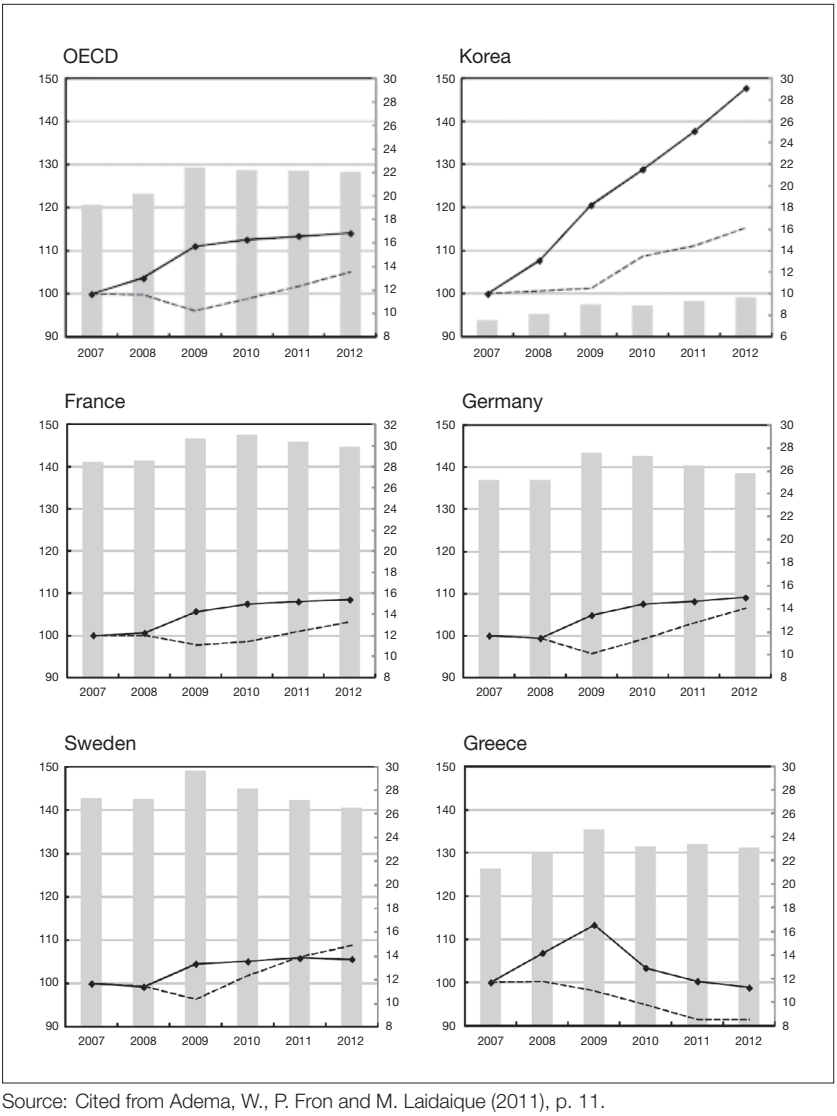


Source: Cited from Adema, W., P. Fron and M. Ladaique (2011), p. 11.

The bar charts shown in the figure below display government spending on welfare relative to GDP (secondary y-axis to the right). Dashed lines and solid lines represent GDP growth rate and expenditure on social welfare respectively, with 2007 levels anchored as 100 on the left y-axis. As for the case of Korea, the scale of government spending on welfare relative to GDP sits below 10 percent, but its increase in 2012 is prospected to be approximately over 1.4 times higher than that of 2007 and far higher than GDP growth rate of 1.15 times. For reference, the size of welfare spending of OECD countries since 2007 accounted for over 20 percent of GDP, but after the financial crisis, such growth has decelerated close to the GDP growth rate. Government spending on welfare for 2012 is approximately 1.15 times higher than in 2007, with GDP showing a decline at the time of the economic crisis followed by an eventual recovery. The comparison with major countries in terms of welfare spending indicates that Korea's social

expenditure is on a steady increase, though currently at a smaller level, and it has constantly increased in terms of absolute figures even throughout the financial crisis. The size of public spending on the expansion of social safety networks is naturally prospected to increase because public pension expenditures will be expanded due to the aging population, which would result in a decline in the economically active population, an increase in dependants, and more expenditure on social welfare.

[Figure II-3] Changes in Korea's Welfare Spending Increases Compared to OECD Countries



Source: Cited from Adema, W., P. Fron and M. Laidaique (2011), p. 11.

2 Current Status of Growth in Local Government Spending on Social Expenditure

A. Changes in Welfare Budget Size

<Table II-6> shows that the ratio of social welfare budget to the total budget grew from 20.9 percent in 2008 to 24.5 percent in 2011, identifying a constant increase in this sector. The ratio of economic development expenditure to social development expenditure was 1.3 in 2008, but the difference was almost leveled by 2011, which indicates that fiscal priorities within local government were adjusted. The increase in the fiscal share of local finance regarding "welfare benefits," that is, the burden of welfare expenditure relative to local taxes, also indicates that the increased social expenditure was accommodated by IFT rather than local taxes. The burden imposed on the national treasury by the social welfare budget has shown a modest growth since 2008. With regard to growth rates, the social welfare budget has increased substantially compared to other financial resources, while the contribution rates of local governments have increased steadily. Benefit recipients have seen services continually improve and per capita expenditure for social welfare was found to be an annual average of 2.5 million won. Given the size and the increase rate of fiscal social expenditure, therefore, the need has resurfaced for discussion regarding the future size of social expenditures and the allocation thereof to central and local governments.

<Table II-7> indicates that social welfare budget is differently allocated depending on types of local authorities. During the period from 2005 to 2012, the annual average growth rates of the entire budget for social welfare stood at approximately 10.1 percentage points. Head offices in cities and provinces have reported a similar rate of 10.5 percentage points, while cities and counties have reported 8.8 percentage points and 5.2 percentage points respectively, lower than the average. On the other hand, autonomous districts have comprised over 40 percent of the entire budget since 2010, with a high annual average growth rate of 17.1 percentage points. Even in the same lower level local authorities, a stable increase was found regarding dependence on government social welfare spending in cities and counties,

with a sharper increase in autonomous districts. This indicates that after financial resources are allocated between central and local governments, such resources are then distributed among local authorities in various ways. In particular, the findings suggest a noteworthy result that large cities disclose vulnerability in their revenue structure relative to the fiscal demand for social welfare, while counties without independent resources show stability in expenditure budgeting on social welfare. This present situation constitutes a vital talking point that demonstrates the need for a discussion on the central-local sharing of welfare spending resources to be accompanied by the restructuring of IFT.

<Table II-6> Changes in Size of Local Authorities' Social Welfare Budget

(Unit: thousand won, %)

		2008	2009	2010	2011
Budget Size	Ratio of social welfare budget	20.9%	21.3%	22.8%	24.5%
	Ratio of social welfare settlement	17.9%	18.7%	20.1%	
	Ratio of budget for own programs to social welfare budget	13.3%	12.9%	11.9%	10.9%
	Budget for economic development to social development	130.6%	132.8%	114.0%	100.3%
	* Budget for economic development to social welfare	183.9%	186.7%	158.5%	139.1%
Burden Relative to Local Finance	Ratio of per capita welfare expenditure to per capita local tax burden	49.7%	51.3%	55.4%	57.2%
	Raito of own source revenue	29.4%	29.9%	33.4%	35.9%
	Ratio of general revenue	17.8%	18.0%	19.7%	20.7%
	Ratio of share born by the national treasury in the social welfare budget	49.8%	61.1%	64.8%	52.6%
Growth Rate	Increase rate of social welfare budget per capita	25.8%	10.9%	8.3%	6.8%
	Increase rate of social welfare budget	26.5%	11.4%	9.9%	7.3%
	Ratio of social welfare budget increase rate to the general revenue growth rate	35.0%	20.0%	284.8%	73.7%

<Table II-6> Continue

(Unit: thousand won, %)

		2008	2009	2010	2011
Growth Rate	Increase rate of the share of local government in the social welfare budget		105.2%	110.2%	118.0%
Recipient Equality	Social welfare budget per capita	437.3	485.1	525.3	561.0
	Amount disbursed per capita for social welfare recipients	2,146.8	2,310.0	2,451.8	2,573.8
	National subsidy per capita for social welfare recipients	1,069.7	1,215.7	1,287.1	1,353.4
	Share of local government per capita social welfare recipients	1,077.0	1,094.3	1,164.6	1,220.4

Note: Indicators in this study are cited from those based on data from 2004 to 2006 in the previous studies by Go Kyeong-hwan (2010) and Choi Seong-eun (2011). The ratio used in this analysis stems from aggregate data contained in *the Summary of Local Budget for Fiscal Year* and the *Financial Yearbook of Local Government*, that is, the combination of data from cities/counties/districts, as opposed to analytical data for individual autonomous communities. Total expenditure does not include reserve fund and miscellaneous spending; social development expenditure is incurred in the sectors of social welfare, healthcare and education; and economic development expenditure is spent for agriculture, forestry and fisheries and land and regional development.

Source: The budget is a net total of each fiscal year of *the Summary of Local Budget*; the settlement is a net total of each year of *the Financial Yearbook of Local Government*; the population represents the registered population as residents; the number of recipients of veteran compensation is drawn from sources of the Ministry of Patriots and Veterans Affairs; the number of persons with disability is the number of disable persons registered to the Ministry of Health and Welfare.

Previous related studies analyzed that an increase in welfare budgets was attributed to the matching burden of local governments incurred in projects financed by the national treasury and the subsequent increase in local government expenditures in welfare services. Categorized by types of local government, on the levels of cities and counties, independent resources added by local subsidies presumably affected the reduction of the entire budget constraint. For a better understanding of this phenomenon, the study includes the total independent resources of local governments. It was found that the growth rate of local government spending in social welfare services surpassed those of the GDP, LST, and independent financial resources. In terms of scale, social welfare budgets grew from below 13 trillion won in 2005 to over 30 trillion won in 2012, similar in size to that

of the LST. This proves that the burden of fiscal growth prompted by the expansion of social expenditure since 2005 has been shared by the central and local authorities.

<Table II-7> Share of Local Expenditure vs. Local Resources in Implementing Welfare Subsidy Programs

(Unit: trillion won, %)

	2005	2006	2007	2008	2009	2010	2011	2012	Annual Average Increase Rate
Central Finance									
Total Government Expenditure	209.6	224.1	238.4	262.8	301.8	292.8	310.9	325.4	6.6
(increase rate)		(6.9)	(6.4)	(10.2)	(14.8)	(-3.0)	(6.2)	(4.7)	
Expenditure in Social Welfare	44.54	50.52	56.1	62.91	73.42	73.92	78.8	84.8	9.7
(increase rate)		(13.4)	(11.0)	(12.1)	(16.7)	(0.7)	(6.6)	(7.6)	
National Subsidized Programs (a)	4.95	6.04	7.82	11.16	13.02	14.11	14.4	15.5	18.4
(increase rate)		(22.0)	(29.5)	(42.7)	(16.7)	(8.4)	(2.1)	(7.6)	
Share of Local Expenditure Corresponding to National subsidized programs (b)	1.78	2.15	2.85	5.07	6.15	7.01	6.7	7.4	24.7
(increase rate)		(20.8)	(32.6)	(77.9)	(21.3)	(14.0)	(-4.4)	(10.4)	
Ratio of Local Expenditure to Subsidy Programs (b/a)	36.0	35.6	36.4	45.4	47.2	49.7	46.5	47.7	44.1
Local Finance (net total,finalized budget)									
Budget Size of Revenue and Expenditures	107.06	115.47	128.04	144.45	156.7	149.7	156.25	151.09	5.2
(increase rate)		(7.9)	(10.9)	(12.8)	(8.5)	(-4.5)	(4.4)	(-3.3)	

<Table II-7> Continue

(Unit: trillion won, %)

	2005	2006	2007	2008	2009	2010	2011	2012	Annual Average Increase Rate
Social Welfare Sector	12.89	15.32	18.81	23.71	29.16	28.61	30.37	30.91	13.8
(increase rate)		(18.9)	(22.8)	(26.0)	(23.0)	(-1.9)	(6.2)	(1.8)	
Independently SourcedRevenue (local tax+non-tax revenue)	66.65	69.63	78.05	84.07	86.37	85.18	87.19	85.89	3.8
(increase rate)		(4.5)	(12.1)	(7.7)	(2.7)	(-1.4)	(2.4)	(-1.5)	
Local Shared Tax	19.65	20.93	24.53	30.68	28.1	27.7	30.46	29.21	6.4
(increase rate)		(6.5)	(17.2)	(25.1)	(-8.4)	(-1.4)	(10.0)	(-4.1)	
Independence Financial Resources (own source revenue+local shared tax)	86.3	90.56	102.58	114.75	114.47	112.88	117.65	115.1	4.4
(increase rate)		(4.9)	(13.3)	(11.9)	(-0.2)	(-1.4)	(4.2)	(-2.2)	
GDP	865.2	908.7	975.0	1,026.5	1,065.0	1,173.3	1,237.1		5.9
(increase rate)	(4.6)	(5.0)	(7.3)	(5.3)	(3.8)	(10.2)	(5.4)		

Note: This table was drafted using as reference <Table 13> from page 68 in Park In-hwa (2010).
Source: The central finance section (including social expenditure) is based on annual *Public Finance*; from national subsidized programs (a)/share of local expenditure corresponding to national subsidized programs (b), data of national subsidized programs by the Ministry of Health and Welfare and corresponding local expenditure are excerpted from internal materials of the Ministry of Public Administration and Security and the Ministry of Health and Welfare. GDP is based on data from the Bank of Korea.

B. National Subsidized Programs for Social Welfare

<Table II-8> Share of NTS and Local Expenditure by Year (Based on the Initial Budget)

(Unit: trillion won, %)

Classification	2008	2009	2010	2011	2012	Average Increase Rate
Local Budget (A)	125.0	137.5	139.9	141.0	151.1	4.9
Total National Subsidized Programs (B) (B/A)	35.0 (28.0%)	41.8 (30.4%)	46.7 (33.4%)	48.6 (34.5%)	52.6 (34.8%)	10.7
■ National Treasury Subsidies (Composition)	22.8 (65%)	26.5 (64%)	29.2 (63%)	30.1 (62%)	32.1 (61%)	8.9
■ Corresponding Local Expenditure (Composition)	12.2 (35%)	15.2 (36%)	17.5 (37%)	18.5 (38%)	20.6 (39%)	13.8
Ministry of Health and Welfare National Subsidized Programs	11.7 (69.6%)	13.9 (69.5%)	13.7 (68.8%)	14.4 (68.2%)	15.5 (67.7%)	17.3
■ Corresponding Local Expenditure (distribution)	5.1 (30.4%)	6.1 (30.5%)	6.2 (31.2%)	6.7 (31.8%)	7.4 (32.3%)	24.4

Source: Internal data from the Ministry of Public Administration and Security and the Ministry of Health and Welfare.

The average annual growth rate of national subsidized programs (10.7%p) across all ministries that have been implemented by local governments since 2008 is higher than the growth rate of local government budgets (4.9%p). Out of the local budgets, NTS, the share born by the national budget, has grown by 8.9 percentage points on an annual average, and the corresponding share of local spending by 13.8 percentage points. On the other hand, the matching proportion of local expenditures to the entire national subsidy for local authorities has increased from 35 percent in 2008 to 39 percent in 2012, showing an annual increase of a single percentage point. In addition, in the case of subsidized programs conducted under the Ministry of Health and Welfare, the matching burden of local

expenditure has expanded from 11.7 trillion won in 2008 to 15.5 trillion won in 2012, comprising almost half (48.3%) of all subsidized programs. The average annual growth rate of the ministry's subsidy programs stands at 17.3 percent since 2008, and the corresponding portion of local expenditure has reached 7.4 trillion won, with the year-on-year growth rate of 24.4 percent. This increase rate was identified to be higher than that of the local budget and all national subsidies. In terms of size, the percentage of local expenditure corresponding to national subsidized programs related to the Ministry of Health and Welfare stands at 7.4 trillion won, below five percent of the entire budget. In conclusion, the public disclosure by the Ministry of Public Administration and Security and the Ministry of Health and Welfare shows that the ratio of national and local expenditures is 68:32, similar to the share disbursed by national and local expenditures in the previous studies related to SOCX estimates (Kim Hyun-A, 2012).

The sectoral fiscal size in social welfare in 2012 reached 9.2 trillion won for basic livelihood security, 4.4 trillion won for support for the vulnerable, 7.7 trillion won for childcare, family and women, 7 trillion won for the elderly and youth, 1.2 trillion won for housing, and 0.3 trillion won for general social welfare. Examining the ratio of national spending to local expenditure suggests a potential deterioration in financial conditions of local governments following further increase in programs for childcare, family and women (for instance, subsidy programs for childcare expenses comprised approximately 40.2% with 20% in Seoul and 50% in other regions) in comparison to programs in sectors with a higher NTS rate, such as those in national basic livelihood security programs (as of 2012, the average ratio stood at approximately 76.5% with 50% of Seoul and 80% of local provinces) and elderly and youth programs.

On the other hand, the share of childcare expenses, a matter of recent controversy, is a supplementary burden that was not reflected into the original budget. The controversy arose in the process of requesting supplementary funds to fulfill additional demand, since the budget formulated by the central government for the provision of free childcare to children aged from 0 to 2 only reflected the additional financial resources for infants and toddlers of the upper 30 percent of income earners based on figures generated in 2011 (assistance for up to the 70th percentile of

households in terms of income), without considering the demand for additional daycare centers. The expected rise in the addition to local expenditure would amount to approximately 1.2331 trillion won, if it includes the further burden posed by the growing demand for utilizing childcare centers due to the expansion of free childcare service recipients, along with childcare costs (491.4 billion won) omitted in the initial budget formulated by the Ministry of Health and Welfare. The Korea Institute of Public Finance re-estimated the share of national treasury based on the ministry's draft budget, resulting in a budget amounting to approximately 2.4 trillion won. Current legislation does not reflect the share of local governments during the budget deliberation process, leading to the lack of exact estimation regarding the financial burden of local expenditure born by local authorities. However, if estimated based on the ratio between the local expenditure burden to the 2010 SOCX estimates, the ratio of local expenditure to national expenditure would be over 1.1 times. Therefore, the total size of 2013 national and local expenditures needed in providing the free childcare program for infants and toddlers under jurisdiction of the Ministry of Health and Welfare is estimated at approximately five trillion won (= 2.4 trillion won + 2.6 trillion won).

<Table II-9> Details of Share of the National Treasury for Supporting Childcare Costs

(Unit: 100 million won)

Classification	2012(A)	2013 Draft		Margin (B-A)	
		Request	Review (B)		%
○ Assistance for childcare costs of infants and toddlers	23,913	27,456	23,805	△108	△0.5
- Ages 0 to 2	18,647 (700,000 persons)	22,794 (812,000 persons)	19,236 (783,000 persons)	589	3.2
- Ages 3 to 4	3,711 (336,000 persons)	3,711 (336,000 persons)	3,711 (336,000 persons)	-	-

Note: This data was produced by the Korea Institute of Public Finance based on the requested amount for the program of assisting childcare costs estimated by the Ministry of Health and Welfare.

Source: Ministry of Health and Welfare-supported program for nurturing infants and toddlers from "Review on estimation of fiscal needs for mandatory expenditure programs," Center for Fiscal Analysis, Korea Institute of Public Finance, August 10, 2012.

C. Decentralization LST

The decentralization subsidy, a type of block grant, was introduced in 2005 to finance resources necessary for the continued implementation of government subsidized programs that had been transferred over to local authorities. The decentralization LST was originally planned for integration into ordinary LST in 2010 but postponed until the end of 2014. Its objectives were to resolve problems in local governments, such as constraints on autonomous fiscal management and reduced efficiency, generally arising from conducting national subsidized programs, as well as to expand the practical authority of local governments.[1)] However, persistent concerns suggest that an increased share of local expenditure in conducting these transferred programs has encroached on available local resources, putting a strain on local governments. As of 2011, the aggregate

1) Presidential Committee on Government Innovation & Decentralization, July 6, 2004.

amount for programs financially supported by the decentralization LST reached approximately 4.92 trillion won, with local expenditure of 3.47 trillion won, 2.4 times higher than the national subsidy of 1.45 trillion won. In 2004, prior to the introduction of the decentralization LST, the size discrepancy was 30 percentage points. National expenditure showed an average annual increase rate of 5.9 percent and local expenditure 15.5 percent, which demonstrates a severe financial pressure upon local expenditure. A look into the revenue sharing of welfare programs within decentralization LST programs indicates that following devolution to local governments, the total demand for social welfare programs has increased by an annual average of 14.4 percentage points with the increase rate in national expenditure (decentralization LST) standing at 8.2 percentage points on annual average, while the increase rate in corresponding local share is 18.6 percentage points. The figures confirm the fact that the fiscal burden upon local governments arising from implementation of decentralization LST program has been worsening in the sector of welfare programs.

<Table II-10> Total Expenditure of Decentralization LST Programs (149 programs)

Classification	Prior to Devolution	Posterior to Devolution (Decentralization LST)							Annual Average Growth Rate
	2004	2005	2006	2007	2008	2009	2010	2011*	
Total Program Expenditure (A)	22,424	28,669	31,349	35,382	42,095	44,824	46,180	49,258	11.9
Decentralization LST (B)	9,755	8,454	10,065	11,387	13,784	12,305	13,187	14,573	5.9
Percentage (B/A)	43.5	29.5	32.1	32.2	32.7	27.5	28.6	29.6	
Local Expenditure (C)	12,669	20,215	21,284	23,995	28,311	32,519	32,993	34,685	15.5
Percentage (C/A)	56.5	70.5	67.9	67.8	67.3	72.5	71.4	70.4	

Source: Internal materials of the Ministry of Public Administration and Security

<Table II-11> Social Welfare Programs (67) Out of Decentralization LST Programs

(Unit: 100 million won, %)

Classification	Prior to Devolution (National Subsidy)	Posterior to Devolution (Decentralization LST)							Annual Average Growth Rate
	2004	2005	2006	2007	2008	2009	2010	2011*	
Welfare Program Expenditure (A)	12,951	16,820	19,201	22,268	26,200	28,134	30,019	33,453	14.4
Decentralization LST (B)	6,107	5,531	6,955	7,955	9,518	8,507	9,509	10,582	8.2
Percentage (B/A)	47.2	32.9	36.2	35.7	36.3	30.2	31.7	31.9	
Local Expenditure (C)	6,844	11,289	12,246	14,313	16,682	19,627	20,510	22,872	18.6
Percentage (C/A)	52.8	67.1	63.8	64.3	63.7	69.8	68.3	68.1	-

Note: In 2011, 67 programs were reduced to 52 through restructuring.
Source: Internal materials of the Ministry of Public Administration and Security

Since decentralization LST programs are transferred programs, local authorities bear no responsibility for disbursement, but the level of local spending that was needed when the programs belonged to subsidy programs has been maintained. This carries meaningful implications for future management of the subsidy system. Welfare programs face inherent limitations in flexibly managing financial resources, partly due to the high difficulties in adjusting the extent of demand and supply in welfare resources and its beneficiaries, following the initiation of a program. A block grant program should allow priorities to be adjusted within the program, which would allow local governments to plan, abolish and consolidate projects and programs at discretion. However, it is structurally impossible for local governments, to set priorities for welfare programs in terms of fiscal efficiency, due to their burden of providing financial

resources. Such priorities are determined by local residents' needs for welfare services, and beneficiaries expect existing welfare benefits to be offered continuously. This reality has made local governments reluctant to curtail "the share of local expenditures" for programs outside of their legal duty. Therefore, despite the shift of welfare programs included in decentralization LST programs to block grant programs, their de facto operation as national subsidized programs appears set to continue. As described above, due to inflexibility in social welfare programs, the ratio of non-welfare programs to decentralization LST (national treasury subsidy), which stood at 37.4 percent at the time of introduction, declined to 27.4 percent in 2011. The percentage of non-welfare programs to the aggregate amount, including matching local expenditures, which stood at 42.2 percent in 2004, has steadily declined to 32.1 percent in 2011. Such figures highlight ongoing attempts to enhance efficiency in the management of non-welfare programs, considering the inherent difficulty of achieving fiscal efficiency in welfare programs.

<Table II-12> Changes in the Proportion of Non-social Welfare Spending to Social Welfare Spending

(Unit: 100 million, %)

	2004	2005	2006	2007	2008	2009	2010	2011
Decentralization Subsidy	9,755	8,454	10,065	11,387	13,784	12,305	13,187	14,573
Social Welfare	6,107	5,531	6,955	7,955	9,518	8,507	9,509	10,582
Non-social Welfare	3,648	2,923	3,110	3,432	4,266	3,798	3,678	3,991
(Percentage)	37.4	34.6	30.9	30.1	30.9	30.9	27.9	27.4

Source: Internal materials of the Ministry of Public Administration and Security

D. Other Proprietary Programs and Available Resources

Upon the adoption of the decentralization LST, there were concerns that the devolution of welfare programs to local governments might lead to the underprovision of public goods, whereby the extra financial strain

created by devolved programs could force local governments to neglect their own programs. An examination of local government programs shows that, contrary to such concerns, welfare programs have exhibited a relatively stable level of budget flexibility, in terms of the size of decentralization LST programs over the past seven years.[2] The percentage of local governments' proprietary programs by function demonstrates that their proprietary programs for social welfare budget were not reduced, while other programs were on a steady decline. This indicates that local governments have curtailed non-welfare programs in order to enhance fiscal efficiency, and also displays the priorities in the fiscal demand of local governments. As shown in [Figure II-4]. Percentage of 2012 Local Governments' Expenditure Relative by Function to 2008, the welfare sector increased to 26.4 percent from 15.6 percent, a 10.8 percentage-point increase, while SOC and general public administration increased by 6.2 percentage points and 3 percentage points, respectively.

2) Jo Gi-hyeon (2007) raised concerns that the deteriorating conditions of local annual revenues might lead to a reduction of annual expenditures for social welfare programs rather than non-social welfare programs because of the high income elasticity of public social expenditure.

<Table II-13> Ratio of Local Proprietary Programs by Function

(Unit: trillion won, %)

	2008	2009	2010	2011	2012
Total Expenditure (based on aggregate)	161.2	178.1	183.2	185.5	198.9
Proprietary Programs for Economic Development	21.8	23.6	20.0	17.9	18.7
	13.52%	13.25%	10.93%	9.63%	9.41%
Proprietary Programs for Social Welfare	5.3	5.7	6.0	5.8	6.1
	3.3%	3.2%	3.3%	3.1%	3.0%
Culture & Tourism + Proprietary Programs for Education	10.0	11.6	12.0	12.1	13.1
	6.23%	6.52%	6.56%	6.55%	6.59%
Other Proprietary Programs (reserve fund included)	31.3	33.0	31.9	31.5	34.3
	19.40%	18.53%	17.43%	16.97%	17.26%

Note: Summary of Local Budget: Economic development = transport and traffic + land and regional development + agriculture, forestry and fisheries; social welfare = social welfare + health; others = general public administration + public order and safety + environmental protection + industry, small and medium-sized enterprises + science and technology + reserve funds

Source: *Annual Summary of Local Budget*

On the other hand, the size of local governments' fiscal expenditure by sector and function demonstrates their priorities in the allotment of financial resources. In the entirety of sectoral budgets, the share of local authorities (city / county / district) for social expenditures constituted approximately 6 trillion won, with 6.4 trillion won for "land and regional development," 5.7 trillion won for "transport and traffic," and 4.4 trillion won for "agriculture, forestry and fisheries." In absolute terms relative to 2008, these resources were on a decline. In terms of the size of financial resources, 3.5 trillion won and 8.5 trillion won were disbursed for the sectors of "culture and tourism" and "environmental protection," respectively, showing a growth in the absolute scale. The budget for "general public administration," however, amounted to approximately 5.7 trillion won, close to welfare funds. As for the budget for this sector in 2012, cities / counties / districts increased their disbursements to 5.7 trillion won from 5.1 trillion won in 2008, and city / provincial expenditures also increased to 6.9 trillion won from 5.7 trillion won. It is somewhat unusual

that in terms of the absolute scale and ratio of fiscal expenditure for the general public administration sector, local governments have made no remarkable attempts to reduce their fiscal burden.

As for the percentage of local fiscal burden, "environmental protection" and "land and regional development" constituted the largest portion of expenditures across lower level local authorities (city / county / district), with 55.1 percent and 51.3 percent respectively (excluding reserve fund and miscellaneous programs). The expenditures by cities / counties / districts for social welfare services amounted to six trillion won, or four percent of the entire local finance budget of 151 trillion won. In 2009, the financial crisis facing autonomous districts resulted in the failure to establish a consistent standard for the scale of available resources regarding the size of financial resources and implementation, which hindered the inspection of financial situations across lower level local authorities.[3] The sector of general public administration showed the highest share of local expenditures, followed by SOC (economic development = transport and traffic + land and regional development + agriculture, forestry and fisheries) standing at 74.9 percent and welfare with 50 percent. The share of local expenditure in the provision of welfare services exhibited a modest decline in 2012 compared to 2008. The size of expenditures by function and the share of local expenditures as a whole clearly demonstrate the pursuit of efficiency of other financial resources for the purpose of securing resources for welfare services. On the other hand, the share of local expenditure on the level of cities / counties / districts indicates that the size of local spending for "environmental protection," "SOC-related sector" and "general public administration" has been maintained, which highlights the need for future efforts to improve fiscal efficiency in non-welfare sectors.

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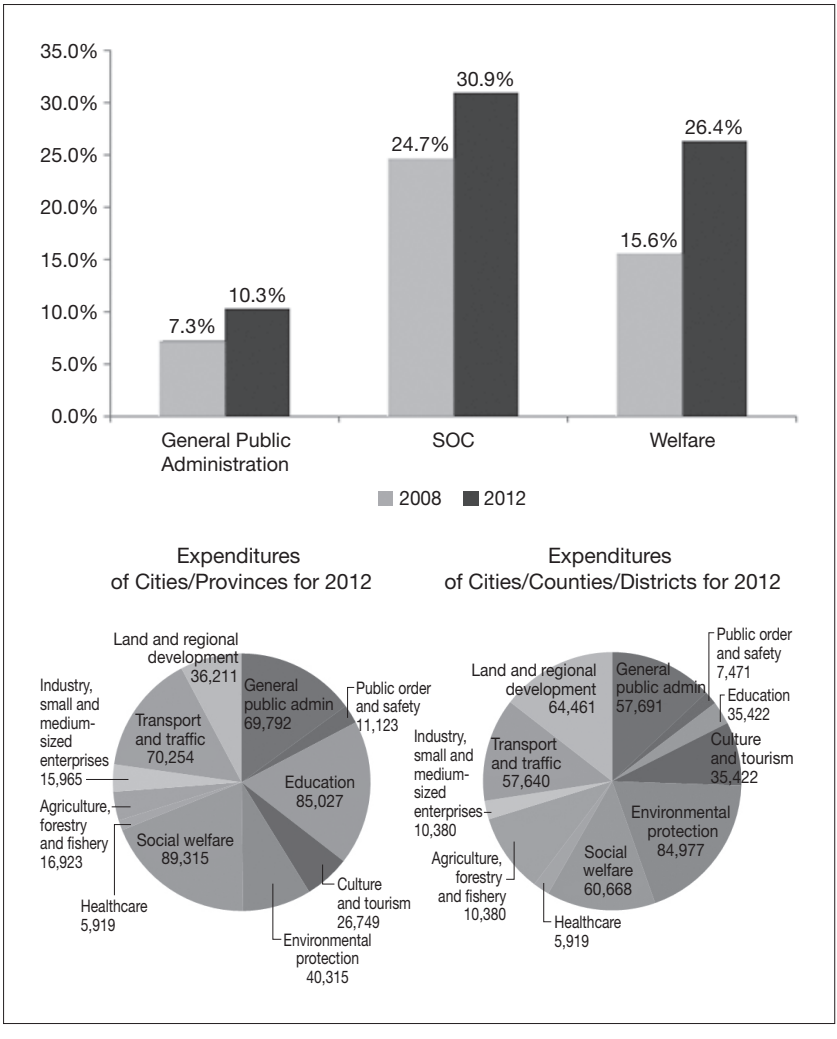
3) A previous study (Kim Hyun-A, "The Current Status of Local Finance for Welfare," Ministry of Strategy and Finance program outcome report, 2008, pp. 48-58) analyzed available resources by conducting a due investigation into individual autonomous authorities in Nowon-gu in Seoul, Haenam-gun in South Jeolla province, Dongducheon-si in Gyeonggi province, Buk-gu in Busan, Buk-gu in Gwangju.

[Figure II-4] Proportion of 2012 Local Expenditures by Function in Comparison to 2008

(Unit: %)



III

Issues Regarding the Central-Local Fiscal Share in Social Expenditure

1 A Summary of Previous Studies

Previous studies focused on the recent growth in fiscal pressure for social welfare upon local authorities, and the discussion of solving this problem has been restricted to the restructuring of NTS. The findings from major studies conducted by Seo Jeong-seop (2011), Lee Chae-jeong (2011), Choi Seong-eun (2010), Park In-hwa (2010), Lee Jae-won (2007), Park Go-un and Park Byeong-hyeon (2007) and Kang Hye-Gyu et al. (2006) can be summarized as follows: first, a basic NTS rate needs to be raised to improve the fiscal structure of local authorities; second, differential subsidy rates should be improved to alleviate the regional gap. In particular, the relevant discussion largely concerns the inter-regional gap, and close scrutiny of the issue allows the projection that expanding the NTS to a greater degree than the LST may cause the inter-regional gap to deepen.

Therefore, this study asserts that it is necessary to explore the increase of an basic NTS rate and restructuring of the differential subsidy rate within the framework of reorganizing the IFT. This is because local governments do not determine the details or pace of their increasing financial share, which are instead decided by the central government and the general public's demand for local public goods, so the improvement of NTS alone is not enough to solve intergovernmental fiscal sharing

problems. In addition, since current welfare fiscal pressures stem from the existing fiscal structure among government levels, there is a need to examine trends of social expenditure as well as other fiscal expenditure patterns.

Furthermore, previous related studies regarding intergovernmental budgeting management, mainly based on U.S. sources, suggest a new approach to the sharing of welfare services provision between the central and local governments.

The study is less related to the presentation of detailed plans for improvement, but provides an elaborate explanation regarding the characteristics as well as merits and demerits inherent in the scheme of social expenditure managed through central government intervention in lower governmental levels. This is meaningful in contributing to the discussion on the sharing of social expenditure between the central and local governments to reflect a very complex reality (fiscal crises, institutional changes, etc.), rather than presenting superficial argument (Baicker et al., 2011).

2 Major Issues

A. The Raising of Basic NTS Rate

Question 1: As for the intergovernmental share of welfare funding, should the central government increase financial support to local governments?

The preceding discussions concerned the rate of increase in the share of social expenditure disbursed by local governments, and previous related studies also focused on the trend of increase persisting since 2005. However, it is difficult to draw accurate policy implications based upon growth rates in sectors that are smaller in absolute terms, due to "based effects." The rationale for increasing the basic NTS rate can be summarized as "the increase in national spending." First, the inevitable expansion of welfare services has led to the acceptance of the feasibility for

increasing the national share incurred by programs categorized as national minimum services. Seo Jeong-seop (2011) presented overseas cases where the central government increased the national outlay for the provision of welfare services.[4] Second, the major fiscal stress currently placed on local authorities stems from the implementation of national subsidized programs and their own welfare programs, and in order to alleviate such fiscal strains, national subsidies must be sharply increased. This stance is found in most studies on social welfare policies with a focus on decentralization LST,[5] and the case for increasing national expenditure for childcare, one of the most heated issues on the subject, leads to the insistence of increasing NTS rates as a whole.

The two grounds for argument are solely focused on the expansion of welfare programs. In principle, a reasonable examination should associate overall financial conditions in the macro-economic context in conjunction with existing vulnerabilities in the fiscal structures of local governments shaped by intergovernmental financial relationships. Fiscal strain on local governments was triggered by expanded demand for welfare services, but if the existing intergovernmental structure proves to be a larger problem, resolving problems in the welfare service sector would not prevent the reoccurrence of similar problems in other sectors such as education.

B. Discussion to Reform Differential Subsidy Rates for Alleviating Inequality Among Regions

Question 2: Is it necessary to reform and expand the differential rate within NTS?

A key regional issue, interregional inequality in the provision of welfare services, has spurred multiple related studies to comment on the deepening disparity in social expenditures (Lee Chae-jeong, 2001; Choi

4) Cases detailing share of the national and local expenditures in major countries are provided in the following chapter.

5) Seo Sang-beom and Hong Seok-ja (2010); Jang Deok-hui (2010); Kim Su-yeong and Seong Hyanag-suk (2010) et al.

Seong-eun, 2010). To remedy this situation, recommendations include the overall expansion of the current differential subsidy rate system. The policy ground for differential rates of subsidies lies in recognition of gaps of the standard rate of subsidies between Seoul and other provinces, and furthermore the varying financial capacities by region, thereby providing different rates for subsidies to more affluent local governments and those relatively less so.[6] This implies that the size of substantial resources available differs among local governments, so that applicable subsidy rates could vary depending on policy interpretations regarding financial disparity among regions. Based on the national subsidized programs under differential rates, which were studied and formulated by the National Assembly Budget Office (Lee Chae-jeong, 2012, p. 12), among 44 programs under which different basic rates of subsidies were applied to Seoul and other regions, 13 programs were found to be eligible for differential subsidy rates. Given that the number of NTS programs was 146 in 2011, approximately 31.2 percent of such programs belonging to the welfare sector were applied different basic NTS rates between Seoul and other regions, and among them, 8.9 percent of programs were the target of differential subsidy rates.

6) Article 9 of the Act on the Budgeting and Management of Subsidies prescribes that "projects eligible for subsidies, classification of expenses, and rate and amount of subsides from the national treasury shall be stipulated by the budget every year: Provided, That the projects eligible for subsidies and the rate of subsidies from the national treasury, which is the basis applied for each subsidized project in application for appropriations of subsidies in the budget and in compilation of the budget shall be determined by Presidential Decree, in cases of subsidies directed to local governments." (Wholly amended on July 15, 2011) Article 10 suggests the criteria for "application of differential subsidy rates" and projects not eligible for subsidies.

<Table III-1> NTS Programs with Differential Subsidy Rates in Social Welfare Sector

(Unit: number of programs)

Differential Subsidy Rate	No. of Programs	Note
Applied	13	Living wage, self-support tax deduction, assistance of childcare cost for infants and toddlers, etc.
Not Applied	31	Emergency aid, disability pension, grain discount for the lower income bracket, etc.
Total	44	

Source: Edited data from the Ministry of Health, Welfare and Family Affairs, previously reorganized by the National Assembly Budget Office (2011).

Based on the current circumstances examined above, academia and research institutes have presented the following opinions regarding this matter (Gu In-hoe, 2010; Lim Seong-il, 2008; Park Wan-gyu, 2012; Kim Tae-il, 2012, etc.). First of all, although the standard for determining the application of differential subsidy rates depends upon "the index of social welfare cost" and "financial independence rate," the studies highlighted their ambiguity and suggested their elaboration, in order to allow the "overall expansion of the differential subsidy rates system."[7] A recent study on evaluation of the existing system (Kim Tae-il, 2012) analyzed changes in budgets for basic livelihood security and childcare by using the cases of autonomous districts since the introduction of differential subsidy rate in 2008. The conclusion was that for autonomous districts with financial vulnerabilities under an increased subsidy rate, the percentages of national and local expenditures (city / district) grew in comparison to districts under less financial strain, while the percentage of the their own financial resources declined. Examining autonomous districts in Seoul demonstrated that differential subsidy rates had proven effective. On the other hand, another study by Lim So-yeong (2012) concluded that the implementation

7) The National Assembly Budget Office (2012, p. 30) did not view the current criteria for the application of differential subsidy rates, i.e. fiscal autonomy and fiscal independence, as determinant factors for local expenses of lower level local authorities, and suggested that other social welfare-related indexes should be reflected.

of the differential subsidy rate system contributed to the deterioration of three inequity indicators; the self-finance ratio, fiscal capacity index, the ratio of fiscal capacity to expenditures disbursed by cities / districts.

However, a clear examination of the effect of the differential subsidy rate system can only be possible through an accurate estimation of resources available to each local government. The budget ratio for social welfare service based on data of each local authority shows variations according to each "level of local government," thereby resulting in a varying scale of available resources by each level of local government. Except for metropolitan cities, 67 percent of the local authorities allocate 30 percent of local budgets for welfare services.[8] Naturally, the number of local authorities with the annual ratio of welfare budgets standing at 30 percent has been in decline. Proper grasp of available resources per each level of local government is evident in its effect on other fiscal indices. A fiscal independence level is an indicator that represents local authorities' own source revenues, and the fiscal autonomic level is an amount of available resources that can be practically utilized with discretion. Although clear differences exist between cities, counties and districts with regards to the level of fiscal independence as a percentage of independently sourced revenue (local tax + non-tax revenue), fiscal independence following the allocation of LST shows a relative parity in fiscal autonomy at around 80%, aside from autonomous districts, in which the ratio of fiscal autonomy has been in a steady decline of over 10 percentage points since 2007. Therefore, an increase in social expenditure was already expected to lead to a growing fiscal burden on autonomous districts, considering that welfare services were the main affairs of autonomous districts and the ratio of national grants was relatively low. The recent trend of a growing fiscal demand for welfare services has served as an opportunity to confirm the structural vulnerability of local finance in Korea. In conclusion, this paper prioritizes

8) The previous study on resources of individual local authorities (Kim Hyun-A, 2009) found that as for the ratio of their own programs to the budget over the period from 2004 to 2007, the ratio of their own welfare programs to their entire own programs was not over 20 percent, except for autonomous districts in metropolitan areas. In addition, the ratio of their own programs for social welfare to the entire budget stood at two percent in 2007 and around three percent in 2008.

the systematic estimation of available resources by city / province and city / county / district prior to an estimation based on the average of all local authorities.

<Table III-2> Distribution of Composition of Social Welfare in the General Accounts

(Unit: number of authorities, %)

Classification	Total	Composition	Cities/ Provinces	Cities	Counties	Autonomous Districts
Total	244	100	16	74	85	69
Below 10%	1	0	-	-	1	-
Below 10-20%	86	35	1	12	73	-
Below 20-30%	78	32	13	49	11	5
Below 30-40%	30	12	2	13	-	15
Below 40-60%	21	9	-	-	-	21
Above 60%	28	12	-	-	-	28

<Table III-3> Composition of Budget Expenditure of General Accounts by Local Authority and Structure

(Unit: %)

	Special Metropolitan Cities	Metropolitan Cities	Provinces	Special Self-Governing Provinces	Cities	Counties	Districts
General Public Admin.	11.6	7.6	10.7	12.2	7.6	6.1	6.7
Public Order and Safety	1.5	1.9	6.0	4.1	1.7	2.9	0.8
Education	35.3	18.7	23.4	1.7	2.2	1.1	1.7
Culture and Tourism	4.1	9.4	3.5	7.5	6.9	7.0	2.4
Environmental Protection	4.5	4.0	0.4	4.6	6.1	6.8	3.9
Social Welfare	13.0	5.5	1.9	11.5	26.8	17.1	41.9
Healthcare	1.9	1.0	1.3	1.2	1.9	1.9	2.5
Agriculture, Forestry and Fishery	0.1	1.7	7.7	17.8	8.8	21.6	0.9

<Table III-3> Continue

(Unit: %)

	Special Metropolitan Cities	Metropolitan Cities	Provinces	Special Self-Governing Provinces	Cities	Counties	Districts
Industry, Small and Medium-sized Enterprises	2.6	7.0	3.5	3.8	2.3	1.8	0.6
Transport and Traffic	4.5	18.9	13.5	13.8	9.7	5.2	2.1
Land and Regional Development	5.3	6.5	3.8	3.1	7.4	10.1	2.5
Science and Technology	0.0	0.5	0.6	0.1	0.0	0.0	0.0
Reserve Fund	1.8	2.2	3.3	1.0	2.0	2.0	1.2
Others	13.8	15.2	20.4	17.7	16.7	16.3	32.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *Summary of Local Budget for Fiscal Year 2012*, p. 14.

<Table III-4> Share of Local Expenditure of NTS-based Programs in Social Welfare Sector

(Unit: %)

Program Title	Special Metropolitan Cities/ Metropolitan Cities		Provinces	
	Cities	Districts	Provinces	Cities/ Counties
Living Wages, Housing Benefits (Unit: Childcare Program for Infants and Toddlers)	50	50	50	50
Local authorities' (cities/counties/districts) social security index is more than 25 and fiscal autonomy index is below 80 based on the final budget of the second year before the relevant fiscal year	70	30	70	30
Local authorities' (cities/counties/districts) social security index is below 20 and fiscal autonomy index is more than 85 based on the final budget of the second year before the relevant fiscal year	More than 30	Less than 70	More than 30	Less than 70

<Table III-4> Continue

(Unit: %)

Program Title	Special Metropolitan Cities/ Metropolitan Cities		Provinces	
	Cities	Districts	Provinces	Cities/ Counties
Enhancement of the Functions of Welfare Institution for Persons with Disabilities and Daycare Centers	50	50	50	50
Strengthening of Function of Homeless Care Institutes	100	0	50	50
Acute Communicable Disease Control	100	0	100	0

Source: The appendix of the rules regarding expenses sharing among local governments pursuant to Article 33 (1) of the Enforcement Decree of the Local Finance Act.

<Table III-5> Differential Subsidy Rate for Basic Old-Age Pension

Classification		Percentage of the Elderly[1]		
		Below 14%	14~20%	Above 20%
Fiscal Autonomy[2]	Above 90%	40%	50%	60%
	80~90%	50%	60%	70%
	Below 80%	70%	80%	90%

Note: 1) Refers to the percentage of the population aged 65 or over to the entire population.
2) Refers to the percentage of the combined amount of local taxes, non-tax receipt, LST, adjustment LST to the budget expenditure of general accounts.
Source: National Assembly Budget Office, *Fiscal Year 2009 Settlement Analysis by Ministry*, 2010. Appendix of Article 16 of the Enforcement Decree of the Basic Senior Pensions Act.

The result of applying the differential subsidy rate is as follows. Across lower level local authorities in cities, counties and districts, the budget for social welfare per capita stands at 337,000 won for autonomous districts and 838,000 won for counties; for the ratio of per capita social expenditure to local tax, counties show 1.4 million won, 2.4 times higher than that of autonomous districts. In particular, per capita social expenditure stood at 1.61 million won on average in 2006, but in 2010 the amount reached 1.74 million won in autonomous districts and 2.31 million

won in counties. Currently, the local tax revenue is structured as follows: LST are allocated to meet a certain level of finance after adjusting for the small portion of local revenue collected through local taxes, and then levels of social expenditures are adjusted through the NTS. Social welfare budget per capita is found to be concentrated on regions with poor fiscal capacity, wherein the LST is provided on top of the NTS as a result of differential subsidy rates. In particular, it can be presumed that counties with a low population density are supported with a large portion of LST and NTS. This suggests that this study should examine the NTS as well as LST which is primarily responsible for achieving social equity, along with IFT as a whole.

<Table III-6> Fiscal Sharing Structure of Welfare Budget by Local Government

	Per Capita Social Welfare Budget (10,000 won)	Ratio of Per Capita Welfare Expenditure to Per Capita Local Shared Amount (%)	Per Capita Social Welfare Expenditure (10,000 won)
Autonomous Districts	33.7	58.1	174.4
Cities	51.5	70.7	214.8
Counties	83.8	140.4	231.4

Note: The number of recipients of social welfare was drawn from sources of veteran care (Ministry of Patriots and Veterans Affairs), infants and toddlers aged 0 to 4 and the senior citizens aged above 65 (registered population), those registered as persons with disability (Ministry of Health and Welfare). (See Go Gyeong-hwan et al. (2011)).

Source: *Summary of Local Budget for Fiscal Year 2012*

IV

Analysis on the Share of Social Expenditure Between Central and Local Governments

1 Cases of Major Advanced Countries: Proportion of National Subsidy in Social Expenditure and Reorganization of IFT

A. Significance and Limitations in Analyzing Data Collected by International Organizations on Central and Local Share of Social Expenditure

As an analysis on the above-mentioned Question 1, this chapter attempts to induce proper policy measures by examining the proportion of national subsidies out of total social expenditure in OECD countries. According to the examination, the proportion varies among member countries, and central governments have maintained pre-economic crisis levels in their welfare spending since the 2007 economic crisis.[9] Several organizations in South Korea have compared the total social expenditure in Korea with those of other countries; however, there have been few international comparative studies of intra-governmental contributions to

9) "…Economic crises bring about significant deviations between social spending as related to trend and actual GDP…Nevertheless, levels remain higher than recorded prior to the economic crisis; on average across the OECD public social spending as a percent of GDP was 3 percentage higher in 2010 than in 2007 (22.2% compared with 19.2% in 2007)…" (Adema (2011), p.15, p.10)

total social expenditure. An international comparison of central and local allocation of social expenditure is difficult because of different attitudes towards the social security system. Social security is not financed by working budgets across central and local governments, but instead financed by pensions and national insurance that are managed through funds or special accounts. In addition, interpretations will differ according to different perspectives regarding whether social security is a component of the central government or general government budget, or an independent budget in itself. Moreover, as will be seen later in this chapter, each OECD member country reported data based on different criteria despite OECD guidelines on statistical figures, thereby posing problems such as some countries independently including social security in the central budget, or difficulties in guaranteeing the consistency of statistical figures in specific areas (e.g. healthcare, education, etc.).

For this reason, this paper aims to ascertain the exactitude of the statistics by comparing the basic source material provided by the OECD National Accounts, with data from individual divisions within the OECD.[10] For example, OECD National Accounts statistics (based on the UN COFOG standards) can be compared with the OECD Health division's data, because each division data specifies the shares of central and local government social expenditure. Therefore, if the shares specified by OECD National Accounts statistics and OECD divisional data are matching, the former can be regarded as reliable information.

10) For an international comparison of social expenditure, the OECD Social Expenditure Database (SOCX) can be used. However, it makes no distinction between central and local governments and thus analyzing central and local social expenditures is impossible. OECD Health Division database is "OECD Health Expenditure and Financing."

<Table IV-1> Central and Local Government Social Expenditure in OECD Countries and the Proportion of Tax Revenue of Large Cities (2009)

(Unit: %)

Governm-ent Type	Country	Ratio of Local Tax to Total Social Expenditures			Ratio of Local Tax to Total Tax Revenue	Ratio of Government Spending to GDP		Ratio of IFT to GDP	Concen-tration of Tax Revenue in Large Cities (08)	Total Tax Revenue as Percent-age of GDP (09)
		Central	Local	Social Security		Central	Local			
Federal State	Austria	33.5	19.7	46.8	6.9	27.1	18.2	7.2	27.4	27.8
	Belgium	14.4	15.1	70.5	15.4	29.9	22.4	7.5	32.1	28.7
	Germany	22.4	16.6	61	48.5	14.9	21.4	4.5	6.1	22.9
	Switzer-land	17.3	30.8	51.9	52.8	10.7	21.2	6.7	32.1	22.6
	U.S.	73.2	26.8	0	52.2	26.4	19.6	6.1	6.2	17.6
Federal State Average		32.2	21.8	46	35.2	21.8	20.5	6.4	20.8	23.9
Unitary State	Czech	65.6	7.7	26.6	2.1	30.9	12.1	4	23.1	19.4
	Denmark	31.7	61.2	7.1	26.4	41.4	37.2	-	33.4	47.1
	Estonia	60.9	10.4	28.7	16.8	32.7	11.4	-		22.8
	Finland	27.4	29.6	43	34.1	27.9	22.7	5.5	27.9	29.9
	France	14.8	6.3	78.9	29.6	23.1	12.2	4	18.7	25.7
	Hungary	35.3	10.6	54.1	9.7	34	12.3	6.4	28.9	27.4
	Iceland	57.7	9.1	33.2	27.3	38.1	13.6	-		30.8
	Ireland	73.8	2.8	23.4	3.8	39.6	7.3	4.3	39.0	22.2
	Israel	57.2	4.6	38.2	9.7	39.1	6.1	-		26.0
	Italy	27.7	21.2	51	22	1.9	16.6	7.8	13.1	29.7
	Japan	100	0	0	46.6	-	-	2.5	27.4	15.9
	South Korea	30.5	22.8	46.7	21.5	21.8	15.1	9.2	49.2	19.7
	Luxem-bourg	42.5	0.8	56.8	6.4	30.6	5.6	2.3		26.3
	Nether-lands	30.7	9	60.3	5.8	30.8	17.6	5.3	22.0	24.4
	Norway	77.2	22.8	0	14	37.2	15.4	4.7	22.6	32.8
	Poland	28.7	13.2	58.1	20.7	24.9	14.7	-	8.4	20.4
	Portugal	50.1	3.3	46.6	7.6	36.9	7.4	3.2	26.4	21.6

<Table IV-1> Continue

(Unit: %)

Governm-ent Type	Country	Ratio of Local Tax to Total Social Expenditures			Ratio of Local Tax to Total Tax Revenue	Ratio of Government Spending to GDP		Ratio of IFT to GDP	Concen-tration of Tax Revenue in Large Cities (08)	Total Tax Revenue as Percent-age of GDP (09)
		Central	Local	Social Security		Central	Local			
	Slovakia	30	2.5	67.5	5.1	23.6	7.2	-	21.6	16.3
	Slovenia	35.5	6.3	58.2	16.7	30.9	10.1	-		22.4
	Spain	7.3	35.3	57.5	54.8	20	7.2	8	13.6	18.6
	Sweden	40.8	39.4	19.8	41.6	31	26.4	5.2	21.1	35.3
	U.K.	85.5	14.5	0	6.6	47.2	14.4	8.8	21.9	27.6
Unitary State Average		46	15.2	38.9	19.5	32	13.9	5.4	24.6	25.6
Average Across OECD Countries		43.4	16.4	40.2	20.9	30	15.2	5.7	23.8	24.6

Note: The ratio of IFT to GDP is based on 2006 data.
Source: OECD National Accounts statistics (2009); Hanjorg Blochliger, Josette Rabesona (2009).

<Table IV-2> Share of Central and Local Government Expenditure on Health by Different Data Sources (2009)

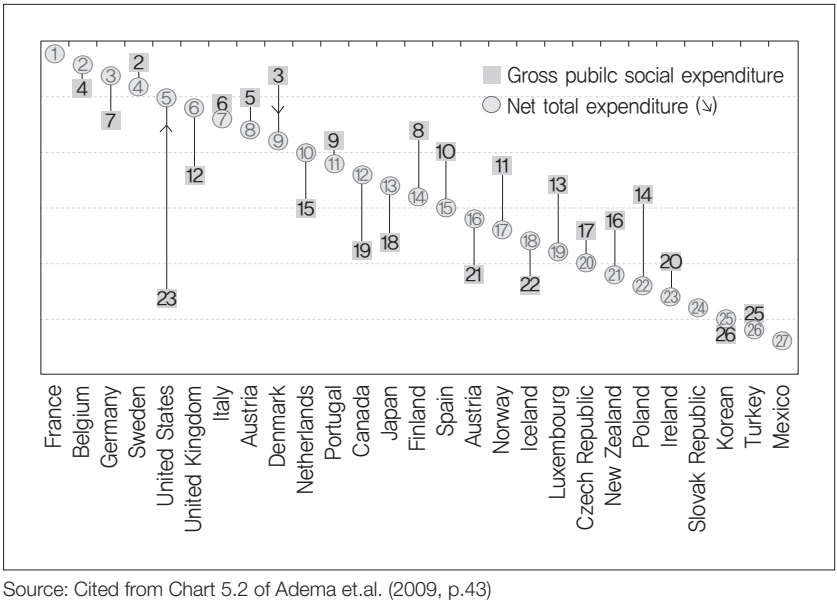
(Unit: %)

Governm-ent Type	Sources of Material	OECD Health Committee			OECD National Accounts (Health Sector)		
	Country	Central	Local	Social Security	Central	Local	Social Security
Federal	Belgium	3.2	12.0	84.9	12.8	4.0	84.2
	Switzerland	0.6	31.0	68.4	2.4	97.7	0.0
	U.S.	2.3	9.6	88.1	37.2	26.4	36.4
Unitary	Denmark	1.0	99.0	0.0	1.9	98.1	0.0
	France	2.8	4.4	92.8	2.0	1.1	96.9
	South Korea	14.8	6.0	79.2	41.3	9.7	49.0
	Spain	1.2	92.6	6.3	4.5	92.2	2.3
	Sweden	2.8	97.2	0.0	17.3	82.7	0.0

The result of the comparison suggests that the share of central and local government expenditure on health differs by source of material within the OECD. For example, as seen in <Table IV-2>, central-local-social security ratios of the two source materials differ in federal states like Belgium, Switzerland, and the U.S. Although South Korea is a unitary state, federal states like Germany and Canada are of particular interest, and the lack of one set of source materials from the two countries did not allow a meaningful comparison.[11] Moreover, as will be shown in the next chapter, there are obvious errors in these data sets: for instance, the ratio of social security is shown as "0" in the U.S., Japan, and Norway. Meanwhile, despite similarities found in the data across some unitary states, such as Denmark, Sweden, France, Spain and Sweden, other unitary states including South Korea showed a radical divergence. In principle, OECD National Accounts statistics are based on the total amount of social spending by central and local governments, and local government figures include central government subsidies. So, if the amount of IFT is huge in a country, local health spending is likely to be measured excessively. In addition, the change in statistics figures from 2000 to 2009 was found to be inconsistent, revealing limitations to use the OECD National Accounts statistics as basic material for this study.

11) Federation, or federal state, can be divided into cooperative federation (Germany, Canada, etc.) and competitive federation (U.S., Switzerland, etc.). In terms of public finance, Germany and Canada are worth South Korea referring to (Baskaran, 2012).

[Figure IV-1] Rank of Countries by Gross Public Social Expenditure and Total Social Expenditure vs. GDP (2007)



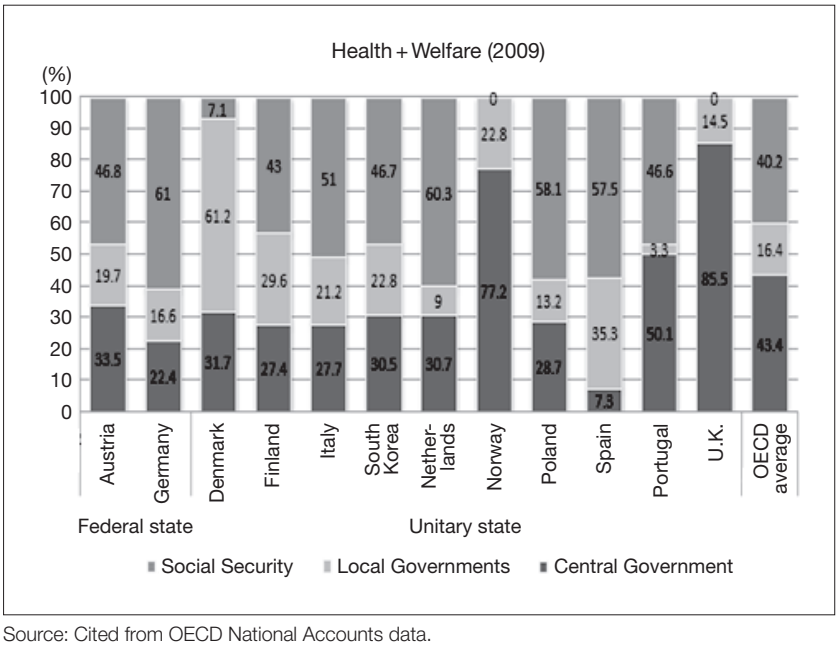
Source: Cited from Chart 5.2 of Adema et.al. (2009, p.43)

The concept of "tax expenditure" also needs to be examined to discuss the share of central and local government expenditure on social welfare. With regard to this matter, there is an estimation calculated by the OECD. The organization has put an estimation of net social expenditure that included central and local government tax expenditures as well as social expenditures. It confirmed that when tax expenditures were included in existing social expenditures, there was a change in the country ranking in terms of social expenditure. According to an estimation of 2010 tax expenditures in South Korea by Kim Hyun-A (2012) there was a correlation between tax expenditures and total tax revenue as a percentage of GDP in major countries. It was shown that a lower percentage of total tax revenue as a proportion of the GDP resulted in a greater scale of welfare spending, of which the U.S. is a prime case in point. Meanwhile, North European countries, such as Denmark, Finland and Sweden where tax revenue burden ratio was markedly high and the size of tax expenditure was

relatively small, were downgraded on the OECD ranking when adjusted for the net social expenditure. The finding of the study indicates that a country provides social welfare support to its people in various ways, and that all social expenditure spent in the public sector are closely associated not only with social expenditure by central and local governments and the social security system, but also with the social welfare-related tax incentive system (e.g. tax exemptions, tax reduction, income tax deduction and tax credits). Therefore, it is reasonable to include tax expenditures in central and local government expenditures on social welfare. For reference, national and local tax expenditures on social welfare in South Korea account for more than 1 percent of GDP, signifying a high proportion of tax expenditures on social welfare among total social expenditures. In conclusion, it appears that meaningful implications would be made possible through the simultaneous identification of each country's economic status, types of government spending, central and local government spending structure, and social welfare items. The next chapter will examine the share of central and local government expenditure on welfare and the process of reorganizing the IFT in other countries.

B. Drawing Implications Through Case Analysis

[Figure IV-2] Share of Central and Local Government Social Expenditure by Country



Source: Cited from OECD National Accounts data.

As a result of examining case studies by country, close association was found between adjusting the share of central and local government social expenditures in major countries and intergovernmental fiscal relations. Analyzing the simplistic comparison of the share of government welfare spending, however, limits the scope within which implications can be drawn, because intergovernmental fiscal relations are affected by a combination of population distribution and political, social, and economic situations. Therefore, this chapter examines the way in which central governments of welfare-advanced countries like Sweden and Norway share their social expenditures with local governments, as well as the process of reorganizing IFT. It has also studied the case of the U.S., where the total tax revenue as percentage of GDP is low, and the case of Japan whose systems

are similar to South Korea's in many aspects. Through the examination, this study attempted to draw implications for increasing the NTS, an important consideration in adjusting the share of social welfare budget between central and local governments.

First, it was found that the economic recession and the ensuing effort to increase social expenditures, both of which must have led to budget fighting between central and local governments, drove these countries to change the share of social expenditure between central and local governments and to reorganize the IFT. A study by Jeon Byung-mok and Park Sang-won (2011) on previous research on revenue policy for social welfare examined an increase in public spending and an increase in finances for social welfare, and found that there was an increase in public spending before and after the economic recession. The study also found that as the economy recovered, public spending returned to pre-economic recession levels. These findings imply that relatively low public spending in South Korea is symptomatic of Korea's inexperience in handling financial difficulties compared to other advanced countries, and that future exacerbation of the Korean economy may lead to an increase of public spending for aggressive labor policy (e.g. towards unemployment) and the poor (e.g. basic livelihood subsidy recipients and vulnerable groups).

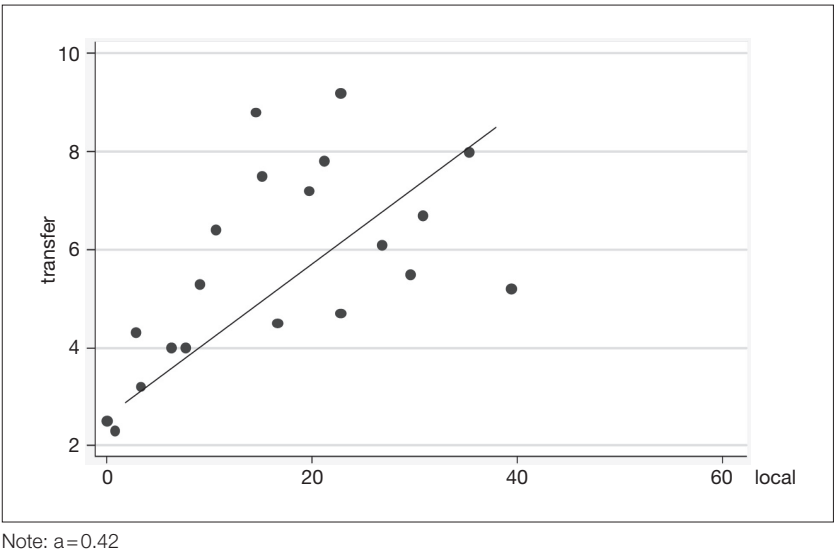
Second, the paper aimed at examining the way in which Sweden and Norway boosted the efficiency of government subsidies and found that a change in central and local government responsibilities for welfare services occurred at the same time. Central governments of Sweden and Norway used block grants to improve fiscal efficiency and addressed fiscal difficulties arising from an increase in social welfare spending. During that process, relatively inefficient earmarked grants were cut, whereas earmarked grants with clear demands were maintained. Such a reorganization of the IFT was accompanied by a change in central and local government responsibilities for social welfare; specifically, responsibility for healthcare services was transferred to the central government from local authorities (Overbye et al., 2006).

Third, examination of fiscal efficiency efforts in the U.S. and Japan with relatively low public spending provided points of interest. The U.S. federal government adopted block grant programs instead of existing

federal grant programs in order to improve fiscal efficiency in major social welfare programs (e.g. healthcare and temporary assistance for needy families, or TANF). The Japanese central government made efforts to increase welfare services and expenditures in local governments. To sum up, the U.S. used a reduction in the source of revenue and the Japanese central government transferred budgets to local authorities and encouraged local expenditures, in order to adjust the ratio of central and local governments in social expenditure.

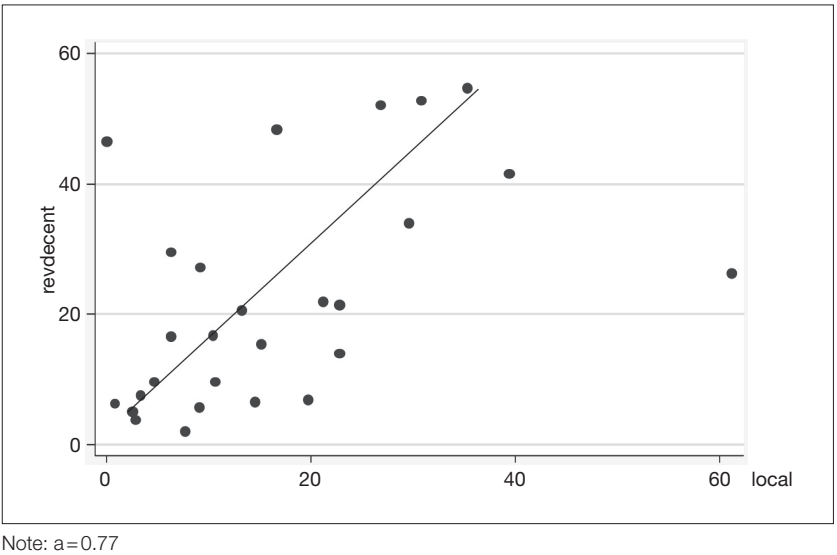
Furthermore, this study finds that there is a correlation between total tax revenue (local tax revenue) as percentage of GDP and the extent of local government responsibility for social welfare. After the mid-1980s, Sweden and Norway changed systems from specific grants to the general grant system and while Sweden has maintained it since, specific grants have been restored in Norway. This trend seems linked to the local tax burden for welfare spending. The national tax burden born by Swedish and Norwegian citizens is huge. However, in terms of the ratio of local tax to national tax, local tax accounted for over 40 percent in Sweden and about 13.8 percent in Norway, which is lower than in South Korea. Therefore, it might be difficult for Norway's central government to transfer its welfare burden to local authorities. Without difficulty, on the other hand, Sweden's central government might devolve its welfare burden to local authorities with abundant funds from local taxes. This case shows that if the ratio of local tax to national tax is relatively high, a local government has the ability to share the burden of public spending. For reference, the result of a simple correlation analysis on the share of local welfare burden and the share of IFT is 0.42, and the correlation between local welfare burden and decentralization of tax revenue is 0.77.

[Figure IV-3] Local Burden and IFT in Social Expenditure



Note: a=0.42

[Figure IV-4] Local Burden and Decentralization of Tax Revenue



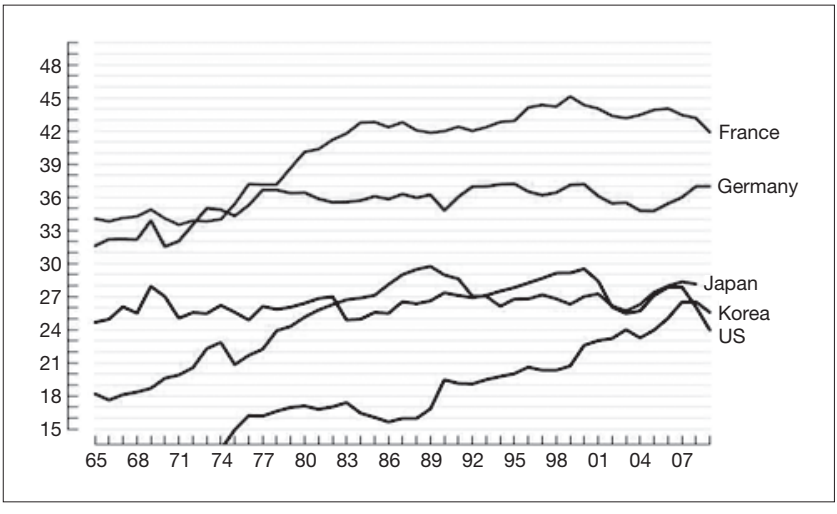
Note: a=0.77

The reason for examining total tax revenue (including local tax) as percentage of GDP in Norway and Sweden is to better understand the potential for raising the NTS rate in South Korea to fine-tune the share of social expenditures between central and local governments. As of 2012, the NTS rate for government subsidized welfare programs in South Korea was 70 percent, 50 percent (excluding social security) in Sweden, 70 percent in Norway, 60 percent in the U.S. and 41 percent (excluding pension) in Japan. In comparison, the NTS rate in South Korea does not appear low thus negating the need for adjusting the share of central and local government expenditure on social welfare.[12] Furthermore, Korea's total tax revenue as percentage of the GDP is also not high in comparison to advanced countries, while the population density in large cities is extraordinarily high. Should the South Korean government be obliged to maintain the high ratio of the equity-oriented LST, it must be noted that it may face limitations in its fiscal ability to increase the NTS rate.[13]

12) In a simple comparison of the OECD National Accounts, countries with a national treasury subsidy rate of more than 70% (excluding social security) include Estonia (75%), Iceland (86%), Portugal (92%), Netherlands (77%), Slovenia (85%), etc.

13) A simple correlation between "population concentration in large cities" and "the ratio of IFT to GDP" in 27 OECD countries was about 0.21 in 2009.

[Figure IV-5] Long-term Trend of Public Burden of Social Welfare in Major Countries



Source: Cited from Figure 4 on page 25 of the "Sourcebook on the public hearing on the 2012-2016 national fiscal management plan: local finance."

Linking social welfare issues in South Korea with the above findings, this study can conclude the following: first, the decentralization LST, which consolidates government-subsidized welfare programs into block grants, is thought to have been set up under the budget fighting between central and local governments and is deemed as an effort to enhance efficiency in public finance. In advance of NTS being merged into LST in 2014, suggestions were made requesting a revival of NTS. However, such requests seem to focus narrowly on subsidies for the sake of individual social welfare programs. Rather, it seems more reasonable to maintain block grant system for social welfare programs. Second, with regard to the infant and toddler care cost, suggestions were made requesting an additional increase in government spending (an increase of NTS rate) when adjusting the central and local government share. However, this initiative also requires close deliberation.

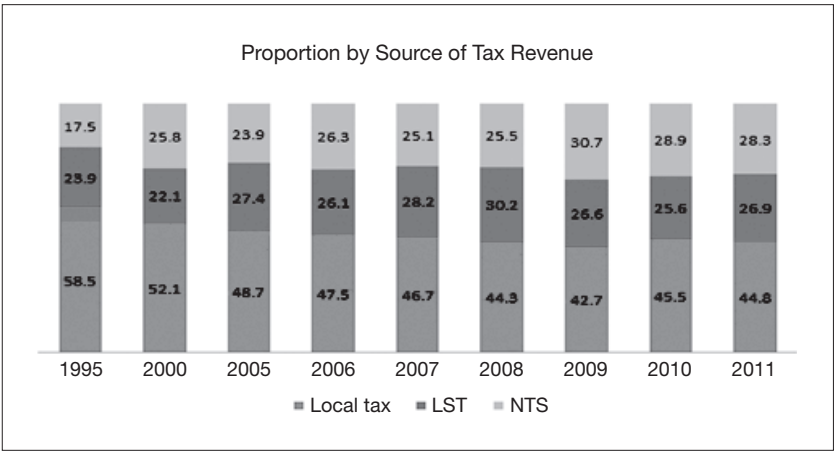
2 Understanding Available Funds for Local Governments by Considering Population Structure and Tax Revenues

A. Changes in Population Structure and IFT

Current discussions about local government's share in social expenditure have focused on future increases in expenditure. Government-subsidized welfare programs with lower NTS rates are expected to increase and decentralization LST is also expected to increase while the matching rate will be maintained the same as before. Amid this situation, there is a need to examine local governments' tax revenue and expenditure situation to structurally scrutinize the local share of social welfare spending.

As will be seen in this chapter, local tax revenue in South Korea is closely related to population distribution. Except for the capital area where population is highly concentrated, sources of revenue in non-capital areas are so weak that they face difficulties in operating local authorities with their own sources of revenue. To aid these local governments, the central government provides an equalization subsidy known as the LST and then allocates an additional subsidy called NTS for additional programs. Because NTS is provided with a precondition of LST and the self-financing capacity of local governments, the size and distribution of NTS are closely related to the tax revenue already obtained by the recipient local government. Therefore, items of tax revenue other than NTS need to be analyzed to understand the resources available to a local government. For this reason, the study examined the proportions of local taxes (excluding non-tax revenue) and IFT, and found a decrease in the proportion of local taxes against an increase in NTS.

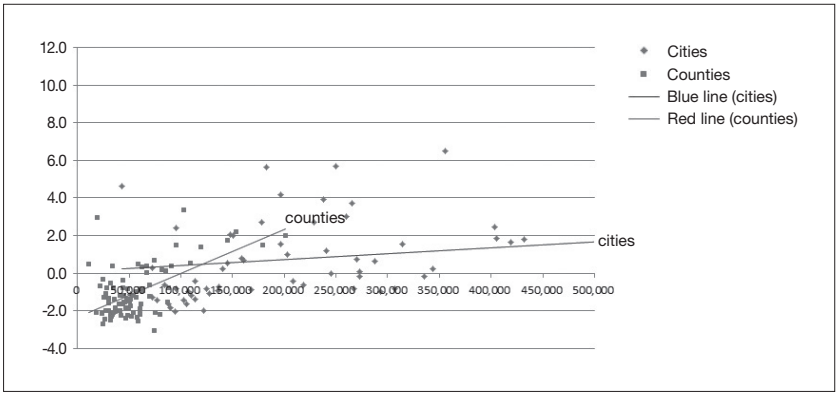
[Figure IV-6] The Proportion of Local Tax and IFT



Other than welfare-related NTS, LST also needs to be examined to analyze local governments' available financial resources. In order to reorganize the basis of IFT policy, it is crucial to study the extent to which the central government uses the LST to initiate the IFT to areas with a shrinking population. LST is used to partially compensate for the difference between fiscal demand and supply in such areas, and the degree of compensation depends upon the policy consideration the central government has toward these areas. Meanwhile, in terms of the size of the LST, the desire for equalization is stronger in South Korea than other major advanced countries. For example, equalization subsidies see great use in Germany and Japan where fiscal relations between central and local governments are intimate, whereas they are rarely used in the U.S. In a case study of analysis on social expenditure in the Netherlands having a stronger desire for equalization than other European countries, Maarthan A. Allers (2011) asserted that the Netherlands' IFT for social expenditure reflected local economic and demographic conditions, rather than actual welfare demand.[14)]

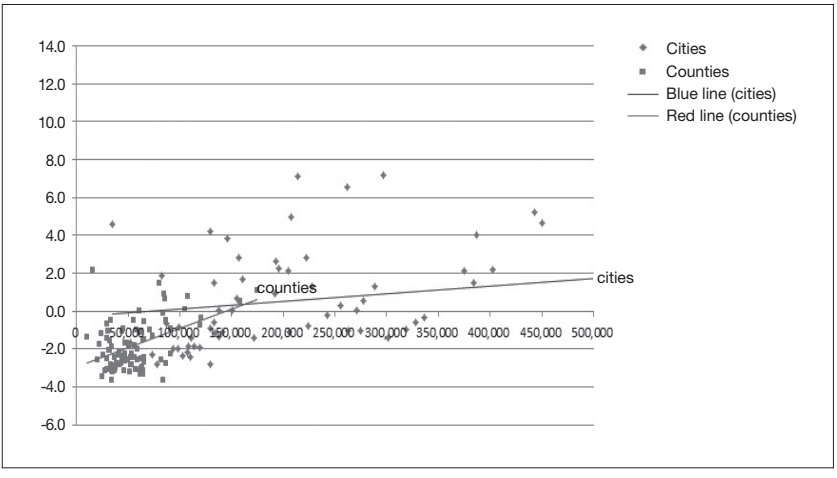
14) Local governments receive intergovernmental grants to finance welfare, which are unrelated to actual welfare payments. Rather, they reflect local economic and demographic conditions which influence the probability that inhabitants will become welfare dependant.

[Figure IV-7] Correlation Between Population Figures and Population Growth Rate in Cities and Counties (2000-2010)

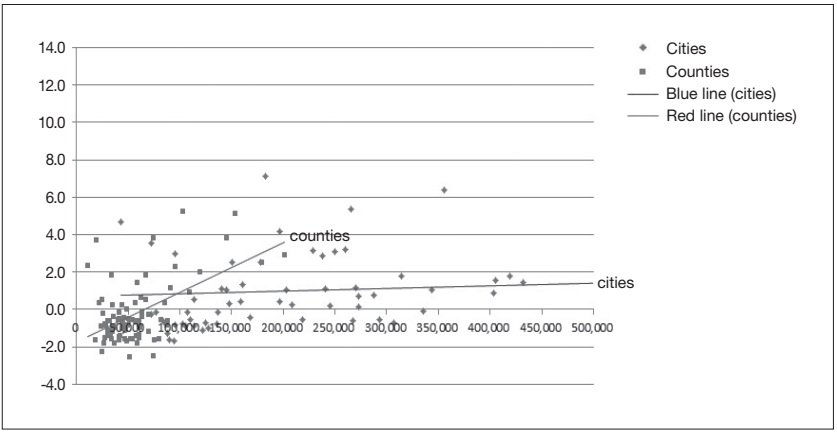


The following paragraphs focus on population structure and distribution due to their close connection to the distribution of IFT. The study of the relation between the average number of population and population growth rate in cities and counties from 2000 to 2010 showed that areas with a small population, or counties with a population of 50,000 or less, saw a rapid population reduction. Areas with a declining population included some cities with a population of more than 200,000 while cities with a small population (50,000 and 100,000 or less) saw a continuous reduction in population. When the decade of 2000-2010 was divided into two halves, there was a tentative population growth during the latter half compared to 2000-2005. Population growth in the future can be estimated through the current population structure. Under this formula, areas with a smaller population are not likely to see an influx of population or a natural increase of population (e.g. births) because of the high ratio of elderly citizens.

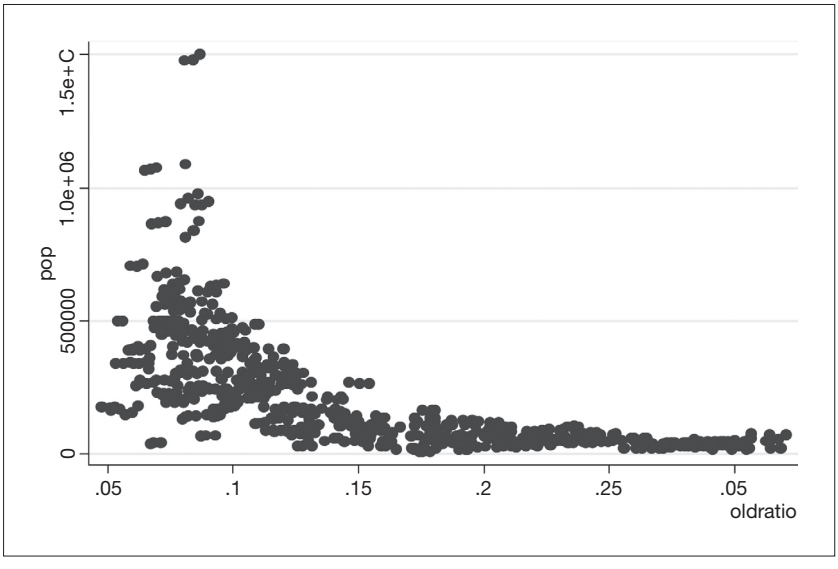
[Figure IV-8] Correlation Between Population Figures and Population Growth Rate (2001-2005)



[Figure IV-9] Correlation Between Population Figures and Population Growth Rate (2006-2010)



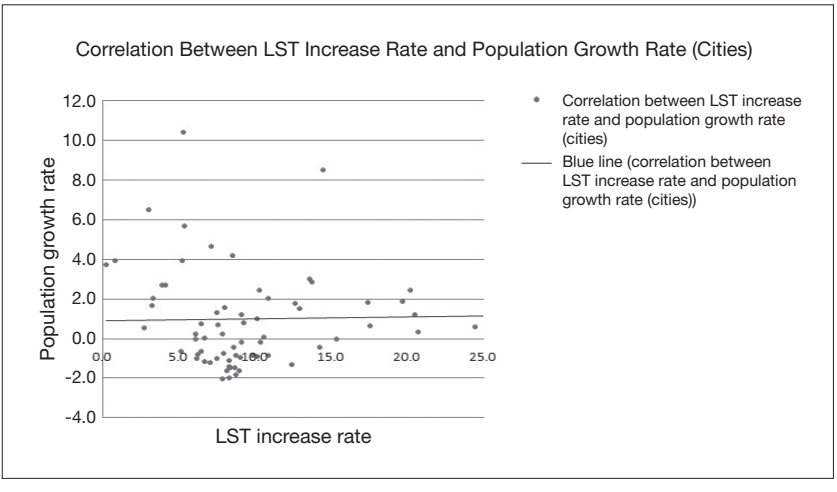
[Figure IV-10] Population Figures and Proportion of Elderly Citizens



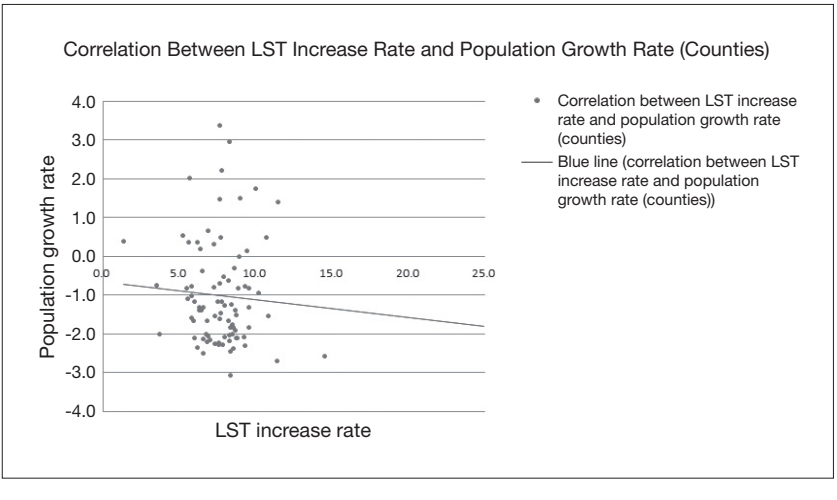
B. LST and NTS in Cities and Counties

In a correlation between the population growth rate and LST increase rate, counties that are experiencing a reduction in population yielded a smaller variance value than cities that are experiencing an increase in population, showing a concentrated distribution in a dispersion diagram. In a correlation between the population growth rate and NTS increase rate, cities with a rising population show an increase in NTS, while counties do not show any correlation.

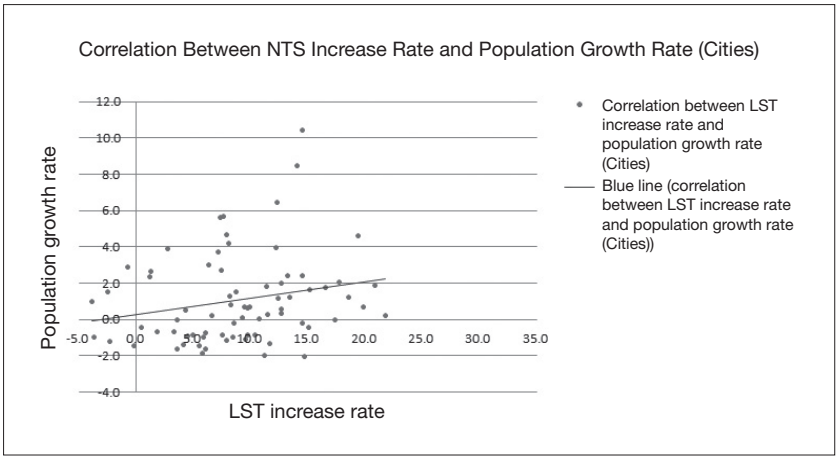
[Figure IV-11] LST Increase Rate and Population Growth Rate in Cities (2000-2010)



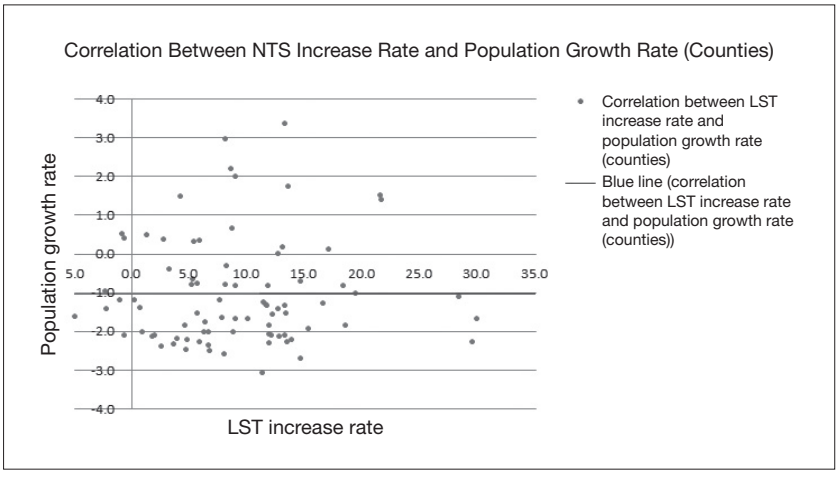
[Figure IV-12] LST Increase Rate and Population Growth Rate in Counties (2000-2010)



[Figure IV-13] NTS Increase Rate and Population Growth Rate in Cities (2000-2010)

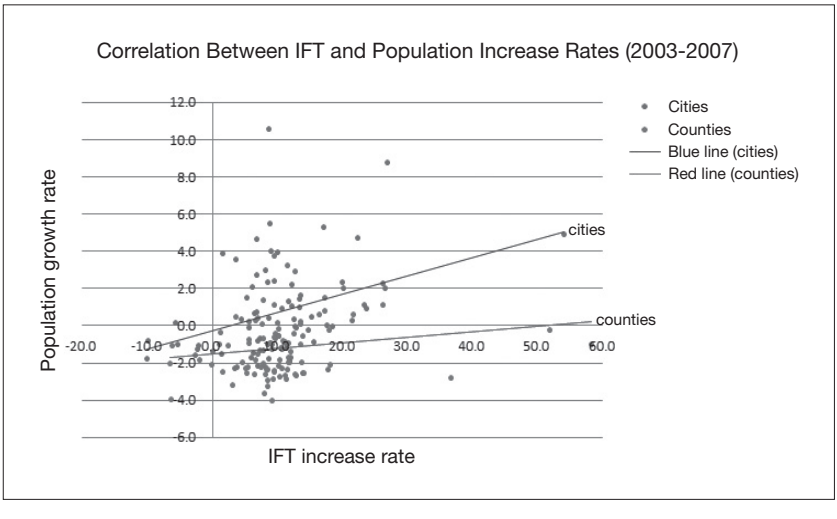


[Figure IV-14] NTS Increase Rate and Population Growth Rate in Counties (2000-2010)

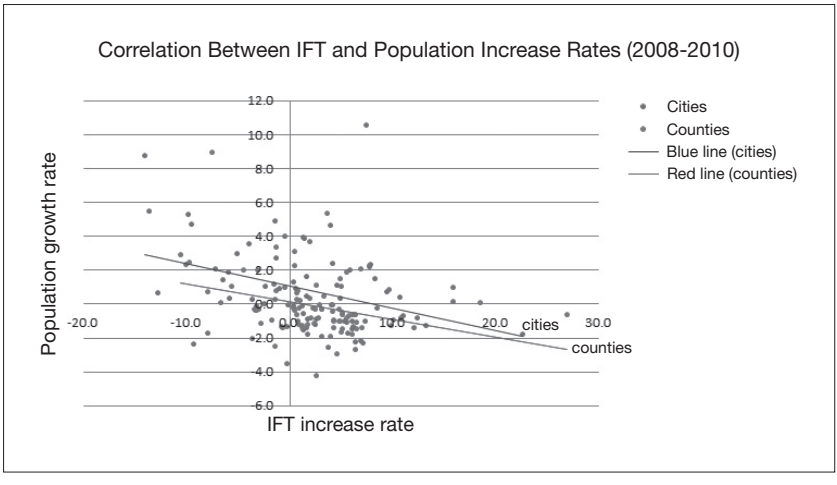


Meanwhile, a correlation between the population growth rate and total amount of the IFT consisting of LST and NTS differed before and after 2007. Before and including year 2007, more IFT was given to areas with a rapidly increasing population; however, between 2008 and 2010, more IFT was given to areas with a slow growth in population. This implies that when distributing subsidies, the central government conformed more to the principle of equalization than before, even though the proportion of the NTS was larger than that of the LST since 2008. It can be assumed that since 2008, the NTS has "functioned as a LST" rather than a supplementary subsidy for local programs, considering the increase in the basic subsidy rate in non-capital areas and the introduction of differential subsidy rates.

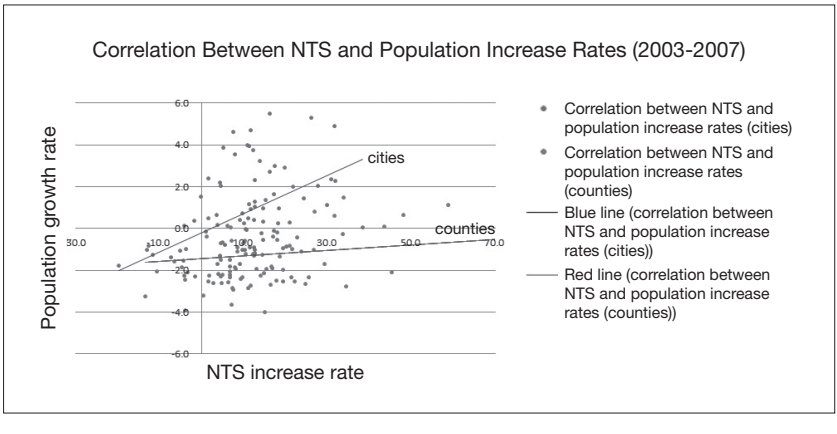
[Figure IV-15] IFT and Population Increase Rates (2003-2007)



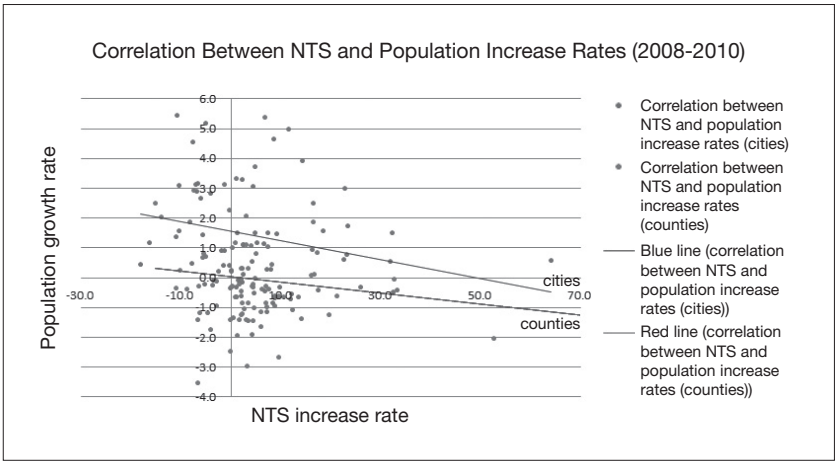
[Figure IV-16] IFT and Population Increase Rates (2008-2010)



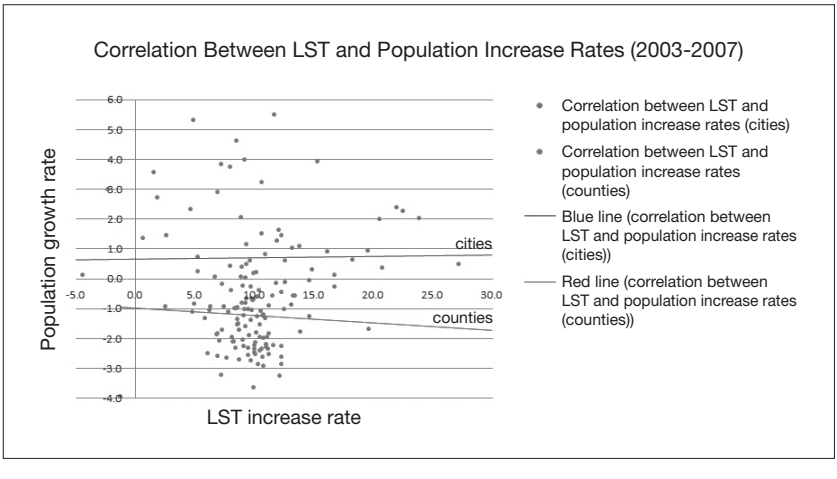
[Figure IV-17] NTS and Population Increase Rates (2003-2007)



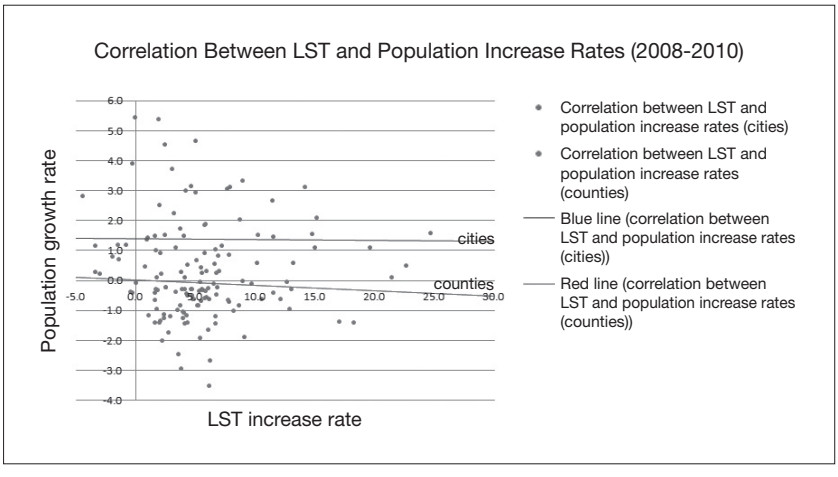
[Figure IV-18] NTS and Population Increase Rates (2008-2010)



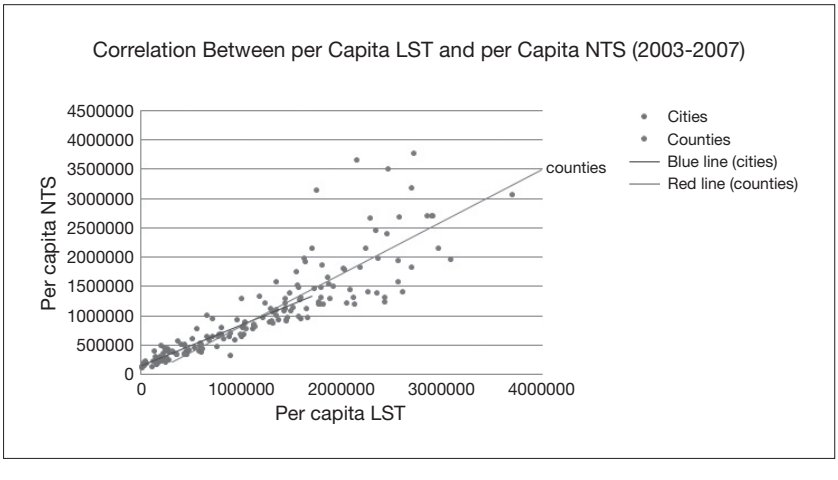
[Figure IV-19] LST and Population Increase Rates (2003-2007)



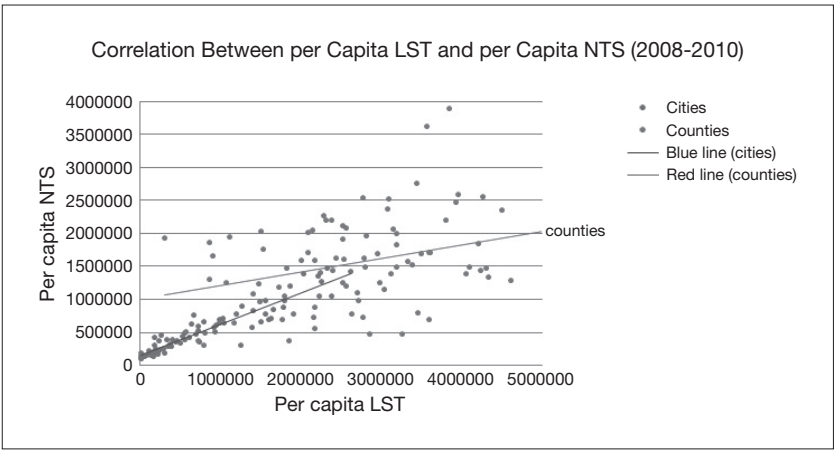
[Figure IV-20] LST and Population Increase Rates (2008-2010)



[Figure IV-21] Correlation Between Average per Capita LST and Average per Capita NTS (2003-2007)



[Figure IV-22] Correlation Between Average per Capita LST and per Capita NTS (2008-2010)



In addition, a correlation between per capita LST and per capita NTS shows the South Korean government's political will regarding subsidies. The figures above demonstrate that there is a positive correlation between the two types of IFT, meaning that the characteristics of LST and NTS in terms of subsidy distribution are not significantly different. In a broader sense, operation of the LST and NTS fall within the umbrella category of "IFT," and reflect a "budgetary tug-of-war" between the budget allocation ministry and budget execution ministries, which indicates that both parties recognize the total ceiling of NTS. During the process of reflecting policy demands, the budget allocation ministry is likely to attempt the adjustment of the total ceiling while each budget execution ministry tries to modify the desired amount of increase, during the same process. Meanwhile, the Ministry of Public Administration and Security distributes certain amounts out of collected internal taxes to local governments as LST; and the budget allocation ministry aware of such distribution of LST adjusts the level of total NTS accordingly.

[Figure IV-21] and [Figure IV-22] suggest a larger amount of public finances per capita and a higher dispersion value in counties than cities. In cities the proportions of NTS and LST are similar, while the dispersion

values of NTS and LST are high in counties, which have become even higher since 2008, meaning there has been a change in the distribution of NTS among counties. To sum up, since 2008, the distribution pattern of LST and NTS (per head) has changed in cities and counties, and in terms of size of public finances per head, more funds are provided to counties, consisting of areas with a small population.

3 Effect of IFT Items on Social Expenditure

A. Factors Affecting Social Expenditure and Developing Trends

Chapter 2 examined changes in the population structure and the IFT, the results of which can be summarized as follows: 1) The proportions of LST for the capital area and non-capital areas have been stable and the proportion of NTS for the capital area has gradually increased since 2000; 2) Concentration of population in the capital area has continued while areas with a small population (i.e. some cities and the majority of counties) have experienced a growing outflow of population; 3) Since 2008 more IFT has been made to areas with a shrinking population, which allows the assumption that the NTS has evolved to work more like the LST in terms of subsidy characteristics; 4) The NTS plays a major role in cities, while LST plays a major role in counties.

However, the above analysis on the correlation between changes in population structure and IFT is centered on the relation between two variables, whereas public spending is influenced by various variables, necessitating the study of the effect held by other major variables under statistical assumption. Therefore Chapter 3 will study the way in which a change in the IFT affects per capita social expenditure while controlling major variables influencing the expenditure.

Study subjects are lower level local governments of cities, counties, and districts (Korean: si, gun and gu) between 2005 and 2011. Data from 2005 to 2010 is based on the settlement accounts (local taxes and NTS) of the *Financial Yearbook of Local Government* and data for 2011 is based on the final budget in the *Summary of Local Budget for Fiscal Year 2012*.

Data for LST is based on the ordinary LST item from the ordinary LST calculation sheet, considering the difference between ordinary LST and LST. Due to a change in the classification of public expenditure items, the 2005-2007 period utilized the social security item within the category of social development expenditure, while the social welfare item within the category was used starting from 2008. Data for decentralization LST is based on the local financial management system called e-Hozo. Population-related variables are based on data from Statistics Korea. A set of variables were arranged as panel data based on projections that regional characteristics of 16 upper level local governments and the yearly effects in years from 2005 to 2011 may be reflected.

<Table IV-3> Current Status of Cities, Counties and Districts

Year	2005	2006	2007	2008	2009	2010
Total	234	230	230	230	230	228
City	77	75	75	75	75	73
County	88	86	86	86	86	86
District	69	69	69	69	69	69

Note: Counties and cities were merged due to the launch of Jeju Special Self-Governing Province in 2006. In addition, two administrative cities (Jeju and Seoguipo) were reorganized.
In July 2010, Changwon, Masan, and Jinhae cities were merged into Changwon city.
The figures above were based on as of December 31 of each year.
Source: Ministry of Public Administration and Security.

<Table IV-4> Basic Statistics of Cities

Variable	Obs	Mean	Std. Dev.	Min	Max
Population	448	290425.4	233953.7	34370	1090181
Population Growth Rate	450	.0133749	.0617483	-.108	1.1685
Recipients of Social Welfare	450	56962.87	36385.93	5918	190294
Local Tax	529	110901.3	108970.3	0	634565.9
Ordinary LST	452	106075.4	63654.1	1121	253138
NTS	452	130339.1	63144.04	8296	357239
Total Budget	520	415341.3	217684.4	69600	1717642

<Table IV-5> Basic Statistics of Counties

Variable	Obs	Mean	Std. Dev.	Min	Max
Population	516	55575.95	30953.8	9538	201000
Population Growth Rate	518	-.0044807	.0244728	-.1058	.1474
Recipients of Social Welfare	502	17909.39	7461.036	2570	41586
Local Tax	606	18141.04	19278.5	1530	149537
Ordinary LST	518	98882.48	23684.04	30000	182115
NTS	518	87383.95	41466.24	24056	627371
Total Budget	596	210274.5	62052.59	64810	430839.9

<Table IV-6> Basic Statistics of Districts

Variable	Obs	Mean	Std. Dev.	Min	Max
Population	414	325397.4	147251.9	48905	685279
Population Growth Rate	414	.0009478	.0210107	-.0579	.1575
Recipients of Social Welfare	402	56359.69	23326.51	10661	111164
Local Tax	483	37942.15	39017.74	5268	302892.5
Ordinary LST	414	4644.374	3628.965	0	34000
NTS	414	69668.3	35523.19	15254	205003
Total Budget	483	191874.6	78189.64	50400	537155.7

First, previous related studies on factors influencing social expenditure were examined.[15] Among these studies, those dealing with local government's social expenditure mention political ideologies and institutions at the state government level as potential determinants. However, in the case of South Korea, the political ideology of a local government head does not have a significant impact on social welfare

15) Most previous related studies, including those by Castles (2005) and Lindert (1996), focused on factors affecting nationwide social spending. Meanwhile, recent studies on patterns of social spending by political ideology in OECD countries during and after the fiscal crisis found the expenditure related to population aging and an increase in in-kind services as major factors. A study by Tanzi (2002) analyzed determinants of social expenditure by including regulations and the volume of tax expenditure.

expenditure,[16] because social welfare services by lower level governments consists of government-designated subsidized programs and a few independent programs, and IFT account for a significant portion of welfare expenditure. As such, this analysis aims at examining how the IFT affect local social expenditure. For the analysis in this chapter, local tax is adopted as a variable for local government's financial ability (economic strength, unemployment rate, regional GDP, etc.), "population growth rate" and "the number of recipients of social welfare" are adopted as socio-demographic variables (population density, population growth rate, recipients of social welfare services), and ordinary LST and NTS are used as source of other public expenditure. A dummy variable is used for trend-change effects from 2008.

$$LS_{it}=f\{(Economy);(Demography);(Transfer)\},$$
$$LS_{it}=\alpha_0+\alpha_1 Econ_{it}+\alpha_2 Demo_{it}+\alpha_3 Transfer_{it}+\gamma Trend_{it}+\epsilon_{it}, \quad (1)$$
$$t=2005\sim2011,\ i=\text{region}$$

As for the analysis method, the study adopted a linear regression model using the natural logarithm and each variable's coefficient (elasticity) is compared with one another to find the significance of influence held by the IFT on expenditure items. Because panel data is used here, the fixed effect model (FE) is adopted. Each model goes through a Hausman test and if the null hypothesis (meaning that the coefficient of FE and the coefficient of RE (random effect model) were found the same) is rejected, FE is used and if the null hypothesis is not rejected, the random effect model (RE, Pooled OLS) is used. As for the issues (i.e. multicollinearity and autocorrelation) that may arise in a regression analysis using microscopic variables, the analysis in this chapter maintains the following two policies. First, as a way to solve multicollinearity the analysis attempted to choose reliable variables by putting and eliminating each variable, thus not hampering what the rest variables can explain. Second, textbooks generally recommend the Durbin Watson test and other relevant steps

16) Many studies on social welfare policy have also demonstrated this argument.

(e.g. Cochrane-Orcutt regression) in case autocorrelation is suspected. However, there may be a risk of losing data due to the difference variable. Therefore, this analysis is not concerned with autocorrelation because the purpose of this analysis is to reflect existing variables for social welfare demands as much as possible. For model selection, the study refers to Akaike information criterion (AIC), Bayesian information criterion (BIC) and Schwartz information criterion (SIC) values, under which a penalty is imposed for the increasing number of parameters. And following hypotheses are established based on analysis on the current status featured in Chapter 2.

Hypothesis 1: NTS based on the demand for social welfare programs will have a more significant impact on social expenditure than ordinary LST, the general source of revenue. NTS will have more influence on social expenditure in cities while ordinary LST and NTS will have similar influence on social expenditure in counties.

Hypothesis 2: Expenditure for social welfare services will have a significant correlation with population growth and density because demands for social expenditure are proportionate to the number of population.

Hypothesis 3: Structural changes before and after 2008 in terms of distributing IFT affected changes in per capita social expenditure.

<Table IV-7> Change of per Capita Social Expenditure in Cities, Counties and Districts from 2008

Dep: Per Capita Social Expenditure	City	County	District
Local Tax	-0.28***(0.000)	-0.08***(0.00)	0.02(0.45)
Population Growth Rate	-0.51***(0.00)	-1.20***(0.00)	-2.09***(0.00)
Recipients of Social Welfare	-0.15**(0.01)	-0.34***(0.00)	-0.71***(0.00)
Ordinary LST	-0.03(0.07)	0.21***(0.00)	0.01(0.57)
NTS	0.30***(0.00)	0.26***(0.00)	0.55***(0.00)
2008 Onwards	0.22**(0.00)	0.17***(0.00)	0.07***(0.00)
Constant	14.33***(0.00)	11.92**(0.00)	-138.45***(0.00)
Model Specification	Fixed effect	Fixed effect	Random effect
N of Observation	448	344	389
(Between) R2	0.86	0.83	0.70
Hausman Stat.	54.96***	19.40***	4.03
Changes Beginning 2008 Chow Test (F-Statistic)	10.1***	12.1***	2.51**

Note: Numbers inside parentheses refer to p-values. Superscripts such as ***, ** and * refer to significance levels of 1%, 5%, and 10%, respectively.

The results of the analysis show that the change in NTS affects per capita social expenditure in cities, counties, and districts, and that ordinary LST, the general source of revenue, also affects social expenditure in counties (Hypothesis 1). As for the local tax effect, the results show that cities and counties with a relatively high population and thus with a growing local taxes experience a decrease in per capita social expenditure. However, such decrease is not found in districts. As seen in <Table IV-7>'s model specification, the random effect model was applied to districts because the Hausman test value was not rejected, signifying that regional characteristics of upper level local governments do not affect districts. In other words, financial situations of upper level local governments affect other lower level governments (i.e. cities and counties) but do not affect autonomous districts.

As for population growth, per capita social expenditure declines in

areas with an increasing population, i.e. large areas where the population exceeds a certain number (Hypothesis 2). On the other hand, per capita social expenditure in areas with a smaller population is relatively large. This result suggests progress in the equalization of regional social expenditure. As for trend change effects from 2008, the dummy variable is found to have a significant effect. Policy changes from 2008 include the introduction of differential subsidy rates and the expansion of overall subsidies related to social welfare (e.g. introduction of basic old-age pension system).

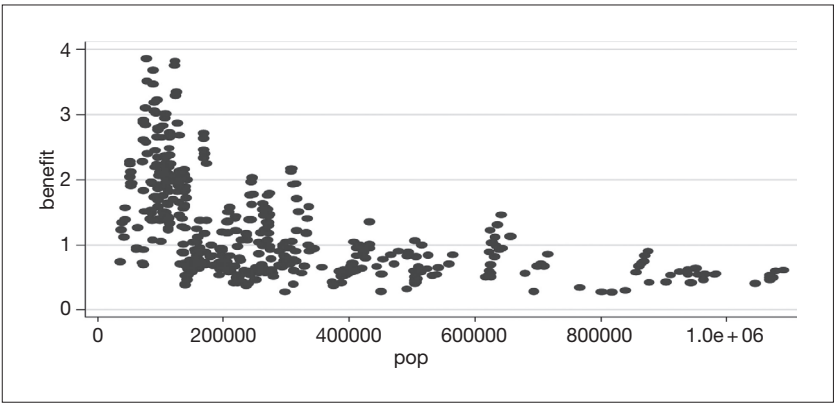
Furthermore, is the Chow test was performed to observe whether there was a structural change before (gr = 1) and after 2008 (gr2 = 1). As a result, the Chow test f-value using the Wald test showed a significant level of 1% in all the cities, counties and districts (e.g. cities' Chow f (6, 480) ≈ 2.12). The results signify that there was a structural change in per capital social expenditures in lower level local governments since 2008, which corresponds with the result of status analysis in the previous chapter (Hypothesis 3).

A notable matter in this result is the impact of ordinary LST on social expenditure in counties. This result suggests that it is not reasonable to see NTS as the only source of revenue for NTS-based programs and to discuss reorganizing fiscal resources for social expenditure by focusing on the regional distribution effect of NTS by program. In particular, differential subsidy rates have been applied to cities, counties and districts on the basis of social welfare programs, which had limited previous related studies to a simple study of NTS by program and discussing the effect of regional equalization.

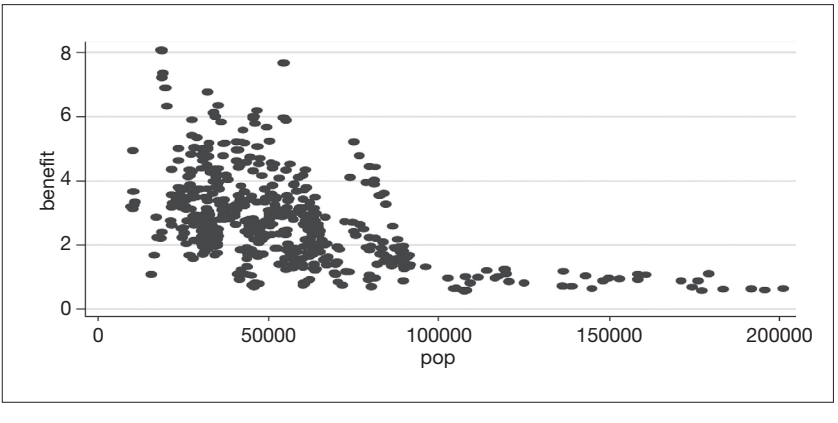
A *benefit variable for social expenditure* (= welfare expenditure / local tax) vs. the number of population was calculated to measure the benefit of the IFT on lower level local governments. And the result of the calculation showed that the benefit of welfare expenditure varied from 0.5 to 4 in cities with a population of 200,000 or less. It varied from 1 to 8 in counties with a population between 50,000 and 100,000. Districts yielded more varied results. In particular, a variance in cities with a population of between 200,000 and 400,000 was between 1 and 13. This means while cities and counties use local tax and IFT for social expenditure to adjust the level of social expenditure, districts are limited to using only NTS, without local tax or ordinary LST (including adjustment LST). Considering the

characteristics of autonomous districts when setting a model, they are likely to become a dead zone in terms of IFT, if they remain dependent solely on IFT without the ability to increase the NTS ratio.

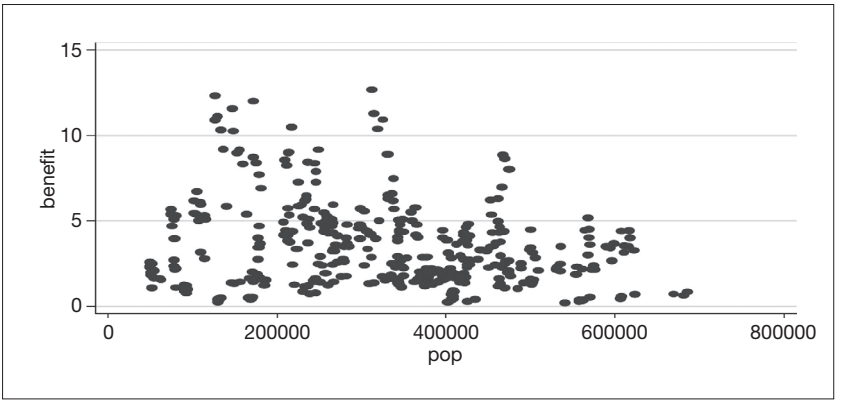
[Figure IV-23] Benefit of Social Expenditure and Population Figures (Cities)



[Figure IV-24] Benefit of Social Expenditure and Population Figures (Counties)



[Figure IV-25] Benefit of Social Expenditure and Population Figures (Districts)



B. Effect of Differential Subsidy Rates

Differential subsidy rates were introduced in 2008 to address the fiscal imbalance among local governments that was caused by the uniform matching rate for the NTS. However, it was not applied to all local government but only a few. Therefore, the effect of the differential subsidy rate before and after 2008 should be examined by dividing local governments into two groups: those that adopted the differential subsidy rate and those that did not. Data from cross sections pooled over time allowed the panel data to distinguish the division of the timeframe into two periods, before and after the introduction of differential subsidy rate in upper level local governments, and areas into two groups, a control group and a treatment group. Using these characteristics, the effect of differential subsidy rate was measured by using the difference-in-difference (DID) analysis. DID analysis is a statistical method that estimates the effect of a policy by analyzing changes of two variables before and after the introduction of the policy; one variable representing a group affected by a policy while another variable represents the unaffected group.[17] Pooled

OLS was selected as a model for this analysis based on the result of analysis by Bertrand et al.(2004). In detail, Bertrand et al. mentioned the necessity for data correction through bootstrapping, etc., because the DID analysis with pooled OLS would carry the limitation that OLS had. For this reason, fixed effect and others were considered during model selection. However, the Hausman statistic value showed a significance level of 10 percent, allowing the assumption that regional characteristics were not greatly affected (ratio of NTS in basic livelihood benefits). As such, the pooled OLS suggested by Wooldidge (2002) was adopted as a model for this analysis. The analysis used data on NTS rates for basic livelihood security programs and welfare programs for infants and toddlers, which were operated by upper level local governments between 2005 and 2010. The data on the NTS rate was obtained online (Department of Basic Livelihood Security, Ministry of Health and Welfare). Followings are the hypotheses and a regression equation:

Hypothesis 1: An increase of differential subsidy rate occurred mainly in metropolitan cities and such an increase is expected to positively affect the per capita social expenditure of 'autonomous districts.'

Hypothesis 2: The expansion of the differential subsidy rate will lead to a reduction in the matching rate of concerned local governments allowing the accumulation of financial resources and thus a greater capacity to autonomously operate welfare programs.

$$SS_{it}=\alpha_0+\alpha_1 Econ_{it}+\alpha_2 Demo_{it}+\alpha_3 Transfer_{it}+\gamma Trend_{it}+\delta \bullet year \bullet policy+\epsilon_{it} \quad (2)$$

17) The DID analysis has been widely used to analyze the effect of a wide range of policies since its introduction in 1985 by Ashenfelter and Card. (Imbens and Wooldridge, "Lecture notes 10" (2007); Wooldridge, "Econometric analysis of cross section and panel data(2002)," p.130).

<Table IV-8> Effect of Differential Subsidy Rate on Metropolitan Governments

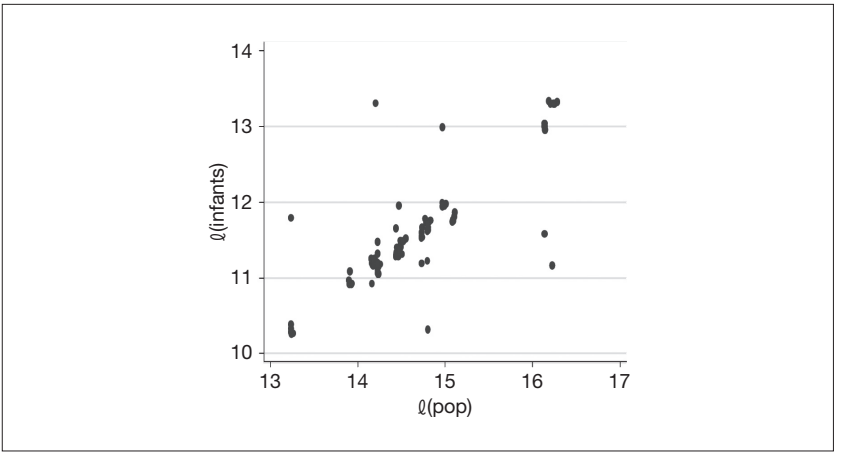
Dependent Variables	Social Welfare Budgets per Person	Metropolitan Governments' Independent Social Welfare Programs per Person
Local Tax	0.30(0.10)	0.81***(0.00)
Recipients of Basic Livelihood Subsidy	0.32*(0.07)	-0.56***(0.00)
Number of Infants and Toddlers	-0.64**(0.01)	-0.51*(0.05)
IFT	0.22**(0.02)	0.63***(0.00)
Areas(δ) that had an increase in the differential subsidy rate since 2008	-0.10(0.51)	-0.91***(0.00)
2008 Onwards	0.15(0.41)	0.33**(0.03)
Constant	-31.96(0.33)	2.56**(0.00)
Model	Pooled OLS	Pooled OLS
N of Observation	96	93
(Between) R2	0.86	0.66

Note: Numbers in parentheses refer to p-values, and superscripts such as ***, ** and * refer to significance levels of 1%, 5%, and 10%, respectively.

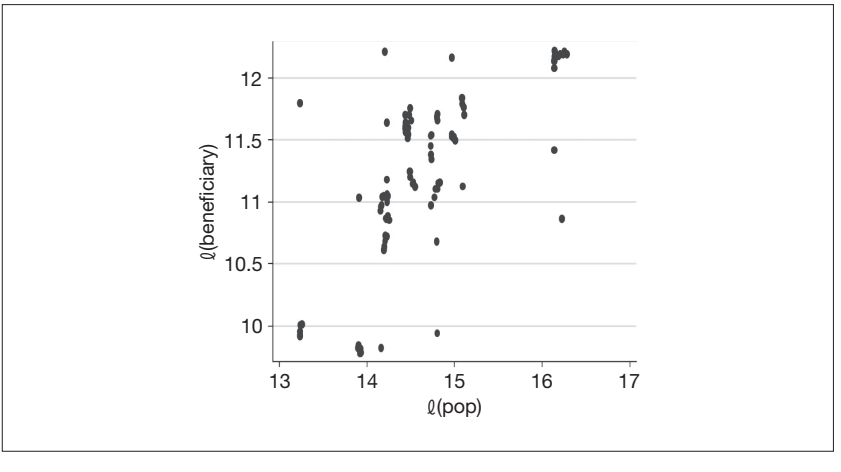
Analysis results suggest that the differential subsidy rate on metropolitan governments leads to a reduction in per capita social welfare programs autonomously operated by these governments and does not greatly affect their per capita social expenditure. The differential subsidy rate is thought to rarely influence the basic livelihood security program, perhaps because of the fiscal difficulties of autonomous districts in metropolitan cities. The variable of number of infants and toddlers shows a negative correlation with per capita social welfare expenditure (see <Table IV-8>), and this may be attributed to the effect of the dummy variable of metropolitan cities. Basic livelihood subsidy recipients (correlation coefficient with population: 0.69) seem widespread throughout metropolitan cities and provinces, whereas infants and toddlers (0.83) as a demographic group seems concentrated on metropolitan cities because

they tend to be proportionate to the population figure. [18)]

[Figure IV-26] Population Figures and Infants and Toddlers



[Figure IV-27] Population Figures and Basic Livelihood Subsidy Recipients



18) Entire budget for basic livelihood security program, of which the basic subsidy rate is high (more than 70%), will increase, if NTS and local matching rate increase. However, in the case of programs for infants and toddlers, the basic subsidy rate is relatively low (50%) and the size of the budget is small, so these programs may see a smaller increase in their budgets.

Per capita budget for independent welfare programs has decreased in the metropolitan cities where differential subsidy rates increased. This result is against expectation. As seen in Hypothesis 2, it was expected that an increase in the differential subsidy rate will boost fiscal resources of metropolitan governments, which in turn will be able to operate more of their independent programs. However, the statistical result suggested the contrary, meaning that the differential subsidy rate had little effect on metropolitan cities, which gained the metropolitan city status (increase = 1) in or after 2008 (gr = 2) and while the differential subsidy rate increased in these areas, it would appear that more funds had to be allocated to mandatory expenditure programs according to the matching rate system. Meanwhile, the statistical results accord with the original prediction that a growing number of basic livelihood subsidy recipients and infants and toddlers will reduce the per capita budget for metropolitan cities' independent welfare programs, and that an increase in IFT will also significantly affect the per capita social welfare budget.

Another matter of interest is that a dummy variable of 2008 did not have a significant effect on social expenditure by upper level local governments, whereas it does in cities, counties, and districts. This may mean that variances for regional differences are subdued in upper level local governments and thus a limitation arises to analyze their per capita social expenditure.

Policy characteristics of the differential subsidy rate system can be understood based on these analysis results. First, autonomous districts within metropolitan cities have been the actual beneficiaries of the system, whereby the current system of differential subsidy rate is the same as the effect of a dummy variable of metropolitan cities in and after 2008, because the system was originally introduced for lower level local governments. As such, to clearly understand the effect of the system, it is more appropriate to analyze the autonomous districts inside Seoul and other metropolitan cities. Second, the programs eligible for the differential subsidy rate system account for more than 69% of all welfare programs managed by the Ministry of Health and Welfare. However, the amount provided additionally according to the implementation of the system does not appear large. Therefore, the effect of the differential subsidy rate on the per

capita social expenditure in metropolitan cities appears to be somewhat less than significant.

The above result is noteworthy in that it shows the reverse side of IFT policy in South Korea. When contemplating the reason metropolitan cities became the main recipients of the differential subsidy rate system unlike the original policy aims, it is possible to deduce that since the main target areas of LST and NTS are cities and counties, and social welfare spending is generally proportionate to the population size, which is unfavorable for autonomous districts with a constantly growing number of basic livelihood subsidy recipients and infants and toddlers. Against this backdrop, the ministry responsible for budget allocations is likely to have operated the differential subsidy rate system in a flexible manner to maintain fiscal neutrality without increasing the existing NTS rate or LST rate, in order to help autonomous districts obtain fiscal resources.

In conclusion, the effectiveness of the current differential subsidy rate system leaves much for careful discussion on its expansion. To address the fiscal resource issue of the autonomous districts inside metropolitan cities, it seems better to reorganize adjustment LST and to discuss an ordinary tax of autonomous districts; or to help local governments including provinces that suffer from weak fiscal situations, it is necessary to adjust the basic subsidy rate for NTS-based programs.

V

Conclusion and Policy Implications

This paper dealt with the ongoing issue (as of 2012) about the share of social expenditure between central and local governments. In particular, the paper tried to focus on intergovernmental relations under financial pressure arising from the expansion of public spending. To clearly understand current situations and thus to produce relevant improvement measures with the potential to build consensus, it first examined the size of the central and local governments' fiscal expenditure on social welfare, the results of which revealed a steep increase in social expenditure by central and local governments. As of 2012, social expenditure accounted for 28.2 percent of the central government budget and 20 percent of local government budgets. At the same time, non-social expenditure continued decreasing over the past five years. It was found that the ratio of central to local social welfare budget (excluding funds) was 70:30 and that the size of the entire social welfare budget in South Korea was smaller than other advanced countries. However, the social welfare sector is projected to undergo rapid expansion in consideration of the Korean government's responses to changes in economic situations and the pace of population aging.

The current situation of central and local governments' share of expenditure on social welfare can be summarized into three points: first, although local governments' share has increased, the ratio of central to

local government expenditure has been stable for the last five years; second, an increase of support for childcare, families, elderly citizens, and youth, and other vulnerable groups, for whom central government subsidy rate is relatively low, are likely to increase the local government burden; third, fiscal situations vary across cities, counties, or districts. As for the current situation of local expenditure on social welfare, the paper identified that the increasing proportion of welfare expenditure financed by decentralization LST led to an improved efficiency of public finances for non-social welfare programs, and also identified that the fiscal burden on local governments became heavier due to an increase in infant and toddler care costs. In addition, as a result of examining existing data (from the Ministry of Public Administration and Security and the Ministry of Health and Welfare) to confirm validity, it was found that central and local government shares of expenditure on NTS-based programs (particularly, nine areas of social expenditure according to the OECD Social Expenditure Database) were estimated at 66.1 percent and 33.9 percent, respectively. Local governments' pursuit of fiscal efficiency to address the issue of growing welfare expenditure was identified through a change in local government expenditure by function and through local governments' independent program expenses. Meanwhile, it was also found that the area of general public administration, including social overhead capital, still accounts for a considerable portion of total expenditure by all local governments. This finding carries implications that additional fiscal improvement can be made by local governments, although further analyses by local authority type (i.e. city, county, and district) are necessary.

After observing the above-mentioned situations and issues (i.e. raising the NTS rate, restoring NTS-based programs from decentralization grant-based programs, increasing the share of NTS in infant and toddler care cost, expanding the differential subsidy rate, and reorganizing responsibilities for welfare services between central and local governments), the paper focused on two subjects: first, whether the NTS rate should be raised in adjusting the share of social expenditure between central and local governments; second, whether it is reasonable to reorganize and expand the differential subsidy rate.

As for the first subject, the discussion of raising the NTS rate started

with international comparisons. However, it was not a simple comparison, but an in-depth analysis focused on each country's economic situation and intergovernmental fiscal environments. As a result of the analysis, the paper found that major advanced countries adjusted the central and local government share of expenditure on social welfare and reorganized IFT, both during the economic recession and in the process of expanding social expenditure, which were likely to have incurred budget fighting between central and local governments. From the cases in advanced countries, it can be inferred that the relatively lower level of public spending in South Korea signifies inexperience with the extent of financial difficulties previously faced by advanced countries, and that in case of future economic crises, there may be an increase of public spending for aggressive labor policy (e.g. unemployment) and the poor (e.g. basic livelihood subsidy recipients and vulnerable groups). Second, the paper examined the way in which Sweden and Norway enhanced efficiency in public finance and found that, during the process, central and local governments experienced a change in responsibilities for social welfare services. Central governments in Sweden and Norway used block grants system to deal with fiscal difficulties arising from growing social expenditure and to make public finance efficient. In this process, relatively inefficient earmarked grants were cut while earmarked grants with clear demands were maintained. Third, the paper looked into the cases of the U.S. and Japan, both of which spend relatively less on social expenditure. The U.S. federal government switched from federal grants to the block grants system to improve fiscal efficiency in major welfare areas (e.g. healthcare, TANF, etc.). Meanwhile, as Japan's central government handed over more social welfare services to local governments, more sources of revenue, including local tax, were transferred to local governments and eventually, the proportion of local governments' social spending significantly increased compared to the central government. To sum up, national subsidies accounted for 50 percent of government-subsidized programs (excluding social security) in Sweden, 70 percent in Norway, 60 percent in the U.S. and 41 percent (excluding pensions) in Japan. Meanwhile, the proportion of NTS in NTS-based social welfare programs was 70 percent in South Korea in 2012. In terms of the ratio of national subsidy out of social spending, South Korea is not behind other

advanced countries. For this reason, the grounds for raising NTS rate are now unclear. In addition, this study confirmed that total tax revenue as percentage of GDP in South Korea is lower than that of advanced countries, while the extraordinarily high population density in large cities contributes to the high proportion of the LST, an equalization subsidy. Under this situation, in which the law stipulates a high ratio of the IFT regardless of economic conditions, there is a limit for the central government to raise the NTS rate within a certain amount of available resources.

This paper attempted to examine the necessity for reorganizing the differential subsidy rate, which was the second subject of this paper, by looking into the relation between population concentration in the capital area and IFT. As a result of the analysis, it was discovered that not only the LST but the NTS also played a role as an equalization subsidy in non-capital areas. Particularly, this trend was strengthened since 2008 according to the results of the correlation analysis and regression analysis. In other words, the current LST and NTS had greater influence on relatively less populated cities and counties. Specifically, cities were more influenced by NTS and counties were more influenced by LST, meaning that the NTS was the main revenue source for social expenditure in densely populated areas while the LST was the main revenue source in less populated areas. To summarize, the IFT was made under the premise of an equalization subsidy awarded to less populated areas, even at times the IFT was provided for social welfare programs whose demands were proportionate to population. It was also found that the IFT that combined NTS and LST had clearer effects compared to the NTS alone. Meanwhile, fiscal conditions of autonomous districts in large cities were highly vulnerable. The reorganization of the IFT will have to focus on autonomous districts due to the projected population increases in the capital area as well as in autonomous districts across large non-capital areas. Empirical analysis revealed the following: 1) NTS had significant influence on social expenditure while LST had significant influence on counties; 2) there was a correlation between population growth and social expenditure; 3) there was an increase in social expenditure due to a structural change since 2008. Furthermore, in a DID analysis on the differential subsidy rate system, the system was not confirmed to have any influence on per capita social

expenditure in metropolitan cities. On the contrary, the per capita effect exhibited on independent welfare programs was negative. This unexpected result suggested that metropolitan cities experienced heavy pressure because of a growing matching rate in line with an increase in NTS-based programs, rather than benefiting from an increase in revenue after the introduction of the system. The analysis on the effect of the system revealed that it caused fiscal distress in autonomous districts in metropolitan cities. The result of the two empirical analyses showed that fiscal situations of cities, counties, and districts varied widely, and that NTS and ordinary LST functioned similarly as a revenue source in local governments. Therefore, the differential subsidy rate system, implying an increase of NTS rates for individual programs, did not have a positive influence on local governments.

This paper suggested two principled and desirable reform measures, a tax increase and efficiency enhancements in non-social expenditures. These medium- and long-term measures can be adopted by both the central and local governments as revenue-generating measures. In particular, this study intends to stress that local governments should make an actual effort to adjust flexible local tax rate as part of strengthening independent revenue sources, while at the same time continuing to improve efficiency in non-social expenditures.

This paper also suggested short-term measures based on analytical results. If a total amount of IFT continues to be the same, reducing the amount of LST and instead increasing NTS (including block grants) becomes a viable option. However, in consideration of the political significance of LST as an equalization subsidy, reducing its amount will pose difficulties. Moreover, areas with a shrinking population may continue to need fiscal support. However, as long as the NTS maintains its current level, there will be a limit to transfer more funds to autonomous districts. In this regard, this paper suggested linking the current ordinary LST to social expenditure as the next best measure. A notable characteristic of South Korea's IFT found in this paper is that the nature of LST and NTS is not highly divergent. For the past 20 years, LST and NTS have played a role as a complementary means of fiscal adjustment. Therefore, it seems realistic to connect the ordinary LST to social expenditure to allow funds to

be moved to areas with an increasing population.

In addition, it seems that preparing fiscal incentives by reforming the basic rate of NTS is a priority before expanding the differential subsidy rate system. It is also recommended to focus the expansion of the system on autonomous districts as opposed to other lower level local governments in order to aggressively deal with the fiscal problems in autonomous districts. As for raising the NTS rate, it seems reasonable to incorporate decentralization LST-based programs into programs based on the LST (general revenue). As for measures for autonomous districts, it seems necessary to adjust NTS rate and modify source of revenue among metropolitan cities and autonomous districts (autonomous districts with a population of 400,000 or less).

Finally, the policy contribution made by this paper is as part of an intuitive attempt, to understand the dynamics between the IFT and local governments by examining the distribution of IFT and population. This paper also displays academic value by trying to understand the effect of the differential subsidy rate system and to induce policy implications through empirical analyses of local government data.

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