

Sub-Central Tax Competition in Canada, the United States, Japan, and South Korea

Prepared for the Fiscal Federalism Network,
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Foreword

This report is the result of collaboration between the Robert M. La Follette School of Public Affairs at the University of Wisconsin–Madison, and the Fiscal Federalism Network of the Organisation for Economic Co-operation and Development (OECD). This study has provided graduate students at La Follette the opportunity to improve their research and policy analysis skills while producing a report that contributes to the work of the Fiscal Federalism Network.

The La Follette School offers a two-year graduate program leading to a master's degree in international public affairs. Students study policy analysis and public management with an international and global perspective, and they pursue a concentration in a policy focus area of their choice. They spend the first year and a half of the program taking courses in which they develop the expertise needed to analyze public policies.

The authors of this report are all in their last semester of their degree program and are enrolled in Public Affairs 860, *Workshop in International Public Affairs*. Although acquiring a set of policy analysis skills is important, there is no substitute for doing policy analysis as a means of learning policy analysis. Public Affairs 860 gives graduate students that opportunity.

The students in the workshop were divided into four teams. The authors of this report were assigned to work on a research project for the OECD's Fiscal Federalism Network. The topic of this report—an analysis of tax competition among sub-central governments in Canada, the United States, Japan, and South Korea—was proposed by Dr. Hansjörg Blöchliger, Head of the Fiscal Federalism Network.

In a number of OECD-member countries, sub-central governments attempt to attract new businesses, and in some cases high income residents, by manipulating tax policy and tax rates. While this tax competition can encourage governments to operate more efficiently, it can also have negative consequences, such as inefficient development patterns and the underprovision of public services. The authors of this report conduct detailed case studies of tax competition in four OECD-member countries and highlight the large differences in the degree of tax competition that exist in the four countries.

This report would not have been possible without the support, encouragement, and assistance of Dr. Blöchliger. I thank him for his contributions.

The report also benefited greatly from the support of the staff of the La Follette School. Mary Mead and Gregory Lynch contributed logistical and practical support, and Karen FASTER, the La Follette Publications Director, edited the report and managed production of the final bound document.

By involving La Follette students in the tough issues confronting governments around the world, I hope they not only have learned a great deal about doing policy analysis but have gained an appreciation of the complexities and challenges facing governments at all levels. I also hope that this report will contribute to the work of the Fiscal Federalism Network and to the ongoing public debates about how governments at every level can most efficiently deliver public services to their residents.

Andrew Reschovsky
May 2009
Madison, Wisconsin, USA

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We would like to thank Professor Andrew Reschovsky, our workshop advisor, for his helpful feedback over the course of this project. His expertise on local public finance was extremely useful as we came to understand the parameters of our report.

We would also like to thank Karen FASTER for the support and dedication she gave to our team, especially the extra hours she spent editing early draft sections of our report.

We would like to thank Professor Nam Hwang-woo, of the University of Seoul in South Korea, and Professor Andrew DeWit and Ph.D. candidate Tatsuhiko Tani of Rikkyo University in Japan. Their personal correspondence shed light on the status of tax competition in South Korea and Japan, especially since studies in English are scarce.

Last, we thank Dr. Hansjörg Blöchliger, Head of the Fiscal Federalism Network at the Organisation for Economic Co-operation and Development, for the opportunity to research sub-central tax competition.

Executive Summary

Tax competition among sub-central governments (SCGs) is the ability of a jurisdiction to harness tax rates and tax structures to stimulate economic development or to maximize its own tax revenue. The success of tax competition is related to the degree of capital and labor mobility. Tax competition can have beneficial effects as it can foster efficiency and accountability of the public sector and keep taxation at levels consistent with citizen preferences. But excessive tax competition can lead to tax erosion, under-provision of public services, and large disparities across jurisdictions.

In this report, we present four case studies on SCG tax competition. For each country—Canada, the United States, Japan, and South Korea—we examine their sub-central tax structures and survey the empirical literature measuring the effects of SCG tax competition among the states and provinces.

To aid our analysis, we developed a conceptual framework that draws on several theoretical models. This framework explains the relevance of SCG tax autonomy; the link between tax competition and economic development; and the inefficiencies that may result from tax competition.

We found evidence of tax competition in each country, although to greatly varying degrees. In federal states, like Canada and the United States, SCGs have a large amount of autonomy, and, therefore, a lot of variation in tax policy. Conversely, in unitary states like Japan and South Korea, the central government exercises administrative control over SCGs, and local taxes are kept within a tight range of national standards. It appears that the size of the country and number of SCGs are important to predicting how much tax competition occurs. In smaller, more unified countries, cooperation among jurisdictions is more feasible. The empirical evidence suggests that tax policy decisions in neighboring jurisdictions create some variation among SCGs in each country.

An evaluation of whether tax competition is beneficial or harmful is more difficult. Measuring the benefits depends on how well sub-central taxes match local preferences. It is much easier to determine the revenue losses following tax competition, for example, by measuring businesses' tax planning efforts to reduce their tax liabilities. Specialized tax incentives have a high cost and often result in a "race to the bottom." There is also evidence that SCGs recognize the benefits of cooperation in some circumstances by attempting to set limits on the ability to compete. In three of our four case studies, the central governments maintain intergovernmental equalization programs to diminish regional disparities. Cooperation and equalization efforts can come at the expense of efficiency; therefore, policymakers must balance the competing needs of local tax autonomy and central regulation to match national preferences.

I. Introduction

Over the last few decades, economic development has been characterized by a stronger reliance on human capital, electronic commerce, and intangible property. Along with lower transportation costs and improved communications, these changes have resulted in increased mobility of individuals, firms, and capital. Governments have responded to these developments in part through aggressive tax efforts, including tax rate reductions and special exemptions, aimed at capturing these mobile factors of production. However, these reductions and exemptions also affect the tax revenue that governments rely on to provide public goods and services. Due to these multiple and competing dimensions, tax competition among sub-central governments (SCGs) is of special concern to policymakers concerned with maximizing economic activity and development.

In this report, SCG tax competition is defined as the ability of a jurisdiction to harness tax rates and tax structure to stimulate economic development or to maximize its own tax revenue. Tax competition can have beneficial effects as it can foster efficiency and accountability of the public sector and keep taxation at levels consistent with citizen preferences. But excessive tax competition can lead to tax erosion, the under-provision of public services, and large disparities across jurisdictions.

This report answers several questions regarding SCG tax competition. First, to what extent do SCGs engage in tax competition? We will discuss tax autonomy, the reasons behind tax competition policies, and the mobility and sensitivity of factors of production. Second, what tax instruments can be used in SCG tax competition? We will distinguish between general and targeted tax incentives, types of taxes, and the effect of tax competition on tax structure. Third, what are the benefits and drawbacks of SCG tax competition? In particular, we will look for the worst forms of SCG competition, failure of collaboration among SCGs, and options to preserve tax autonomy of SCGs while avoiding negative outcomes.

Part II provides a conceptual framework to analyze SCG tax competition. Part III uses four case studies to demonstrate the range of tax competition in OECD countries. We selected Canada, the United States, Japan, and South Korea because the OECD indicated it was missing a solid understanding of tax competition in these countries. Further, the marked differences among these countries contextualize the debate over SCG tax competition. For example, as federations, local governments in the United States and Canada have a great deal of autonomy over their tax structures. Conversely as unitary states, Japan and South Korea exhibit opposite characteristics, although each has recently devolved limited tax autonomy to local governments. Finally, Part IV concludes with an examination of lessons that can be drawn from these four countries.

II. Conceptual Framework for Analyzing Sub-Central Government Tax Competition

The ability of SCGs to engage in tax competition is directly influenced by their autonomy to set tax rates and use various other tax instruments. Typically, SCGs in decentralized, federal countries exhibit more pronounced practices of tax competition, because they have more autonomy to modify their fiscal policies to meet local needs. Conversely, SCGs in centralized, unitary states cannot compete with each other for economic activity because their central governments mandate their policies.

Tax autonomy can facilitate two forms of efficiency: allocative and technical. Allocative efficiency implies that local officials know the needs and preferences of their residents better than the central government due to their proximity and responsibility to the electorate. Therefore, increasing an SCG's tax autonomy allows its officials to tailor tax rates and tax structures to meet local preferences for public spending. They can also make more informed fiscal decisions to achieve greater efficiency and to promote innovation in the public sector (Brunori, 2001). Technical efficiency, on the other hand, results from competitive market forces. Faced with hard budget constraints, SCGs have an incentive to maximize resources and minimize costs.

Use of Tax Instruments by SCGs

Tax policies that policymakers use can take many forms. Governments can change their tax rates. They can offer tax breaks to industries or specific firms to induce relocation to their jurisdictions. They can likewise offer credits, rebates, abatements, special rates, and special tax packages. Tax exemptions shrink the tax base, resulting in tax revenue reductions *ceteris paribus*. To reflect these intricacies, the tax competition literature uses effective tax rates instead of standard rates. Effective tax rates measure how much revenue is actually collected from the various tax bases.

Tax policies can be divided into two types: general (or "statutory") and targeted (or "specialized"). The former are set by law and applied indiscriminately to a jurisdiction's tax base. These include: corporate and individual income taxes, sales and value added taxes, excise taxes, and discretionary special purpose taxes levied on small tax bases. The latter are usually tailored to specific industries and firms. They apply to a very narrow segment of taxpayers. One example is an income tax credit of \$1,000 for each job created after the first 100 jobs or the use of tax-exempt bonds to finance the expansion of firms that invest more than a certain million-dollar threshold. Not all local governments have the authority to use targeted tax policies.

Linking Economic Development and Tax Competition

The literature on local economic development, focusing on employment, firm births, investment, and firm location decisions, almost always includes a discussion on the importance of tax policy (Wasylenko, 1997). Five main arguments are

typically offered to support tax cuts and tax incentives as a means of promoting economic development, although each is equally criticized (Lynch, 2004). First, high taxes undermine business profits and deter companies from investing in a jurisdiction (tax burden impact). Second, lower taxes provide incentives to work, save, and invest (supply-side impact). Third, lower taxes allow for increases in consumer spending, therefore stimulating growth through increased demand (demand-side impact). Fourth, lower taxes improve the local business climate as they signal a jurisdiction's support of business activity (business climate impact). Fifth, low taxes are needed for the jurisdiction to compete for investment (competitiveness impact). Due to the strong association between tax policy and economic development, policymakers are frequently concerned with the sensitivity of businesses to changes in tax policies (Wasylenko, 1997).

Relocation costs for businesses have decreased significantly with the increased reliance on human capital, electronic commerce, and intangible property. The government response to this increased mobility has been aggressive tax efforts at state and local levels to attract business investments. These efforts are widespread and range from general tax rate cuts that are applicable to broad segments of the business community, to investment tax credits and property tax abatements or exemptions that are applicable to a few select firms (Chi & Hofmann, 2000). This is especially relevant in the United States, where many studies on SCG tax competition have focused on mobility and business location decisions following the transition from a manufacturing-based to a service-based economy.

We should note that tax policy is not the sole determinant in the location decisions of firms and individuals. Other factors are also important, such as the provision of traditional market factors, the level and quality of public services, environmental regulations, the presence of labor unions, the existence of economic clusters, and other non-fiscal variables (Helms, 1985; Plaut & Pluta, 1983; Bartik, 1985; Phillips & Goss, 1995). A great deal of economic development literature discusses these multiple factors. However, to make our analysis of sub-central tax competition manageable, we do not consider any factor other than tax policy.

Modeling Tax Competition

Two commonly cited theories of tax competition are the Tiebout model (1956) and the Oates-Schwab model (1988). Common to both is the use of "exit" to describe outcomes. In the Tiebout model, residents are assumed to be mobile. Consequently, residents "vote with their feet" in response to tax policies in competing local governments. Similarly, the Oates-Schwab model assumes that firms and businesses are mobile. Thus, firms "vote with their feet" by locating in a jurisdiction that offers a level of taxation and mix of public services maximizing their utility. In both models, the mobility of individuals and firms reveals preferences for levels of taxation and public spending, with the assumption that mobility is costless.

Due to this assumption of costless mobility, a key result of these two models is that all taxes become benefit taxes at equilibrium. The concept of benefit taxes implies that any local taxes paid are proportional to the benefits received and are therefore efficient. As a result, all local expenditure needs are met by local tax revenue and there is no need for intergovernmental transfers or subsidies (Tiebout, 1956; Kenyon, 1997). This assumption is limited by the fact that intergovernmental transfers and spillover effects are important factors in many countries.

These two models have been criticized for omitting the possibility that policy-makers can be influenced by means other than mobility and exit (Salmon, 2006). An alternative model, yardstick competition, focuses less on individual and capital mobility and more on information and voice (Besley & Case, 1995). In this model, individuals pressure local politicians by comparing their performance to that of politicians in neighboring jurisdictions. Citizens demand comparable levels of taxation, and politicians seek to keep their constituents happy. This model has not yet been applied to areas of economic development, so this report does not focus on studies utilizing it. However, it is important to note that individuals and firms can influence and pressure local policymakers in ways other than moving or threatening to move.

Measuring Economic Activity and Firm Sensitivity to Tax Competition

Since Tiebout (1956), tax competition studies have developed more sophisticated methodologies. These studies use income, employment, investment, capital expansion, and relocation as independent variables to explain the effect of tax competition on economic activity. Many of these studies also utilize the concept of tax elasticity (Bartik, 1991; Buss, 2001; Stark & Wilson, 2006). Tax elasticity is measured as the percent change in economic activity caused by a 1 percent change in a jurisdiction's tax rate. To illustrate, a tax elasticity of -0.3 implies that if a jurisdiction lowers its tax rate by 10 percent, such as lowering the property tax rate from 5.0 percent to 4.5 percent, then one would expect economic activity to increase by 3 percent (Bartik, 1991). Since the supply of capital is mobile, but not infinitely elastic, changes in effective tax rates in one SCG create negative tax externalities for the central government and other competing SCGs (Oates & Schwab, 1988; Stark & Wilson, 2006).

Tax elasticities only reflect changes in statutory tax rates. They do not capture the influence of specialized or targeted tax incentives used by SCGs to influence business location decisions, such as property tax abatements and research and development credits, especially in the United States (Stark & Wilson, 2006; Peters & Fisher, 2004). More effective approaches take into account some of the less obvious differences in tax structure among SCGs. For instance, a representative firm approach estimating the after-rate return on investment in different states for different industries has shed light on the effect of tax incentives that are harder to quantify, such as corporate apportionment formulas in the United States (Papke, 1995; Wasylenko, 1997).

Linking Inefficiency and Tax Competition

Many potential non-efficient and social welfare-reducing outcomes can result from SCG tax competition. A “race to the bottom” among SCGs to attract and retain business diminishes the welfare of all competing SCGs. Ideally, local governments would prefer to tax at an optimal rate where the marginal costs of raising tax revenue equal the marginal benefit. However, if an SCG lowers its tax rates or uses other tax instruments to attract another SCG’s “defecting” tax base, this will likely have a negative spillover effect on competing local governments. In response, competing local governments may have to enact defensive tax policies to retain their tax base (Rolnick & Burstein, 1994). Tax revenues decrease due to lower tax rates whether or not businesses actually relocate due to the competition. SCGs competing over firms that act independently from local area demand, often referred to as footloose firms, are most susceptible to this undesirable situation (Wasylenko, 1997).

Further, businesses typically do not take into account the true societal cost of their movement when they relocate. Firms generally base expansion, relocation, or building decisions on local market factors, wage rates, and production and transportation costs. However, a firm also requires the provision of public goods and services, which creates new costs for the SCG. Ultimately, expenditures from other sectors of public finance will likely be diverted to offset the costs of attracting new business. Thus, SCG tax competition distorts the marginal cost of public funds (Brunori, 2001; Rounds, 1992).

Cooperation

Cooperation among SCGs can offset many of the negative effects of tax competition. Cooperation would imply that SCGs agree to maintain certain taxation levels and to restrict the use of tax incentives for relocation purposes or completely ban their use. However, these agreements risk becoming a classic Prisoner’s Dilemma game with multiple players. An example of an attempt at cooperation in the United States was the creation a “no riding zone” in the Midwest in the 1980s by the Council of Great Lakes Governors (Thomas, 2000). Pursuant to this agreement, signatory states agreed not to engage in tax competition for “high-visibility, high-impact projects”; however, one of the states violated the terms of the agreement before it even came into effect (Schweke et al., 1994). Moreover, the more jurisdictions attempt to cooperate, the harder cooperation is to achieve.

The central government could also oversee cooperation among SCGs by setting rules for acceptable sub-central tax policy. However, this involvement must be balanced against the need of SCGs to maintain their autonomy and to determine the efficient levels of public spending and allocation of resources.

III. Country Specific Analyses of Sub-Central Government Tax Competition

This section presents four case studies on SCG tax competition to highlight the concepts presented in the previous section. We focus on Canada, the United States, Japan, and South Korea to contribute to the OECD's knowledge of SCG tax competition. For each country, we provide an overview of the fiscal system, including the tax structure, degree of tax autonomy, sources of tax revenue, regulatory provisions, and other characteristics influencing SCG tax competition. To keep the analysis manageable, we limit our focus to state and provincial governments and not local governments. Next, we survey numerous empirical studies to determine the scope and effects of SCG tax competition in each country. We use these findings to derive policy implications in the final section of this report.

III. A. Canada

Canada is a federal state that has devolved significant powers to its provinces. While its SCGs have tax autonomy and the ability to engage in tax competition, there is evidence of some coordination with the federal government. The relatively efficient provincial tax system is aided by a robust intergovernmental equalization program.

Overview of the Fiscal System

Canadian taxes are levied by the federal, 10 provincial, three territorial, and more than 3,000 local governments.¹ Canada was originally established as a top-down federation in which the federal government held most decision-making powers, including fiscal policy (British North American Act of 1867). Under the current Constitution, however, the tax authority has been significantly decentralized, and provincial governments have gained the authority to levy “direct” taxes. This means that they can collect the same taxes as the federal government, except for import duties and taxes on inter-provincial sales. As a consequence, Canadian federal and provincial governments’ personal income taxes share the same tax base. This shared tax authority among different levels of government has resulted in a complex taxation system. The federal and regional governments established tax collection agreements to regulate overlapping tax bases and set provincial income tax rates.

¹ Territorial governments are under the authority of the central government. More recently, they have formed their own legislative and executive bodies and are trying gain province-like powers (a process called “devolution”).

Canada has taken several steps to regulate some of the negative aspects of tax competition. In particular, it adopted legislation to limit provincial bidding wars for investment. In 1994, the government enacted the Agreement on Internal Trade, which includes a Code of Conduct on Incentives. According to this code, provinces are banned from providing any kind of subsidy to firms seeking to relocate from another province: “No Party shall provide an incentive that is, in law or in fact, contingent on, and would directly result in, an enterprise located in the territory of any Party relocating an existing operation to its territory or to the territory of any other Party” (Internal Trade Secretariat, 2009). Similarly, most provinces have prohibited local governments from providing location incentives to firms, a practice referred to as “bonusing” (Thomas, 2000).

Provincial and territorial governments collect a relatively large share of tax revenues compared to the federal government. In 2006, the federal government collected 50.8 percent of the total tax revenue, while provincial and municipal governments collected 41.0 percent and 8.1 percent respectively. Table 1 shows the distribution of revenue among the federal, provincial, and municipal levels collected from various taxes.

Table 1: Distribution of Revenue by Tax Type Collected by Federal, Provincial, and Municipal Governments in Canada

	1961			2006		
	Federal	Provincial	Municipal	Federal	Provincial	Municipal
Personal income taxes	95.2%	4.8%	0.0%	61.0%	39.0%	0.0%
Corporate income taxes	16.7%	83.3%	0.0%	65.6%	34.4%	0.0%
General sales taxes	23.1%	76.9%	0.0%	48.5%	51.4%	0.1%
Property & related taxes	0.0%	0.0%	100.0%	0.0%	19.2%	80.8%
Health & social insurance taxes	71.4%	28.6%	0.0%	71.3%	28.7%	0.0%
Natural resource revenues	0.0%	100.0%	0.0%	3.3%	96.7%	0.0%
Custom duties	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Other taxes	33.3%	61.1%	5.6%	33.9%	64.5%	1.6%
Total tax revenue	44.6%	40.2%	15.2%	50.8%	41.0%	8.1%

Source: Walker et al., 2008

The largest share of revenue is collected via income taxes at federal and provincial levels. According to researchers at the Fraser Institute, an independent non-partisan research and educational organization based in Canada, in 2006 the share of personal and corporate income tax revenue was 55.9 percent of total federal revenues and 42.3 percent of total provincial revenues (Walker et al., 2008).

The types of taxes levied and the corresponding tax rates differ significantly by province, causing provinces to rely on different sets of taxes for their tax revenue. Table 2 shows the variation in tax rates among the provinces and territories. In 2006-07, for example, Alberta collected 16.8 million Canadian dollars (CAD), of which 66.9 percent came from personal and corporate income taxes and 0 percent came from sales taxes, while Newfoundland collected an estimated 2.9 million CAD, of which 38.8 percent came from personal and corporate income taxes and 22 percent came from sales taxes (Alberta Ministry of Finance and Enterprise, n.d.; Government of Newfoundland and Labrador, n.d.).

The value-added tax in Canada, or the goods and services tax as it is locally known, is collected with provincial sales taxes, except in the province of Alberta. Three provinces—New Brunswick, Nova Scotia, and Newfoundland—have switched to a harmonized sales tax, which is a combination of the goods and services tax (5 percent) and the provincial sales tax (8 percent). The sales tax column in Table 2 shows the provincial sales tax and the federal goods and services tax.

Table 2: Standard Tax Rates in Canada’s Provinces and Territories, 2008

Province	Personal income tax				Corporate income tax		Sales tax	Gas tax	Tobacco tax
	Low income rate	Middle income rate	High income rate	High income surtax	General rate	Small business rate	%	cents / liter	cents / cigarette
	%				%		%		
Newfoundland and Labrador	8.7	13.8	16.5	–	14.0	5.0	8.0	16.5	18.0
Prince Edward Island	9.8	13.8	16.7	10.0	16.0	4.3	10.0	11.5	17.5
Nova Scotia	8.8	15.0	17.5	10.0	16.0	5.0	8.0	15.5	16.5
New Brunswick	10.1	15.5	18.0	–	13.0	5.0	8.0	10.7	11.8
Quebec	13.4	16.7	20.0	–	11.4	8.0	7.5	15.2	10.3
Ontario	6.1	9.2	11.2	36.0	14.0	5.5	8.0	14.7	12.4
Manitoba	10.9	12.8	17.4	–	14.0	2.0	7.0	11.5	17.5
Saskatchewan	11.0	13.0	15.0	–	13.0	4.5	5.0	15.0	18.3
Alberta	10.0	10.0	10.0	–	10.0	3.0	–	9.0	18.5
British Columbia	5.2	8.0	14.7	–	12.0	4.5	7.0	14.5	17.9
Yukon	7.0	9.7	12.8	5.0	15.0	4.0	–	6.2	13.2
Northwest Territories	5.9	8.6	14.1	–	11.5	4.0	–	10.7	21.0
Nunavut	4.0	7.0	11.5	–	12.0	4.0	–	6.4	21.0
Federal	15.0	22.0	29.0	–	19.5	11.0	5.0	10.0	7.9

Source: Statistics Canada, n.d.a; Statistics Canada, n.d.b.

Another important feature of the Canadian fiscal system is the existence of a large equalization program administered by the federal government. This program supports provinces that fall short of the average tax capacity of all 10 provinces by utilizing equalization transfers. These transfers come in the form of unconditional block grants to help needy provincial governments with their expenditures. In fiscal year 2007, the federal government transferred almost 13 billion CAD to seven of its provinces, with Quebec receiving more than 55 percent of the amount (Department of Finance, n.d.).

Empirical Studies

Due to the fiscal authority that provinces have over their fiscal policy, Canadian SCGs have a great deal of freedom to engage in tax competition to meet local preferences for public services. This characteristic, along with a lack of trade barriers among jurisdictions and tight budget constraints brings Canada close to a “market preserving federalism” (Weingast, 1995).

Some authors have argued that Canada’s goods and services tax is very close to “optimal” (Bickley, 2003). The federal government sets the tax at a standard rate of 5 percent that acts as a floor, and it allows the provinces to increase the rate to the desired level to meet local needs. New Brunswick, Nova Scotia, and Newfoundland and Labrador use the harmonized sales tax at an agreed upon rate of 8 percent, meaning these maritime provinces have relinquished their right to set their own goods and services taxes. This is a clear example of tax harmonization. Elsewhere, Alberta collects no provincial sales tax in addition to the federal goods and services tax. Quebec relies on the national government to collect both federal and provincial taxes, and then receives a transfer of the amount of provincial tax collected. This lowers Quebec’s administrative and compliance costs, but the province also loses some fiscal independence by relying on the national government. The remaining provinces collect both their provincial sales tax and the federal goods and services tax, and then they transfer the federal portion to the national government. Table 2 shows the different sales tax rates the provinces use. This model of sales tax allows for an efficient level of taxation (Bird, 1999; Schenk & Oldman, 2007).

Many studies have focused on the effects of SCG tax competition using the income tax, since personal income represents one of the main sources of revenue for federal and provincial governments. Esteller-Moré & Solé-Ollé (2002) used a set of Canadian personal income data for 1982–1996 to verify two empirical predictions found in fiscal federalism models. First, they predicted that combined tax rates are higher in federations where the same tax base is shared by multiple jurisdictions. Second, they predicted that the federal tax rate will affect local tax rates and vice versa. They found that a 1 percent increase in the federal tax burden results, on average, in a 0.2 percent increase in a sub-central government’s tax burden. The authors also found evidence of horizontal effects. A 1 percent

increase in the tax burden of one province results, on average, in a 0.3 percent increase in the competing provinces.

Similarly, Hayashi and Boadway (2001) found evidence of horizontal and vertical tax effects in Canada for corporate income taxes. The authors argued that sub-central tax competition leads to suboptimal taxation levels for two main reasons. First, provincial governments have an incentive to lower their tax rates on mobile factors of production relative to competing governments, thus leading to distortions in the marginal cost for public funds. Second, provincial governments have an incentive to increase tax rates on shared tax bases, which leads to lower tax bases, and therefore lower tax revenues for both overlapping governments. They find evidence of tax competition effects using an econometric model and tax data for the Canadian central government, Quebec, Ontario, and the rest of the provinces grouped together. The authors conclude that provincial tax rates are inversely related to federal tax rates and directly related to changes in neighboring provinces' tax rates.

Due to the fact that equalization transfers play a major role in the Canadian fiscal federalism, several studies have examined their effect on SCG tax competition. Smart (1998) argued that the Canadian equalization formula encourages provinces to increase their tax rates, because they lead to smaller tax bases and increased transfers. Moreover, this incentive to increase tax rates without bearing the full consequences of an inflated taxation may lead to intensified vertical tax competition effects. This underlines the trade-off between the efficiency and equity goals of an equalization program. Esteller-Moré & Solé-Ollé (2002) found that equalization grants tend to mitigate the effect of tax competition and increase regional taxes due to lower marginal cost of public funds. They estimate that a 1 percent increase in the standard equalization tax rate typically results in a 0.02 percent increase in the tax rate of recipient provinces.

Since a large share of Canadian taxes is levied on income, labor mobility is particularly sensitive to sub-central tax competition. The degree of individual mobility in response to the level of public goods provision is indirectly tied to the effects of sub-central tax competition. Day (1992) found evidence of an increase in migration to provinces with lower tax rates, higher levels of spending on health and education, better unemployment insurance benefits, and transfer payments. She argued that a main implication of these findings is that equalization transfers can be a good tool to offset migration caused by the under-provision of public goods.

Canadian businesses can take advantage of the different provincial corporate income tax systems to avoid paying some taxes. Mintz and Smart (2001) describe how corporations operating in multiple jurisdictions use financial techniques, such as lending among affiliates situated in provinces with different corporate tax rates, to reduce the amount of taxes paid to provincial governments. They estimate that the elasticity of taxable income with respect to tax rates is 4.9 for "income shifting" companies and 2.3 for companies that use the provincial statutory allocation

formula. Klassen and Shackelford (1998) came to a similar conclusion about corporations avoiding state income taxes in Canada and the United States. They found evidence of a specific form of corporate tax avoidance relating to the shipment of manufactured goods from warehouses located in low-tax jurisdictions.

Despite being a relatively large federal state with a fair degree of variation in provincial tax policy, tax competition among Canada's sub-central governments does not result in a great deal of inefficiency. The equalization transfer program and the Code of Conduct on Incentives have helped prevent sub-central tax competition in Canada from spiraling into a race to the bottom. As a result, many of the potential negative effects of sub-central tax competition, including the avoidance of sales taxes through cross-border shopping, short distance labor migration, and the inefficient location of businesses, are less prevalent in Canada.

III. B. United States

The United States is a federal state whose individual states maintain a strong tradition of autonomy and independence from the national government. The states' ability to engage in tax competition is minimally regulated by the federal government, and consequently, there is a great deal of variation in SCG tax structure. This freedom allows for intense competition among the states to offer attractive tax incentives so that businesses will locate in their jurisdictions.

Overview of the Fiscal System

The United States consists of 50 state governments and nearly 90,000 local governments, which include municipalities, townships, counties, school districts, and special service districts. The federal government levies income taxes on individuals and corporations. These account for the bulk of total tax revenue, but the government also collects social security taxes, excise taxes, estate and gift taxes, customs duties, and other miscellaneous taxes.

The federal structure of the United States gives the individual states the authority to tax their citizens and activities within their borders, so long as the states do not infringe on the powers reserved to the federal government by the U.S. Constitution. States delegate some of this taxing authority to their local governments. Most states levy individual and corporate income taxes, sales taxes, and excise taxes, relying most on sales taxes and somewhat on income taxes. Local governments rely heavily on property taxes and to a lesser degree on sales taxes. Economic development literature relating to the states focuses primarily on sales and excise taxes and business taxes, as these affect state tax revenues the most. The latter influence business location decisions in the United States, while the former distort consumer consumption decisions. Table 3 shows the distribution of taxes collected by the three levels of government. Table 4 shows the composition of aggregate state tax revenues, and Table 5 shows the composition of aggregate local government tax revenue.

**Table 3: Distribution of Revenue by Tax Type Collected
by All Federal, State, and Municipal Governments in the United States**

	1998			2006		
	Federal	State	Local	Federal	State	Local
Property tax	0.0%	4.9%	95.1%	0.0%	3.3%	96.7%
General sales tax	0.0%	81.9%	18.1%	0.0%	80.3%	19.7%
Selective sales/excise taxes	39.0%	50.7%	10.4%	36.3%	52.1%	11.6%
Individual income tax	81.4%	17.0%	1.6%	79.5%	18.7%	1.7%
Corporate income tax	84.8%	13.8%	1.4%	87.0%	11.7%	1.3%
Motor vehicle license	0.0%	91.8%	8.2%	0.0%	92.7%	7.3%
Social insurance/retirement	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Other taxes	61.9%	25.8%	12.2%	54.4%	29.9%	15.7%
Total Taxes	67.9%	19.7%	12.4%	66.8%	19.7%	13.4%

Source: Office of Management & Budget, 2008; Tax Policy Center, n.d.

**Table 4: Composition of U.S. State Government
Tax Revenue for Select Taxes, Fiscal Year 2006**

	Amount, real 2006 dollars (thousands)	Share of General Revenue, nominal	Average State Share	Minimum Share	Maximum Share
Property Tax	\$11,793,847	0.9%	1.3%	0.0%	18.5%
Total General Sales Tax	\$226,711,657	16.4%	15.1%	0.0%	34.3%
Total Select Sales Tax	\$106,260,472	7.7%	7.9%	2.3%	19.3%
Total License Taxes	\$45,241,306	3.3%	3.3%	1.1%	16.3%
Individual Income Tax	\$245,882,826	17.8%	15.5%	0.0%	32.8%
Corporate Net Income Tax	\$47,465,522	3.4%	3.2%	0.0%	10.5%
Death and Gift Tax	\$4,744,688	0.3%	0.3%	0.0%	1.3%

Source: Tax Policy Center, n.d.

**Table 5: Composition of U.S. Local Government
Tax Revenue for Select Taxes, Fiscal Year 2006**

	Amount, real 2006 dollars (thousands)	Share of General Revenue, nominal	Average State Share	Minimum Share	Maximum Share
Property Tax	\$347,315,253	27.9%	28.7%	10.2%	55.7%
Total General Sales Tax	\$55,467,074	4.5%	4.3%	0.0%	19.5%
Total Select Sales Tax	\$23,675,036	1.9%	1.7%	0.0%	7.3%
Total License Taxes	\$16,661,932	1.3%	1.5%	0.3%	6.6%
Individual Income Tax	\$22,716,546	1.8%	1.4%	0.0%	17.1%
Corporate Net Income Tax	\$5,465,261	0.4%	0.2%	0.0%	3.7%
Death and Gift Tax	\$130,425	0.0%	0.0%	0.0%	0.3%

Source: Tax Policy Center, n.d.

The Commerce Clause of the U.S. Constitution grants Congress the power to “regulate Commerce among the several States” (Article I, § 8, cl. 3). The Supreme Court has interpreted this clause to limit the states’ power to interfere with interstate commerce, including the ability to tax items of commerce. It was not until 1977 that the Supreme Court developed a four-part test allowing states to tax interstate commerce. The test provides that: (1) the taxed activity must have a substantial “nexus,” or business connection, within a state; (2) the tax must be fairly apportioned; (3) the tax must bear a fair relation to the services provided by the taxing state; and (4) the tax must not discriminate against interstate commerce (*Complete Auto Transit, Inc. v. Brady*).

Forty-five of the 50 states impose corporate income taxes; two more collect a franchise tax or a gross receipt tax instead (see the appendix). In the states that levy corporate income taxes, 2009 rates range from 1 to 12 percent. The standard federal corporate income tax rate ranges from 15 to 35 percent. The importance of the state corporate income tax has declined in recent years, dropping from an average of 10 percent of total state revenue in the 1970s to 7.1 percent in 2007 (Edmiston & Arze del Granado, 2006; Federation of Tax Administrators, n.d.a).

Apportionment of the corporate income tax base amongst the states is an important feature of the SCG tax system because firms can operate and sell their products in more than one state. States have developed a variety of formulas to apportion business income. The most popular formula was formerly the three-factor formula giving equal weight to the proportion of a firm’s sales, property, and payroll within each state (Advisory Commission on Intergovernmental Relations, 1991). Since the 1990s, a large majority of states have switched to formulas weighting sales more heavily (Edmiston & Arze del Granado, 2006). The Supreme Court even approved the use of a single-factor sales formula (*Moorman Manufacturing Co. v. Bair*). As of 2008, nine states use the three-factor equal weighting; 14 states use a 50-percent weight on sales; five states use between 50- and 100-percent weight on sales; 11 states use a single-factor sales weight; and eight states use a mixture of formulas (Federation of Tax Administrators, n.d.c).

Businesses in a state with a single-factor sales formula will have a competitive advantage if they mainly sell their products to other states. Suppose a firm in State A, a single-factor sales state, sells most of its products in State B, a three-factor state. In this case, the manufacturing firm will likely pay fewer taxes than if both states had uniform apportionment methods. Conversely, a firm in State B, the three-factor state, that sells most of its products to State A will pay more taxes than if both states used the same accounting method.

The relationship between parent companies and their subsidiaries further complicates the state corporate income tax system. Some states use a “separate accounting” system that only considers the income from a corporation with a nexus inside its borders, whether it is the parent company or a subsidiary. Other

states have adopted a “combined reporting” system that treats unitary subsidiaries as if they were divisions of the parent (Pomp, 2004). The subsidiaries’ income is then included in the parent’s income to create a measure of aggregate corporate income, which is used to apportion the tax base according to state law.

There is some evidence that states with combined reporting perform better economically than states that use separate accounting. Between 1990 and 2007, only eight states that levy a corporate income tax rate achieved net positive growth in manufacturing employment; seven of those eight states used combined reporting for the entire period (Mazerov, 2009). Generally, switching to a combined reporting system results in a fairer accounting system and additional tax revenue for states. Twenty-three of the states that tax corporate income used this system as of April 2009.

The federal government does not collect a sales tax, but it does collect excise taxes on certain goods, such as cigarettes. Forty-five out of the 50 states levied state sales taxes ranging from 2.9 to 7.25 percent in 2008, resulting in an average collection of 31.5 percent of total state revenues (Federation of Tax Administrators, n.d.a). In addition, 36 of these states allow their local governments to levy sales taxes. Businesses with a “physical presence” in a state must collect sales taxes on their in-store transactions. However, mail order and online retailers, otherwise referred to as remote vendors, are generally exempt from this requirement. In 1992, the U.S. Supreme Court ruled that remote vendors are exempt from collecting sales tax if they lack a physical presence in the state or if their only connection with the state’s customers is via common carrier (*Quill Corporation v. North Dakota*). Therefore, if a corporation in State A sells its products to individuals in State B and ships them by mail, it is exempt from collecting any sales tax for State B. On the other hand, if the corporation sells its products to local stores in State B, it is not exempt from collecting taxes on in-store sales for State B (McLure, 2002).

The Supreme Court believed it would be unfair to require remote vendors to navigate the complex legal and administrative systems of all 50 states in order to collect the appropriate amount of tax on its sales. Each of the 45 states with sales tax has its own complicated legal structure and administrative procedures for collecting such a tax. Interpreting these various statutes, regulations, and procedures places a significant burden on remote vendors, especially those making large amounts of sales to multiple states.

Recently, the states that levy a sales tax have begun pushing for a simpler method of ensuring compliance from remote vendors. They are seeking to eliminate the economic distortions and inequities caused by the de facto sales tax exemption approved by *Quill v. North Dakota*. Forty-four of these states participate in the Streamlined Sales Tax Project to simplify and modernize sales and use taxes via uniform tax definitions, rate simplification, and other simplified administrative and reporting procedures. Organizers of the project hope that with the aid of

computer technology and a simplified and modernized sales tax structure, Congress and the Supreme Court will no longer view the burden on remote vendors of state sales tax collection as unfair and unreasonable (McLure, 2002).

Finally, unlike Canada, the U.S. states do not have an explicit agreement to not bid for businesses. State governments often compete with each other for the location of private investment production by using subsidy packages and preferential tax treatment (Mattey & Spiegel, 1995). Arguably, these specialized tax policies enrich one state by capturing economic activity at the expense of another state and deplete the total funds available to a state. The Supreme Court declined to extend federal jurisdiction to claims that these policies are unconstitutional (*Daimler-Chrysler Corporation v. Cuno*). The Court reasoned that state budgets frequently have an array of tax and spending provisions that may be challenged on a variety of bases, and one taxpayer's interest in the state treasury is shared with thousands of others. Allowing citizens to challenge these targeted tax incentives would overburden the federal courts. As a consequence, states can employ a wide variety of targeted tax incentives, including: corporate and personal income tax exemptions; tax exemptions or moratoriums on land or capital improvements, machinery or equipment, and manufacturing inventories; sales tax exemptions on new equipment; tax incentives for the creation of new jobs or industrial investment; and tax stabilization agreements for specialized industries (Chi & Hofmann, 2000).

Empirical Studies

The variation in state corporate income tax structure gives researchers the opportunity to study the effects of tax competition in the United States. Omer and Shelley (2004) found that among competing states, a change in the apportionment formula in one state eventually led to a similar change in neighboring states. Further, adding to the idea that the mobility of capital plays a role in how states plan their tax policies, they also found that states with large stocks of immobile capital, such as natural resources and agricultural land, were less likely to change their apportionment formula.

Corporations can exploit the different accounting systems among the states by shifting income and expenses within the larger corporate group from a high-tax state to a low-tax state or by forming a holding company that is incorporated in a state with no corporate income tax. Fox et al. (2005) suggest that many corporations took advantage of the changes in apportionment formulas in the 1990s by shifting their taxable income to states with lower tax rates. The ability of businesses to substantially reduce their state tax liability by forum shopping demonstrates how tax competition can produce negative results for SCGs.

A case study of corporate income tax structure changes in the state of Georgia presents additional evidence that apportionment formula changes affect firm behavior. Georgia switched to a double-weighted sales apportionment formula in 1995. Edmiston and Arze del Granado (2006) hypothesized that switching

to this formula would likely stimulate payroll and property in the state, as a firm would no longer be penalized by the apportionment formula for having larger stocks of productive factors. As a result of the formula change, the corporations examined by the authors decreased their in-state sales by 6.3 percent between 1992 and 2002, while their average payroll increased by 2.0 percent and average property values increased by 2.1 percent. Since there is no mandated uniformity among states' business income apportionment formulas, states can strategically change their accounting methods to compete for business.

Empirical evidence shows that some corporations were further able to exploit differences between the federal tax structure and the various state tax structures. The Tax Reform Act of 1986 created a rate structure where the federal corporate income tax rate exceeded the federal individual income tax rate. This change created incentives for corporations to engage in aggressive tax planning so that their income would be taxed at the lower individual income tax rates. As a result, many corporations changed their corporate legal form to limited liability and "pass through" taxation entities, which are not subject to corporate income taxes (Fox et al., 2005). Rather, individual shareholders are taxed on the personal income earned from these business activities at the lower individual rates, thereby decreasing overall business tax liability.

Case studies of cigarette and gas excise taxes provide further insight into the effect of sub-central sales tax competition in the United States. Besley and Rosen (1998) found a significant positive response of state tax rates to a federal tax increase on cigarettes and gasoline. A 10-cent per pack increase of the federal excise tax on cigarettes led to a 2.8-cent increase, on average, in the states. Similarly, a 10-cent increase in the federal excise sales tax on gasoline led to a 4.1-cent increase, on average, in the states.²

In addition, Nelson (2002) found that a state's tobacco and gasoline tax policies are influenced by neighboring states' policies, noting that states with strong tobacco or liquor industries showed lower excise tax rate levels for those products. Using population-contiguity weights, Rork (2003) found similar results, noting that an average increase of a neighboring state's cigarette excise sales tax by 10 cents will induce an increase in the home state by 4 to 6 cents, on average.³

A more complex study by Devereux et al. (2007) tested the robustness of the Besley and Rosen (1998) results by measuring simultaneous vertical and horizontal excise sales tax competition for cigarettes and gasoline between 1977

² One limitation of this study, however, is that Besley and Rosen could not account for the interaction between state excise and sales taxes.

³ Under traditional contiguity weights, each bordering state is assigned an equal value to the other bordering states. Under population-contiguity weights, one bordering state's population is divided by the sum of the entire population in all bordering states.

and 1997. Their framework incorporated price-elastic individual demand for the taxed good, as well as household mobility between different tax jurisdictions. They found a weak relationship between a state's gasoline tax and changes in other states' gasoline taxes and the federal gas tax. Conversely, they found that a state's cigarette tax rate was positively related to the weighted average of other states' cigarette taxes but had no relationship to the federal cigarette tax. Mobility costs provide one possible explanation for the different results between cigarettes and gasoline taxes. It is easier to cross state borders to purchase cigarettes, and transportation costs are lower, while cross-border shopping for gasoline is inherently more difficult and costly. Chernick (2009) found that the revenue effect of cross-border shopping for cigarettes is minimized by tax competition, as neighboring states keep their tax rates within a fairly close range of one another.

A survey of the empirical literature regarding the responsiveness of U.S. firms to general tax policies is mixed. Some authors suggest that effective tax rates explain much of the industry-specific location decisions (Papke & Papke, 1990; Newman, 1983). Others conclude that tax rates have little or moderate effect on the location decisions of businesses (Bartik, 1985; Phillips & Goss, 1995). Instead, they find the decisive factors to be elements of the traditional market and the business climate, including wage rates, market size, energy costs, unionization and collective bargaining power, and the quality of public services, including expenditures on health, education, and miles of road (Bartik, 1985; Papke & Papke, 1990; Papke, 1987; Helms, 1985; Wyaat, 1994; Phillips & Goss, 1995; Plaut & Pluta, 1983). The state and local tax burden as a share of the overall cost of doing business is small, estimated at 1.2 percent, which may explain the lack of causation between lower taxes and increased business investment (Lynch, 2004).

Finally, research on targeted tax incentives among U.S. states highlight the negative costs imposed on taxpayers. Brunori (1997) provides multiple examples of incentive packages offered to large companies by state and local governments. Among these is a \$140 million package offered to Dofasco Inc. by the Kentucky state government in 1994. This created 400 jobs at a cost of \$350,000 per position. The Alabama state government's \$250 million package to Mercedes-Benz in 1993 created 1,500 jobs at \$150,000 per job. South Carolina's government gave a \$170 million package to BMW in 1992 that created 1,900 jobs at \$89,000 per job. One rough estimate of the total tax subsidies given to businesses, extrapolated from results from eight states, calculated that all 50 states spent approximately 30 percent of national gross domestic product for job creation in 1996 (Thomas, 2000). Brunori (1997) argued that most tax incentives do not correspond to defined standards of appropriate revenue collection, equity, administrative efficiency, and accountability. Brunori concluded in 2001 that targeted tax incentives are often "a matter of political expediency" because job creation occurs more quickly and more visibly than other public efforts like education or infrastructure spending and because the costs of job creation are hidden.

Considering the size, geography, and complexity of the sub-central tax system in the United States, it is difficult to draw any strong conclusions about the effects of tax competition. Evidence suggests that a state's tax policies are influenced by competing states' policies and federal policy; however, the significance and degree of influence seem to depend on the cost of mobility. For example, states with larger stocks of immobile taxable capital seem to worry less about their business income apportionment formulas. A more general conclusion about tax competition in the United States is that the high level of sub-central fiscal autonomy coupled with the great variation in state tax laws are core reasons for the prevalence of tax inefficiencies. Without greater tax code uniformity among the states, multistate corporations will continue to exploit the variation among state policies, causing a loss of tax revenue for the state governments. Cooperation is a key step to minimizing such inefficiencies. The development of the Streamlined Sales Tax Project shows that state governments are looking for ways to cooperate in order to mitigate the negative consequences of the SCG tax structure.

III. C. Japan

Japan is a unitary state whose central government sets local tax rates and makes local expenditure decisions. Local governments rely on large intergovernmental transfers to meet their expenditure needs. There is little variation in local taxes, although the central government gives SCGs some authority to alter their tax rates. Evidence following recent decentralization efforts suggests that SCGs may compete using special purpose, discretionary taxes.

Overview of the Fiscal System

Compared to the United States and Canada, Japan's local public finance and intergovernmental relations systems are more rigid. As in most unitary states, Japan's national government has primary constitutional authority to impose new taxes or alter existing taxes at both the central and sub-central levels (Otsuka et al., 2006). The government exercises its authority to set local taxes through the local tax law, which grants SCGs a limited degree of flexibility to change tax rates. This system results in fairly uniform taxes throughout the country. The guiding principal behind the uniformity is that the level of services should be generally equal throughout the country. While the 1947 Constitution implemented a new democratic form of government as well as some aspects of local autonomy, the Japanese people refused to give up their long-standing tradition in strong national government and interest in regional uniformity. SCGs rely on large intergovernmental transfers from the center to achieve this uniformity.

SCG political units include prefectures and municipalities. There are 47 prefectures, which correspond to U.S. states and each of which has supervisory authority over all municipalities in its territory. Japan has about 1,800 municipal governments, roughly 780 cities, and 1,000 towns and villages. SCGs are responsible for education and culture, infrastructure, health and welfare, and

public law and order expenditures, which amount to approximately 70 percent of total expenditures. The local autonomy law grants prefectures the authority over functions that “require uniformity in performance, cover a wide geographical area, are deemed too extensive for management by municipalities, or require efforts to coordinate two or more cities, towns, or villages” (Mihaljek, 1997). The SCGs are allowed to levy and collect local taxes. In principle, local governments have many administrative responsibilities, but these often are subject to central government control.

Taxes in Japan are levied at all levels of government: central, prefectural, and municipal. Taxes levied by the central government include the income tax, corporation tax, consumption tax, gasoline tax, and liquor tax. Prefectural and municipal taxes include inhabitant taxes, property taxes, and numerous consumption taxes. The structure of the local tax system is complex and involves overlapping tax bases. For example, a firm can be subjected to municipal and prefectural inhabitants taxes, the prefectural enterprise tax, and the national corporate tax. Table 4 shows a selection of taxes levied by different local governments.

Table 6: Local Tax Structure in Japan

Category		Tax Authorities			
		Prefectures		Municipalities	
Purpose	Tax	Tokyo Metropolis	Other prefectures	Municipalities	Special Wards (Tokyo)
General Purpose	Inhabitant tax	✓	✓	✓	✓
	Enterprise tax	✓	✓		
	Local consumption tax	✓	✓		
	Fixed asset tax	✓	✓	✓	
	Special landholding tax	✓		✓	
	Automobile tax	✓	✓		
	Golf links tax	✓	✓		
	Tobacco tax	✓	✓	✓	✓
Special Purpose	City planning tax	✓		✓	
	Business office tax	✓		✓	
	Automobile acquisition tax	✓	✓		

Source: Policy Making and Civil Society, 2007, modified by authors

In 2007, prefectural taxes included: a.) *general purpose taxes*, such as the inhabitants tax, enterprise tax, local consumption tax, automobile tax, and real property acquisition tax; b.) *special purpose taxes*, such as the automobile acquisition tax and light oil delivery tax, which are set aside for specific public expenditures like roads; and c.) *a discretionary tax*, which can be levied only with the Minister of Internal Affairs’ explicit consent (Policy Making and Civil Society, 2007). Prefectures rely most heavily on the enterprise tax, which is based on the corporation’s income and is therefore highly sensitive to the business cycle.

Municipalities levy general purpose taxes, like the municipal inhabitant tax and fixed asset tax, and special purpose taxes such as the business office tax, spa tax, and city planning tax. Similarly, municipal discretionary taxes can be set with the consent of the minister of internal affairs. Municipalities rely mainly on individual income and property taxes, both of which have relatively stable tax bases.

Although local governments have tax administration functions, they have little autonomy in setting the tax rates. Instead, the national local tax law sets “fixed” rates, “maximum” rates, and “standard” rates. Local jurisdictions are allowed to deviate from the standard rates with prior approval from the minister of internal affairs, but only a small percentage of local governments have taken advantage of this flexibility. The result is that local taxes are fairly uniform throughout the country.

For example, the standard prefectural inhabitants tax on corporations is 5 percent, but it may be raised to a maximum of 6 percent (Policy Making and Civil Society, 2007). Likewise, the standard municipal corporate inhabitants tax is 12.3 percent but may be raised to 14.7 percent. Prefectures and municipalities also levy per-capita tax rates on corporations. Municipalities are allowed to increase the per-capita rate to 1.2 times the standard rate. The local individual inhabitants taxes are set at flat rates of 4 percent in prefectures and 6 percent in municipalities. The standard municipal property tax rate is 1.4 percent but has a maximum allowable level of 2.1 percent.

In fiscal year 2005, local taxes accounted for 40 percent of Japan’s total tax revenue. Of this amount, prefectural and municipal tax revenues comprised 43.7 percent and 56.3 percent respectively (Policy Making and Civil Society, 2007). However, due to their large expenditure responsibilities, only 37.4 percent of local government revenues came from local taxes. Transfers from the central government comprised 34.6 percent, and local bonds made up 11.2 percent of local government revenues. In addition, the central government provides a set of specific purpose grants to support local government expenditures. Japan’s national government clearly has a significant role in both tax rate setting and the revenue collection of local governments.

According to a recent report by Matsuoka (2008) for the Japan Center for Economic Research, there has been a significant increase in the revenue disparities among regions since 1999—particularly rural and urban. This gap is the result of increasing revenues from the enterprise tax following export industry growth, and increasing returns on foreign direct investment, both of which are mainly clustered in Japan’s urban areas. The share of revenues generated from income and consumption taxes have stayed roughly constant throughout this period. A comparison across OECD countries shows that Japan is heavily reliant on the corporate tax for local government revenues (more than 20 percent) (Matsuoka, 2008).

Empirical Studies

Centralized tax administration, decentralized provision of public services, and a heavy dependence on intergovernmental transfers are salient characteristics of Japan's two-tier local government system. This intergovernmental "vertical dominance model" seeks to achieve equality in terms of service provision among jurisdictions independent of the tax base (DeWit & Steinmo, 2002; Ma, 1997). Overall, examples of tax competition in Japan are extremely limited due to the lack of local autonomy in setting tax rates.

Despite the fact that local governments have some flexibility to change certain tax rates, the evidence suggests that very few take advantage of these options (Boadway et al., 2000; Mochida, 2001; Tani, 2009). Mochida (2001) reports that no localities set their tax rates below the standard rates, because the local public finance law would prohibit them from issuing local bonds. This is a powerful disincentive, since local governments rely heavily on borrowing to meet their expenditure needs. All but one prefecture raised the corporate tax rate over the standard rate but did not increase personal tax rates due to fears of electoral consequences. Furthermore, very few local governments have sought the minister of internal affairs' permission to levy non-listed discretionary taxes, also referred to as "extralegal specific purposes taxes" (Tani, 2009). One notable example, however, is the industrial waste tax that has been imposed by 27 prefectures and one municipality between 2002 and 2008. Tani (2009) suggests that jurisdictions tend to enact this tax after their neighboring jurisdictions have also done so to prevent the location of waste-intensive businesses in their borders. This is a good example of horizontal tax competition.

Another type of tax competition in Japan is the extension of preferential tax rates and tax exemptions by local governments to attract certain businesses (Tani, 2009). Examples of this are ad hoc tax rebates to attract firms to designated industrial parks (Jones & Tsutsumi, 2008).

Large vertical fiscal imbalances exist between the central and sub-central levels, which is due in part to the division between local expenditure responsibilities and revenue-raising powers (Mochida, 2001). The government of Japan addresses these fiscal imbalances through the reallocation of earmarked revenues and subsidies. Since local taxes account for 35.2 percent of prefecture revenues and 35.0 percent of municipality revenues, local governments rely heavily on the local allocation tax. This unconditional grant from the central government accounts for 50 to 60 percent of all transfers to local governments or approximately 18 percent of local revenue (Policy Making and Civil Society, 2007). The equalization formula accounts for basic financial needs, which is not the actual expenditure needs of a local government but a standardized measure based on the level of public services required by the central government. The effect of fiscal equalization in Japan is quite powerful, as rural areas frequently have a much higher index of per-capita revenues than urban areas (DeWit & Steinmo, 2002).

A debate over decentralization and greater devolution of powers to the local governments has continued for more than a decade (Mihaljek, 1997; Sayuri, 2005). Financially stronger local governments, such as the urban areas, seek greater flexibility to meet their revenue and expenditure needs. For example, the Tokyo and Osaka prefectures, the two largest, richest, and most urbanized, represent about 16 percent of Japan's total population, generate approximately 25 percent of gross domestic product and pay 42 percent of all national taxes (DeWit & Steinmo, 2002). Most of these national taxes are redistributed to poorer regions through the local allocation tax, of which Tokyo typically only receives back about 6 percent of what it pays. Japanese industry and financial institutions believe that greater decentralization will result in a more efficient government and a smaller tax burden. However, there are two major concerns about greater decentralization. Financially weaker governments anticipate that devolution will decrease the availability of the local allocation tax, while the central government worries about the horizontal inequality that would result and the need for increased transfers to poorer local governments (Mihaljek, 1997).

Japan's economic troubles have affected its fiscal equalization system, as there is less revenue available for sharing (Boadway et al., 2000). In 2006, Japan implemented tax reforms that transferred revenue sources from the national income tax to local inhabitants taxes. One purpose behind this reform was to enable local authorities to efficiently choose their desired level of public services. The government reformed the local allocation tax so that subsidies of 3 trillion yen were essentially converted to local taxes, and another 1.4 trillion yen in subsidies were eliminated (Policy Making and Civil Society, 2007).

The split between expenditure responsibility and revenue-raising responsibility results in a lack of accountability that arguably increases the incentive to spend. Mihaljek (1997) presents some evidence that the tendency of government to expand as a result of higher revenue and expenditure centralization is much stronger in Japan than other industrialized countries. An important consequence of this reduction in central government transfers and centralized expenditure decisions is that local governments are forced to borrow large amounts to cover their budget deficits, about 17 percent of total local revenue. If sub-central governments had greater tax autonomy, they could more clearly base their expenditures on local preferences (Mihaljek, 1997).

Japan's strong central government and associated control over local government, plus the preference for regional equality means prefectures and municipalities lack the freedom found in the United States and Canada to set their own tax rates to match local preferences. This system may be inefficient as there is evidence that governments overspend compared to what local preferences would otherwise be. Even though this inefficiency is mitigated by the system of intergovernmental transfers, these transfers are criticized for lack of flexibility (DeWit & Steinmo, 2002).

III. D. South Korea

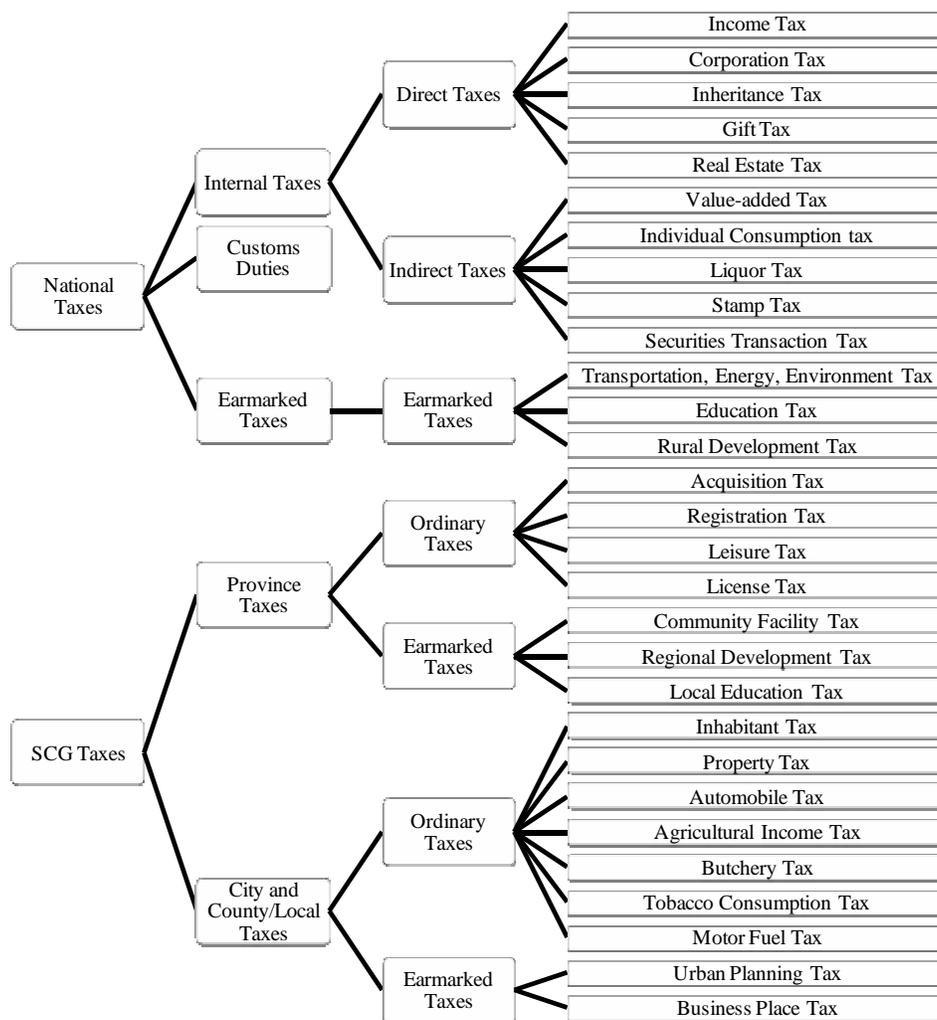
South Korea is a unitary state with a strong central government. The central government sets SCG tax policy and collects the majority of tax revenues. Recent decentralization efforts have granted SCGs limited flexibility to set local taxes for the first time. Local politics, tedious administrative processes, and unconditional equalization grants have made South Korean SCGs reluctant to use these new taxation powers. However, a recent case study of aircraft property tax rates illustrates how SCG tax competition is constrained in South Korea.

Overview of the Fiscal System

The complex sub-central government system in South Korea can be divided into two tiers: regional and local governments. Regional governments include the Seoul metropolitan government, five direct jurisdictional cities, and nine provincial governments. Local governments fall under the control of the direct jurisdictional cities or the provincial governments. The former include 22 autonomous city districts and 33 self-governing wards, and the latter include 67 small cities and 137 counties (Chu & Norregaard, 1997).

The national government collects about three-fourths of total tax revenue. The central government collects internal taxes, customs duties, and three earmarked taxes. Regional governments collect four general purpose and three special purpose taxes, while all local governments collect seven general purpose and two special purpose taxes. As autonomous units, Seoul and the five direct jurisdictional cities have slightly different tax systems, but their residents pay the same taxes (National Tax Service, 2008). Figure 1 illustrates the taxes collected at each level of government.

Figure 1: South Korea's Tax Structure



Source: National Tax Service, 2008, figure by authors

The bulk of national revenue comes from the income tax, corporate tax, and the value-added tax (National Tax Service, 2008). Local governments collect large revenue shares from the acquisition tax, registration tax, and resident tax (Korea Institute of Public Finance, n.d.a; Korea Institute of Public Finance, n.d.b). Tables 7 and 8 highlight the share of tax revenue collected at various levels of government by tax type.

Table 7: Share of Revenue Collected by National and Local/Regional Governments in South Korea

Tax Revenue	2004	2005	2006
National tax	77.5%	78.0%	77.0%
Local/regional tax	22.5%	22.0%	23.0%
Total	100.0%	100.0%	100.0%

Source: Korea Institute of Public Finance, n.d.c

Table 8: Share of Collected Tax Revenue, by Tax Type and Year, in South Korea

Tax Category	2004	2005	2006
Direct tax	52.3%	53.9%	55.1%
income tax	24.6%	23.6%	27.2%
corporate tax	25.9%	28.5%	25.8%
inheritance tax	1.8%	1.8%	2.1%
assets revaluation tax	0.0%	0.0%	0.0%
Indirect tax	45.2%	43.6%	42.1%
value-added tax	36.3%	34.6%	33.5%
special excise tax	4.8%	4.2%	4.3%
liquor tax	2.7%	2.5%	2.1%
securities transaction tax	1.4%	2.3%	2.2%
telephone tax	0.0%	0.0%	0.0%
Other tax revenue	2.6%	2.5%	2.8%
Sub-total, internal tax	100.0%	100.0%	100.0%
Local/Regional Tax			
acquisition tax	15.7%	18.5%	18.6%
property tax	3.0%	7.2%	7.5%
registration tax	19.6%	18.9%	19.3%
automobile tax	5.2%	5.3%	5.2%
resident tax	14.4%	15.3%	15.1%
business office tax	1.7%	1.7%	1.6%
city planning tax	3.5%	3.8%	3.9%
fire fighting facilities tax	1.4%	1.2%	1.3%
aggregated land tax	5.9%	0.0%	0.0%
tobacco consumption tax	8.0%	6.8%	6.5%
the past year revenue	1.7%	1.8%	1.6%
other taxes	20.0%	19.6%	19.5%
Sub-total, local/regional tax	100.0%	100.0%	100.0%

Source: Korea Institute of Public Finance, n.d.a; Korea Institute of Public Finance, n.d.b

Local governments manage their individual tax systems in close consultation with the central government's local tax bureau of the Ministry of Home Affairs. Furthermore, although the local tax law gives local governments the power to increase or decrease local tax rates within 50 percent of the national standard rate, there are very few instances of different tax levels among South Korean local governments. As a result, there is little variation in the tax systems of the local governments. In addition, national laws regulating national and local tax rates forbid tax base sharing between the central and local governments except where explicitly permitted. The education tax, special tax for rural development, corporate and individual income taxes, and the transportation tax are the only taxes included in the tax base sharing scheme (Kim, 2002).

Due to the emphasis on regional equity and the high degree of centralization, intergovernmental transfers play a major role in financing SCGs. According to

the OECD (2003), intergovernmental transfers account for more than 40 percent of SCG total revenue. The central government awards grants to those SCGs that do not have enough tax revenue to provide adequate public services. The design of intergovernmental transfers is such that regional governments will see their funding from the central government decrease if they collect a large share of their revenues through local taxes (Kim, 2002). While some jurisdictions, like Seoul, are financially self-sufficient, 12 percent of South Korea's SCGs "cannot even fund the salaries of local officials from their own revenues" (Jones, 2009). This means that any reforms to increase local tax autonomy must also address these regional inequalities.

Prior to the Asian financial crisis of 1997, tax policy in South Korea focused primarily on promoting equity. As part of the effort to boost the economy after the crisis, the focus has shifted toward promoting business redevelopment. In general, tax rates in South Korea have fallen to levels lower than most OECD member countries, specifically the personal and corporate income tax rates. Tax incentives and breaks for individuals have also been a part of recent tax policy changes in South Korea. These changes are mainly an attempt to enhance the competitiveness of businesses to promote economic development (Kang, 2006).

Empirical Studies

The structure of the fiscal system and strong central government influence on SCGs in South Korea allow little opportunity for SCG tax competition. However, tax reforms enacted since 1997 granting SCGs limited tax autonomy have created opportunities for research on SCG tax competition. As of 2009, research published in English or Korean on tax competition in South Korea is limited and a survey of empirical literature is not possible. Instead, this section summarizes a single case study of SCG tax competition in South Korea by Nam Hwang-woo (2005), an urban planning professor at the University of Seoul. Nam's study examines the effect of different local registration taxes on decisions by major airlines on where to register their aircraft.⁴

Changes to the tax law in 1984 added aircraft to the list of taxable property in South Korea. The central government set the aircraft property tax at a standard rate of 0.30 percent of the aircraft's value. The property tax revenue from aircraft greatly exceeds that of automobiles and most homes in South Korea, thus policymakers expected competition among local governments for aircraft registrations. However, prior to 1999, regulations on aircraft registration were unclear and records on aircraft registration were not accurate. A reform in the property tax law in 1999 clarified that airlines must register and pay taxes on

⁴ Professor Nam provided additional information on the current status of SCG tax competition in South Korea in personal communications with one of the authors of this report, Dong Ah Won, a native Korean speaker.

their aircraft with a local government. At that time, all aircraft were registered in Seoul or Pusan (Nam, 2005).

Making use of the increased autonomy granted in 1999, eight of the 14 city governments with airports chose to lower the tax rate on registered aircraft from the standard rate of 0.30 percent. Presumably these lower rates were set by local governments to attract a larger tax base and more tax revenue. As Table 9 shows, the local governments of Pusan, Jeju, Incheon, and Seoul lowered their tax rates on aircraft to 0.25 percent, while the local governments of Daegu, Gwangju, Ulsan, and Cheongwon lowered their rates to 0.2 percent. By 2005, Seoul still had the highest number of aircraft registrations while still levying the highest flexible tax rate of 0.25 percent. Local governments with the lowest aircraft tax rates did not see much of an increase in their tax base. The four local governments that chose to set their rate at 0.20 percent only recorded 10 total aircraft registrations (Nam, 2005).

Table 9: Aircraft Property Tax Rates and Revenues in South Korea, by Large City

City	Tax rates	Local Tax Imposed	Aircraft Registered in 2005	Collected Aircraft Tax Revenue in 2003
	percent	year	units	million won
Pusan	0.25	1999	18	651.1
Jeju	0.25	1999	10	225.5
Daegu	0.20	2000	4	123.1
Incheon	0.25	2001	51	3,037.5
Gwangju	0.20	2001	4	136.0
Seoul	0.25	2002	107	2,901.3
Ulsan	0.20	2002	1	40.6
Cheongwon	0.20	2004	1	0.0
Total	–	–	197	7,155.7

Source: Nam, 2005

Nam suggests that mobility costs may have played a significant role in the limited relocation of aircraft. Aircraft service and maintenance is performed wherever an airline has its aircraft registered. Moreover, the more highly trained aircraft service workers tend to be located in bigger cities, such as Seoul and Pusan. Therefore, the costs of fuel, training and/or relocation of the trained labor force, and other opportunity costs have only moved aircraft at the margin. The differences in tax rates may not have been enough to offset the cost for the airlines of moving an aircraft from Seoul and Pusan to a smaller city (Nam, 2005).

Finally, the intergovernmental grant system may have limited the degree of tax competition. The effect of the central government's equalization transfer program moderates aggressive tax competition among SCGs. This is most likely the reason

no SCG has lowered its aircraft tax rate to 0.15 percent, the lowest possible legal rate, Nam says.

Although the movement of aircraft only occurred at the margin, this case study can be used to illustrate the trade-off between regional and central government efficiency. As mentioned, before the 1999 reform all airplanes were registered in Seoul or Pusan, the two largest metropolitan areas in South Korea, with the majority in Seoul. After the introduction of a flexible tax rate on aircraft property, Jeju, Incheon, Daegu, and Gwangju benefited from increased revenues from the new airplane registrations. According to Nam (2005), this redistribution of tax revenue was a positive outcome for these cities.

From the perspective of the central government, however, the 1999 reform most likely resulted in a negative sum game. As shown in Table 7, the total amount of tax revenue collected in 2003 at the new rates totaled 7.1 billion won. At a flat 0.3 percent rate, these aircraft could have generated 8.6 billion won. It is unlikely that this 17.2 percent decrease in total revenue was offset by the rather limited regional redistribution of the tax base (Nam, 2005).

This study, although narrow and limited in scope, highlights some of the limitations of tax competition in South Korea. Due to the structure of the fiscal system, there is little room for variation in SCG tax rates and tax systems. If there are differences, they are limited to variations within 50 percent of the standard rate. A strong central government influence on regional and local affairs coupled with the equalization goals of the intergovernmental transfer system also help decrease the potential for aggressive tax competition among SCGs in South Korea (Nam, 2005; Kim, 2002).

IV. Policy Implications for the OECD

Deciding on a tax policy framework that allows countries to realize the efficiency-enhancing effects of tax competition while avoiding negative outcomes is not easy due to the interaction of various factors. Each SCG's fiscal structure relies on multiple sources of local income and uses different tax instruments to meet its expenditure needs. Each SCG is also an integrated service administrator, providing a multiplicity of services, which makes it difficult to estimate each service's marginal cost. Tax competition must be assessed within these limitations.

We begin by offering general observations on tax competition in the four countries. We compare the extent of SCG tax competition, characteristics that determine the degree of tax competition, and the types of taxes used in competition. Second, we evaluate beneficial versus ruinous tax competition and assess how it relates to ideas of economic efficiency and equity. Third, we consider some potential policy options for channeling and regulating SCG tax competition in these four countries to minimize harmful effects.

IV. A. General Observations

Our survey of Canada, the United States, Japan, and South Korea finds evidence of SCG tax competition in each country, albeit with a great deal of variation. Much of this can be explained by the degree of autonomy the respective SCGs have to set tax policy. However, variation also exists among countries that grant their SCGs a fair amount of autonomy. We find different SCGs using different tax instruments to compete for mobile factors of production.

In general, SCGs in the United States and Canada use major tax instruments such as income taxes and sales and excise taxes to meet a majority of their revenue needs. On the other hand, the small amount of evidence we found regarding tax competition in Japan and South Korea suggest that it takes a much more limited form in these countries, with rate competition occurring only among relatively minor special purpose taxes.

The ability of an SCG to collect tax revenue to meet its expenditure needs depends on the strength of the central government, and its relative authority to set tax policy. For example, South Korea and Japan have strong central governments, high levels of uniformity across SCGs, and low levels of SCG tax competition. Although the central government in both countries sets local tax policy, they have each enacted measures granting limited tax autonomy to their SCGs. Additionally, with growing regional disparities in Japan, the fiscal structure has been criticized in debates supporting decentralization. Based on their strong federalist traditions, Canada and the United States have devolved a large degree of authority to their SCGs. Each of these countries places certain restrictions on state and provincial

tax autonomy, but overall these units of government have a great deal of freedom to set their own tax policies independent of the central government.

In addition to the structure of government, national laws may limit the degree of competition and the number of SCGs may impede the ability to cooperate. For example, in the United States, the regulation of interstate commerce is left to the central government and limited by the Supreme Court's interpretation of the Commerce Clause in the Constitution. This creates political and legal battles whenever states disagree over tax competition. Canada, on the other hand, has used its federal Agreement on Internal Trade to pass the Code of Conduct on Incentives limiting the use of incentives for business relocation purposes to avoid a "race to the bottom." Furthermore, Canada only has 10 autonomous provinces that had to agree to this Code of Conduct, compared to the 50 individual U.S. states. It would be much more difficult to reach a comparable agreement among the U.S. states without a high number of repeated interactions or a strong central enforcer. Long-standing traditions of states' rights and autonomy prevent the federal government from exercising too much control. Interest groups in the U.S. also pressure government officials to craft tax policies that shift taxes away from their members (Hunter & Nelson, 1989; Inman, 1989).

The size of the SCGs can also affect tax competition. Larger jurisdictions may decrease the mobility of many firms due to logistical issues including increased transportation costs and proximity to customers. Moreover, cross-border shopping to avoid paying sales tax is less of a phenomenon. Canada is a good example of this, as its 10 provinces each cover a large land area. It is difficult for a business or individual to reside on a provincial border for the sole purpose of taking advantage of SCG tax differentials.

Overall, the degree of tax harmonization in the United States is considerably lower than in Canada (Vaillancourt, 1992). Moreover, three maritime provinces in Canada have adopted a harmonized sales tax, which is a clear indication of tax harmonization efforts. In the United States, most of the states have joined forces in the Streamlined Sales Tax Project to push for harmonized "definitions" of state sales taxes through federal legislation, while at the same time maintaining their autonomy to set tax rates. Uniform definitions among all SCGs would eliminate exceptions, thresholds, and other indirect tax instruments. While the central governments in Japan and South Korea set uniform taxes among the SCGs, these uniform taxes are not a result of tax harmonization per se, and the efficiency of these systems is often questioned. Table 10 shows a comparison of several of these features across the four countries.

Table 10: Comparison of Tax Competition in Selected Countries

	Canada	United States	Japan	South Korea
Type of Government	Federal	Federal	Unitary	Unitary
Population, in millions	33.5	307.2	127.1	48.5
Estimated Number of SCGs	3,800	87,000	1,850	274
Degree of Tax Competition	Moderate-High	High	Low	Low
Common Tax Instruments Used in Tax Competition	Sales / value-added tax	Sales & Excise, Corporate & Personal Income	Local Discretionary Taxes	Local Discretionary Taxes
Intergovernmental Equalization Transfers	Yes	No	Yes	Yes
Average Population per SCG	8,812	3,531	68,691	177,040

IV. B. Beneficial versus Ruinous Tax Competition

An assessment of SCG tax competition also requires a discussion of whether it leads to predominantly beneficial or ruinous results. The objective criteria used to assess the effects of SCG tax competition helps shape this discussion. For example, the use of an efficiency objective, whether allocative or technical efficiency, to judge outcomes will likely lead to a different view of SCG tax competition than focusing on an equity objective measuring fairness among SCGs and taxpayers. Another important factor is the governmental and fiscal structure in which SCG tax competition takes place. A weak or flawed structure can lead to exploitation and further inefficiencies. Conversely, too much central government influence and regulation squanders any potential for SCGs to realize the effects of tax competition, beneficial or ruinous. With this in mind, this final section discusses some of the prevalent arguments regarding the beneficial and ruinous effects of tax competition in our four case studies.

Although most of the literature on SCG tax competition emphasizes the negative effects, there are several instances in which tax competition can be beneficial. First, beneficial tax competition occurs when SCGs compete with each other to provide a quality-mix of public services with tax burdens that are similar to the neighboring jurisdictions. In addition, Brunori (2001) explains that tax competition may help jurisdictions maintain a balanced tax system and competitive tax rates. Such competition fosters innovation and efficiency in the delivery of public goods and services. Second, because taxpayers have different preferences for public service, tax competition can help adjust taxation levels to match these preferences. Taxpayers can choose which SCG provides a level of public goods and services that best maximizes their utility. Third, studies show that SCGs try to create tax resources by decreasing their tax rates to attract new business. From this perspective, tax competition is beneficial to the SCGs that are able to broaden their tax base and increase their tax revenue as a result.

Despite these benefits, SCG tax competition can likewise lead to detrimental and ruinous results. These may include the under-provision of public services, tax

erosion via a “race to the bottom,” and overall losses in public welfare and tax revenue when firms make inefficient location and relocation decisions. Additionally, the use of tax revenue to provide tax incentives to a limited selection of firms can result in heavier taxes on less mobile bases. This raises equity concerns and may further economic distortions.

Perhaps the most criticized case of tax competition involves targeted tax incentives to induce the relocation of firms. When a firm moves between jurisdictions solely for the purpose of benefiting from lower taxation, the gains to one SCG are offset by the losses to the losing SCG. On a macroeconomic level, there is little reason to believe that relocation will lead to efficiency or economic gains for the country. An efficient national economy depends on firms choosing their locations based on least-cost criteria. A fiscally motivated firm that moves to a locale based on fiscal decisions alone, a so-called “footloose firm,” distorts the national welfare since there is a good chance that transportation, labor, and other costs of production will be inefficient. At the national level, these efficiency losses due to SCG tax competition for new firms/branches are measured in terms of opportunity costs, instead of the accounting costs of an individual firm’s relocation decision.

Our survey of the tax systems and SCG tax competition in Canada, the United States, Japan, and South Korea illustrates how and to what extent competition plays out in each country. We find, generally, as long as SCGs enjoy some fiscal autonomy there will be some level of tax competition. The effects of SCG tax competition are constrained by the governmental and fiscal structures in each respective country. By comparing results from the four countries and using economic models of tax competition for analysis, we offer a few policy recommendations. The goal is for officials to better channel or regulate SCG tax competition in order to maximize the likelihood of beneficial outcomes. First, cooperation among SCGs can limit a potential “race to the bottom.” Second, intergovernmental transfers can reduce regional disparities, thereby mitigating some of the negative effects of SCG tax competition.

Cooperation can be used to avoid a “race to the bottom” and resultant tax erosion. SCGs can avoid these outcomes by agreeing not to engage in tax competition, or at least agree on limiting the provision of tax breaks and incentives. Cooperation is not much of an issue in Japan and South Korea, where SCGs have limited fiscal autonomy. Collaboration is much easier in Canada where the Code of Conduct on Incentives prevents SCGs from bidding for businesses. Cooperation could benefit the United States, however, by alleviating some of the detrimental effects of tax competition. Politically, the United States has a long history of preserving states’ rights, so a top-down reform effort from the central government is highly unlikely. However, the recent push for more uniformity in state sales taxes by the Streamlined Sales Tax Project shows that cooperation is a viable tool for SCGs. Cooperation among the states could help reduce the harmful effects of tax competition stemming from businesses taking advantage of different state corporate income tax accounting systems.

Central governments can administer an intergovernmental transfer program to smooth regional disparities, but they should do so in a balanced manner. South Korea and Japan prioritize regional equality, which is a reason for their large intergovernmental transfer systems, but this focus is often criticized for limiting efficiency. In Japan, growing disparities between the urban and rural areas have led to inefficiencies in the overall fiscal system. Urban regions in Japan can attract more business and capital, making them more capable of generating enough tax revenue through an increased tax base. Rural areas, however, rely on intergovernmental transfers that typically come from taxes raised in urban areas. This goal of regional equality is criticized as inefficient because richer regions end up subsidizing poorer regions, thus giving poorer regions less incentive to be fiscally responsible. Additionally, richer jurisdictions are not able to spend the tax revenue they lose to the intergovernmental transfer system in a way that meets their citizens' preferences. Canada also has a system of equalization transfers, but it has not been heavily criticized for being inefficient. Of the four countries examined in this report, only the United States does not have an interstate equalization grant program. Equalization transfers could help reduce the negative effects of tax competition in the United States by minimizing incentives for SCGs to continually reduce tax rates and increase tax incentives. However, a system of equalization grants may prevent tax competition from occurring at all, if it compensates local governments for low levels of tax revenue or tax effort, as appears to be the case in South Korea. Thus, Japan and South Korea may be more likely to benefit from tax competition if they were to not rely so heavily on transfers to fill their fiscal gaps.

In conclusion, there is evidence that SCGs in Canada, the United States, Japan, and South Korea engage in tax competition, whether to stimulate economic development or to maximize tax revenue or avoid certain costs. Tax competition can result in efficient outcomes or the under-provision of public services. It is for central and sub-central officials to decide on a system of local tax autonomy and central regulation that is most beneficial.

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Appendix

Table 9 shows the variation in tax rates in the United States among the 50 state governments.

Table 11: Examples of United States Tax Variations by State, Fiscal Year 2008

State	Individual Income		Corporate Income	Sales	Excise Tax - Cigarette, Cents Per Pack
	Low	High			
ALABAMA ⁽¹⁾	2.0	5.0	6.5	4.0	42.5
ALASKA	No State Tax		1.0 - 9.4	–	200.0
ARIZONA	2.6	4.5	6.968 ⁽¹⁰⁾	5.6	200.0
ARKANSAS ⁽⁹⁾	1.0	7 ⁽¹³⁾	1.0 - 6.5	6.0	59.0
CALIFORNIA ⁽⁹⁾⁽³⁾	1.0	9.3 ⁽³³⁾	8.84 ⁽¹¹⁾	7.25 ⁽²⁾	87.0
COLORADO	4.6	4.6	4.6	2.9	84.0
CONNECTICUT	3.0	5.0	7.5 ⁽¹²⁾	6.0	200.0
DELAWARE	2.2	6.0	8.7	–	115.0
FLORIDA	No State Tax		5.5 ⁽¹⁴⁾	6.0	33.9
GEORGIA	1.0	6.0	6.0	4.0	37.0
HAWAII ⁽⁷⁾	1.4	8.3	4.4 - 6.4 ⁽¹⁵⁾	4.0	180.0
IDAHO ⁽⁹⁾	1.6	7.8	7.6 ⁽¹⁶⁾	6.0	57.0
ILLINOIS ⁽¹⁾	3.0	3.0	7.3 ⁽¹⁷⁾	6.3	98.0
INDIANA	3.4	3.4	8.5	6.0	99.5
IOWA ⁽⁹⁾	0.4	9.0	6.0 - 12.0	5.0	136.0
KANSAS	3.5	6.5	4 ⁽¹⁹⁾	5.3	79.0
KENTUCKY ⁽⁸⁾	2.0	6.0	4.0 - 6.0 ⁽²⁰⁾	6.0	30.0
LOUISIANA	2.0	6.0	4.0 - 8.0	4.0	36.0
MAINE ⁽⁹⁾	2.0	8.5	3.5 - 8.93 ⁽²¹⁾	5.0	200.0
MARYLAND ⁽⁵⁾	2.0	5.5	8.3	6.0	200.0
MASSACHUSETTS ⁽⁹⁾	5.3	5.3	9.5 ⁽²⁴⁾	5.0	151.0
MICHIGAN ⁽⁹⁾	4.4	4.4	4.95 ⁽²²⁾	6.0	200.0
MINNESOTA ⁽⁹⁾⁽⁴⁾	5.4	7.9	9.8 ⁽²⁵⁾	6.5	123.0
MISSISSIPPI	3.0	5.0	3.0 - 5.0	7.0	18.0
MISSOURI ⁽¹⁾	1.5	6.0	6.3	4.2	17.0
MONTANA ⁽⁹⁾	1.0	6.9	6.75 ⁽²⁶⁾	–	170.0
NEBRASKA ⁽⁹⁾	2.6	6.8	5.58 – 7.81	5.5	64.0
NEVADA	No State Tax			6.5	80.0
NEW HAMPSHIRE	Dividends and Interest Income Only		8.5 ⁽²⁷⁾	–	108.0
NEW JERSEY	1.4	9.0	9 ⁽²⁸⁾	7.0	257.5
NEW MEXICO	1.7	5.3	4.8 - 7.6	5.0	91.0
NEW YORK ⁽¹⁾	4.0	6.9	7.5 ⁽²⁹⁾	4.0	150.0
NORTH CAROLINA ⁽²¹⁾⁽⁶⁾	6.0	7.8	6.9	4.3	35.0
NORTH DAKOTA ⁽⁹⁾	2.1	5.54 ⁽³¹⁾	2.6 - 6.5	5.0	44.0
OHIO ⁽⁹⁾	0.6	6.2	5.1 - 8.5 ⁽³⁰⁾	5.5	125.0

State	Individual Income		Corporate Income	Sales	Excise Tax - Cigarette, Cents Per Pack
	Low	High			
OKLAHOMA	0.5	5.5 ⁽³²⁾	6.0	4.5	103.0
OREGON ⁽⁹⁾	5.0	9.0	6.6 ⁽¹⁰⁾	–	118.0
PENNSYLVANIA	3.1	3.1	10.0	6.0	135.0
RHODE ISLAND	Dividends and Interest Income Only		9 ⁽¹⁰⁾	7.0	246.0
SOUTH CAROLINA ⁽⁹⁾	–	7.0	5.0	6.0	7.0
SOUTH DAKOTA	No State Tax			4.0	153.0
TENNESSEE ⁽¹⁾⁽⁸⁾	Dividends and Interest Income Only		6.5	7.0	62.0
TEXAS	No State Tax ⁽¹⁸⁾			6.3	141.0
UTAH	5.0		5 ⁽¹⁰⁾	4.7	69.5
VERMONT ⁽⁹⁾	3.6	9.5	6.0 - 8.5	6.0	179.0
VIRGINIA ⁽¹⁾	2.0	5.8	6.0	5 ⁽²⁾	30.0
WASHINGTON	No State Tax			6.5	202.5
WEST VIRGINIA	3.0	6.5	8.5	6.0	55.0
WISCONSIN ⁽⁹⁾	4.6	6.8	7.9	5.0	177.0
WYOMING	No State Tax			4.0	60.0
DIST. OF COLUMBIA	4.0	8.5	10.0	5.8	100.0

Source: Federation of Tax Administrators, n.d.b; Federation of Tax Administrators, n.d.d; Federation of Tax Administrators, n.d.e; Federation of Tax Administrators, n.d.f, modified by authors.

- (1) Counties and cities may impose an additional tax on a pack of cigarettes in Alabama, 1¢ to 6¢; Illinois, 10¢ to 15¢; Missouri, 4¢ to 7¢; New York City \$1.50; Tennessee, 1¢; and Virginia, 2¢ to 15¢.
- (2) Includes statewide local tax of 1.0% in California and 1.0% in Virginia.
- (3) Tax rate may be adjusted annually according to a formula based on balances in the unappropriated general fund and the school foundation fund.
- (4) Plus an additional 25.5¢ sales tax is added to the wholesale price of a tax stamp (total \$1.485).
- (5) Sales tax rate increased from 5.0% to 6.0% on March 1, 2008.
- (6) At the time these data were collected, the sales tax rate was scheduled to increase to 4.5% on October 1, 2008.
- (7) At the time these data were collected, the tax rate was scheduled to increase to \$2.00 per pack on September 30, 2008.
- (8) Dealers pay an additional enforcement and administrative fee of 0.1¢ per pack in Kentucky and 0.05¢ in Tennessee.
- (9) 16 states have statutory provision for automatic adjustment of tax brackets, personal exemption, or standard deductions to the rate of inflation. Massachusetts, Michigan, Nebraska, and Ohio index the personal exemption amounts only.
- (10) Minimum tax is \$50 in Arizona, \$50 in North Dakota (banks), \$10 in Oregon, \$500 in Rhode Island, \$500 per location in South Dakota (banks), \$100 in Utah, \$250 in Vermont.
- (11) Minimum tax is \$800. The tax rate on S-Corporations is 1.5% (3.5% for banks).
- (12) Or 3.1 mills per dollar of capital stock and surplus (maximum tax \$1 million) or \$250.
- (13) A special tax table is available for low-income taxpayers reducing their tax payments.
- (14) Or 3.3% alternative minimum tax. An exemption of \$5,000 is allowed.
- (15) Capital gains are taxed at 4.0%. There is also an alternative tax of 0.5% of gross annual sales.
- (16) Minimum tax is \$20. An additional tax of \$10 is imposed on each return.
- (17) Includes a 2.5% personal property replacement tax.
- (18) Texas imposes a franchise tax, known as the margin tax. It is imposed at 1.0% (0.5% for retail or wholesale entities) of gross revenues over \$300,000, with a variable discount allowed for businesses with a variable discount allowed for businesses with revenues between \$300,000 and \$900,000.
- (19) Plus a surtax of 3.35% (2.125% for banks) on taxable income in excess of \$50,000 (\$25,000).
- (20) Minimum tax of \$175. Or, an annual limited liability tax for all corporations with more than \$3 million in gross receipts.

- (21) *The tax brackets reported are for single individuals. For married taxpayers, the same rates apply to income brackets ranging from \$21,250 to \$100,000. Lower exemption amounts allowed for high-income taxpayers.*
- (22) *The new Michigan business tax. First \$45,000 of tax base is exempt. Plus, 0.8% of modified gross receipts (receipts less purchases from other firms) on receipts of \$350,000 or more. A surcharge of 21.99% applies.*
- (23) *Or the Maine alternative minimum tax.*
- (24) *Rate includes 14.0% surtax, as does the following: an additional tax of \$2.60 per \$1,000 on taxable tangible property (or net worth allocable to state, for intangible property corporations); minimum tax of \$456.*
- (25) *Plus a 5.8% tax on any alternative minimum taxable income over the base tax.*
- (26) *A 7.0% tax on taxpayers using water's edge combination. Minimum tax is \$50.*
- (27) *Plus a 0.75% tax on the enterprise base (total compensation, interest, and dividends paid) for businesses with gross income over \$150,000 or base over \$75,000. Business profits tax is imposed on both corporations and unincorporated associations with gross income over \$50,000.*
- (28) *The rate reported in the table is the corporation business franchise tax rate. Corporations with net income under \$100,000 are taxed at 7.5%. Corporations with net income under \$50,000 are taxed at 6.5%. A 4.0% surtax applies through July 1, 2009. The minimum tax is \$500. An alternative minimum assessment based on gross receipts applies if greater than corporate franchise tax. Banking and financial corporations are subject to the franchise tax.*
- (29) *Or 1.78 mills per dollar of capital (up to \$350,000); or a 1.5% alternative minimum tax; or a minimum tax of \$1,500 to \$100 depending on payroll size; if any of these is greater than the tax computed on net income. Small corporations with income under \$290,000 are subject to lower rates of tax on net income. An additional tax of 0.9 mills per dollar of subsidiary capital is imposed on corporations. For banks, the alternative bases of tax are 3.0% of alternative net income; or up to 1/50th mill of taxable assets; or a minimum tax of \$250.*
- (30) *Rates shown are for the franchise tax, which is being phased out through 2010. Current rates apply to 40.0% of the liability, or 40.0% of 4 mills time the value of the taxpayer's issued and outstanding share of stock with a maximum payment of \$150,000; or \$50 to \$1,000 minimum tax, depending on worldwide gross receipts. The commercial activity tax (CAT) equals \$150 for gross receipts between \$150,000 and \$1 million, plus 0.26% of gross receipts over \$1 million. The CAT applies to 60.0% of receipts through March 31, and 80.0% for the remainder of the year. Banks will pay the franchise tax. An additional litter tax is imposed equal to 0.11% on the first \$50,000 of taxable income, 0.22% on income over \$50,000; or 0.14 mills on net worth.*
- (31) *The tax brackets reported are for single individuals. For married taxpayers, the same rates apply to income brackets ranging from \$53,200 to \$349,701. An additional \$300 personal exemption is allowed for joint returns or unmarried head of households.*
- (32) *The rate range reported is for single persons. For married persons filing jointly, the same rates apply to income brackets ranging from \$2,000 to \$15,000. The top tax rate is scheduled to fall to 5.25% for tax years after 2008.*
- (33) *An additional 1.0% tax is imposed on taxable income over \$1 million.*