

## TAX COMPETITION ACROSS SUB-CENTRAL GOVERNMENTS: A SURVEY

### **Abstract**

Tax competition between jurisdictions is hotly debated, and the views on its merits vary widely. While some consider that tax competition brings sub-central fiscal policy closer to citizen's preferences, increases efficiency and productivity of the public sector and avoids tax and spending excesses, others argue that tax competition erodes the tax base, distorts the tax structure, and prompts an under-provision of publicly financed services. Overall the main conclusions are as follows: tax competition is stronger on mobile taxes (corporate and personal income tax) than on immobile taxes (property tax, consumption taxes); tax rates tend to be lower in wealthier jurisdictions; inter-jurisdictional differences in tax raising capacity – or economic wealth – appear to be lower in countries with more tax competition; and there is little evidence of a “race to the bottom” with respect to tax rates and tax revenues. Tax and spending interact, but jurisdictions tend to maintain a given tax-spending ratio over prolonged periods. It appears that tax autonomy and tax competition provide incentives for economic development, especially for small and poor jurisdictions.

## What is tax competition?

Tax competition – both between countries and between the sub-national governments of a country – has become a hotly debated policy issue in the last years. While some consider that tax competition brings fiscal policy closer to citizen's preferences, increases the productivity of the public sector and avoids tax and spending excesses in the public sector, others argue that tax competition leads to tax base erosion, to a distorted tax structure, and to an under-provision of publicly financed services. Tax competition rests on firms' and households' willingness and ability to shift their tax base. Over the last decades, tax base mobility has multiplied. With transport cost rapidly declining and barriers to shifting profits, income, or consumption removed ever more, households and firms may shop around and look for a jurisdiction whose tax and public spending combination suits them most. In turn, sub-national governments have become more active in trying to attract new residents and firms, and they use taxation as a strategic instrument for developing their economy or for raising tax revenues. Taxation and tax levels have become a strategic instrument for governments to increase their competitiveness, as taxation appears to be an important determinant for investment.

This chapter will concentrate on tax interaction and tax competition *within* a country, *i.e.* between sub-central governments. Conceptually, international tax competition hardly differs from within-country competition. Tax competition may be milder between countries than within a country since mobility is lower across international than across national borders. But international tax competition may also be fiercer than intra-country tax competition since a single country can contain sub-national tax competition using rules and devices that are lacking yet at the international level. In general, much of the analysis for sub-national governments remains valid for tax competition between countries as well. Also, tax competition is not only an issue for federal countries where the state level often has constitutionally-guaranteed taxing rights, but also for unitary countries where local governments often have far-reaching tax autonomy. Finally, the chapter concentrates on horizontal tax competition, *i.e.* between jurisdictions of the same level, rather than vertical tax competition between central and sub-central governments, although both types of tax competition interact and may partially offset each other (Box 1).

### Box 1. Vertical tax competition

Vertical tax competition occurs when different government *levels* have individual discretion in setting rates on a common tax base. When an individual government or government level changes its tax rate, it affects the tax base for other government levels. For example, an increase in a central government business tax tends to reduce business investment, thereby reducing the capital stock in all sub-central jurisdictions. Similarly, an increase in the central government personal income tax reduces incentives to work and hence the income tax base for all SCGs. Since the tax increase imposed by one government level diminishes tax revenues for the other government levels, these in turn may have to increase their own taxes in order to rebalance budgets. The tax base becomes a common good, where each government level is imposing a tax externality on the others. Vertical tax competition or tax externalities can be quite pervasive in countries with concurrent taxation of corporate income, personal income or sales and turnover taxes. Examples are a central government income tax on which SCGs set individual surcharges or a combined central/sub-central VAT/sales tax.

Vertical and horizontal tax competition interact. Vertical tax competition tends to raise tax rates and hence to partially offset the effects of horizontal tax competition, but the overall effect depends on the tax mix and the elasticity of the shared tax base. Upward pressure on tax rates might become an issue if an inelastic tax base – such as the property tax or some consumption taxes like the gasoline tax – is shared across government levels, while it could be less salient when a more mobile base – such as the corporate or personal income tax – is shared. Vertical tax competition also depends on the extent to which the central government can commit as a “first mover” to a tax policy that SCGs then take as given. In other words, the more “hierarchical” the relationship between the central and the sub-central level, the less significant is vertical tax competition. Finally, a government's platform in terms of taxation as well as political economy constraints – such as direct democracy – limit the extent to which government levels can exploit the joint tax base. Tax policy coordination across government levels may further help reduce vertical tax competition and excessive taxation (for an overview see Keen, 1998; Wilson, 2001 or Devereux, Lockwood and Redoano, 2007).

## **Horizontal tax interaction and tax base mobility**

### ***Horizontal tax interaction***

Horizontal tax policy interaction (or tax mimicking) is widespread in the OECD realm, even in highly centralised countries that provide sub-central governments with little tax autonomy. The tax policy of one sub-central government seems to depend, at least partially, on what other sub-central governments do, have done or plan to do. Mimicking concerns all taxes, be they business taxes, personal income taxes, consumption taxes or immovable property taxes, i.e. sub-national governments tend to compete on their entire tax mix. The large set of country studies covering the last 15 years or so dealing with tax interaction can be summarised as follows:

- Tax mimicking depends on the type of tax. Mimicking is stronger for business and personal income taxes than it is for consumption and property taxes. The reaction of one government to another's tax policy changes is usually positive, i.e. rising/falling tax rates in one jurisdiction lead to a rise/fall of tax rates elsewhere. Interaction on the property tax is mostly of the yardstick competition type.
- Tax interaction depends on various economic and geographical factors. Urbanised and populous jurisdictions benefit from agglomeration economies, which allow them to set higher tax rates. Tax interaction is fiercer between small than between large SCGs and fiercer between local governments than between state/regional governments. Jurisdictions that are adjacent or that have strong economic ties interact more.
- The intergovernmental fiscal framework plays a crucial role for tax interaction. Intergovernmental grants that equalise tax raising capacity tend to attenuate tax competition, probably by reducing jurisdictions' incentives to develop their economic and fiscal base. Non-equalising grants in general tend to lower tax rates, probably because jurisdictions need less own resource revenue to fund their public services.
- There is often a leader in tax interaction, whose policies are then followed by other governments. Small and sometimes poor jurisdictions appear to be the first mover, because they are more exposed to tax competition and can also benefit more. The emergence of small low-tax jurisdictions has provoked reactions from other jurisdictions and from central government; which in some cases imposed minimum tax rates.
- Vertical tax competition, *i.e.* the competition of different government levels for the same tax base, usually leads to rising tax rates and may hence partly offset the impact of horizontal competition (Box 1).

### ***Tax base mobility***

The intensity of tax competition depends on the willingness and ability of households and firms to move after a change in sub-national tax policy. The crucial question is then how sensitive tax bases react to sub-national tax policy changes, *i.e.* what is the propensity of households and firms to relocate their place of production, consumption or residence following a change in the tax burden in one or – simultaneously – several jurisdictions. Surprisingly and despite the lively policy debate about tax base erosion, there is only scant evidence on the impact of tax competition, one reason being that simultaneous tax interaction and tax-induced mobility is extremely difficult to isolate and measure. The current state of the art can be summarised as follows:

- Tax interaction does not always mean tax competition. Some tax interaction is based on voter's and policymakers' preferences to follow the fiscal policies of neighbouring jurisdictions, without

any willingness - and often neither the ability - to attract additional tax bases. Tax policy changes in many jurisdictions may result from the pressure from the constituency to discover new policy avenues or else to avoid lagging behind other communities. This form of competition is often called “yardstick” or political competition, since tax policy changes are in reaction to observed policies and policy alternatives elsewhere. However, true tax competition and yardstick competition may often go hand in hand.

- Geographical mobility is just one way to react to tax policy changes. Basically households and firms have three possibilities to react to an increase in the tax burden: 1) they may move to another jurisdiction, 2) they may reduce work input and investment, 3) they may try to avoid taxes. The extent to which geographical mobility becomes an option much depends on the two other options. Recent research on the personal income tax at the international level, tends to suggest that migration is a stronger reaction (has a higher elasticity) to tax rate changes than changing capital and labour input or dodging taxes.
- The tax side is only one underlying rationale to move across borders. The spending side of a sub-national budget, *i.e.* the provision of public services, which is finally paid for by tax revenues, also plays a role. Competition is hence multi-dimensional. Households may migrate because of the quality of public services (*e.g.* good schools, reliable public transport, high environmental quality), and in turn governments may make use of spending as a way to attract new firms (*e.g.* by investing in infrastructure or higher education). In this sense, it is often useful to think of SCGs engaged in *fiscal* competition rather than *tax* competition. Several studies conclude that SCGs, rather than to stall in pure tax competition, tend to compete on their spending policies.
- The willingness to relocate depends on the characteristics of households and firms. As regards households, mobility is different across social groups. Mobility is higher for labour market entrants, immigrants or young families, who are more likely to change both residence and workplace. Also, mobility tends to be higher for high-income earners since their potential tax savings are larger, while social transfers are more important for low-income earners. On the other hand, social changes like the emergence of two-income households might reduce mobility for certain income earners. As regards firms, younger firms and start-ups have a higher mobility and tend to mind taxation more when taking location decisions. Firms with a high proportion of human and intangible capital are more mobile than firms with important physical assets. Often household and firm mobility are strongly connected, especially for smaller firms in the service sector that depend on highly qualified labour, which means that governments have to take a holistic approach when determining corporate and personal income tax levels.
- Tax and fiscal policy is only one among many other reasons to change residence or to relocate production. The initial decision to move often depends on the more general economic constraints in a jurisdiction such as available jobs or available housing. In most countries, residential and, to a lesser extent, corporate mobility is driven by the labour or the housing market rather than the tax burden. A new job is the single most important reason for households to move. However, once people or firms decide to migrate, tax policy kicks in, and the choice of a new location might be based on tax levels, suggesting that tax-induced mobility is a “second-step consideration”.

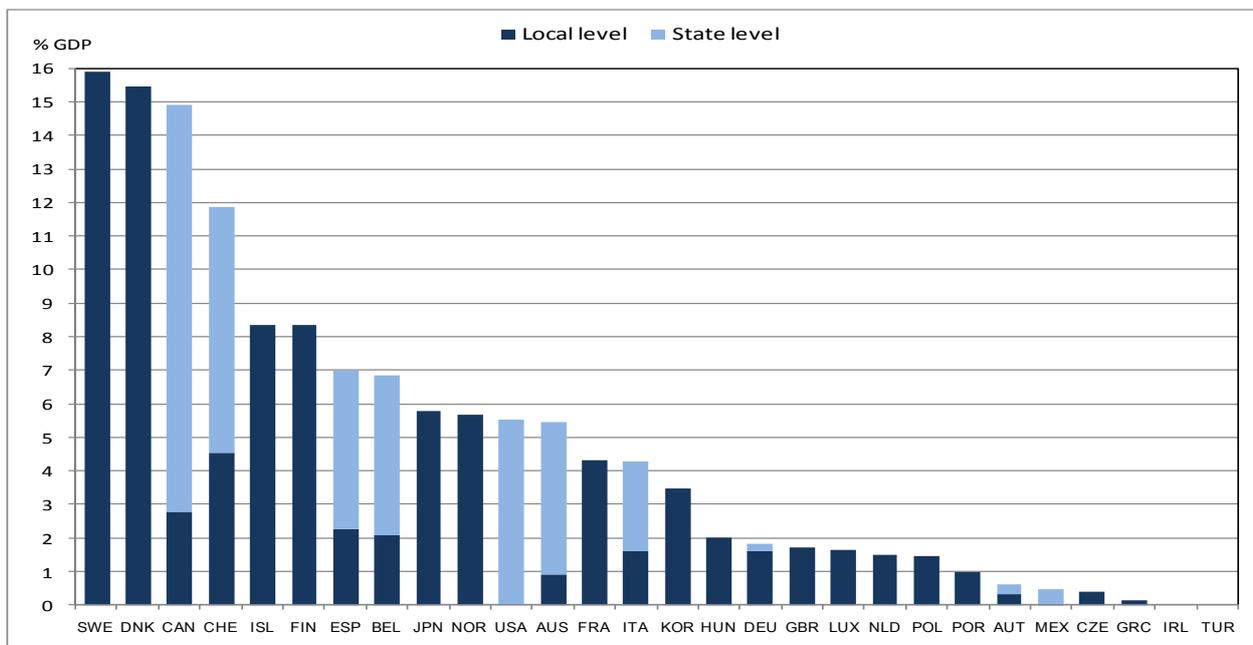
Tax base mobility is likely to have increased over the last decades, mainly because the costs of moving the tax base have fallen drastically. Economic activities rely more and more on non-physical assets such as licenses, patents and other intellectual property, which are easier to transfer to low-tax jurisdictions. Technological and financial innovations make tax base and profit shifting across SCG borders easier, as demonstrated by international experience. Lower transport costs allow for larger distances to be covered between production, sale and consumption. Better transport networks and improved infrastructure allow individuals to commute, *i.e.* to separate residence and workplace and thereby to exploit differences in tax

rates between nearby jurisdictions. Electronic commerce and lower transport cost also allow firms to leverage between production, sale and consumption of goods and services. Tax competition studies from the 1980s concluded that tax differentials had little impact on migration, while similar studies carried out after 2000 discern quite some tax-induced mobility, particularly of the young, the well-educated and the high-income earners, and of firms with a high share of intellectual property. In the wake of higher tax base mobility, sub-national governments have begun using tax policy in a much more active and competitive way today than they did two or three decades ago.

### Tax autonomy: a precondition for tax competition

Tax competition depends essentially on sub-central tax autonomy. There is no tax competition without tax autonomy. In an attempt to measure true tax that autonomy sub-central governments enjoy, the OECD has established an *institutional indicator* that measures percentage of tax revenue over which sub-central governments have full or partial policy control. This indicator is based on a uniform classification of country-specific rules and regulations on sub-central taxation (figure 1). Most sub-central governments enjoy some taxing power and hence have the potential to compete on tax policy, but such power varies considerably across countries. Taxing power is highest in “classical” federations such as Canada, Switzerland and the United States where the constitution often prevents central government from interfering with SCG tax policy. Some unitary countries – e.g. the Nordic countries – also have a long-standing tradition of local self-government and taxing prerogatives. Autonomy is larger over property taxes than over income or consumption taxes, which are often embedded in tax sharing systems with no taxing power for an individual jurisdiction. While property taxes are the most important autonomous taxes with around 33%, the more mobile personal income taxes make up around 30% of autonomous SCG tax revenue. Consumption taxes – essentially levied in Canada and the United States - make up around 24% of autonomous SCG tax revenue on average, while corporate income taxes make up around 9%.

**Figure 1. Taxing power of sub-central governments**  
SCG autonomous taxes, in per cent of GDP, 2009

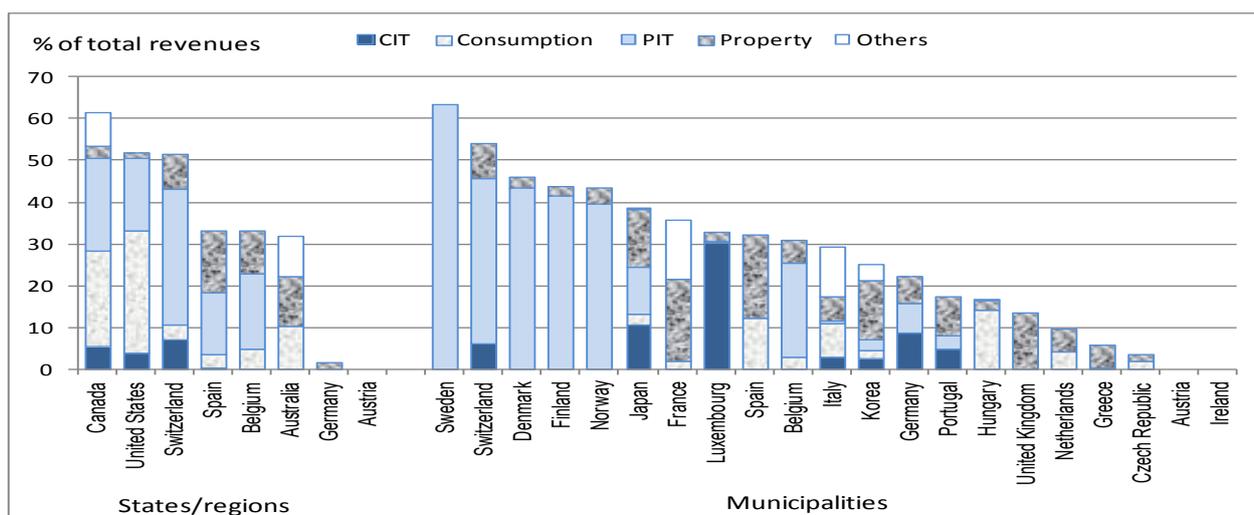


## The tax mix: main driver of SCG tax competition

The strength of tax competition depends essentially on the SCG tax mix (figure 2). Changes to a sub-national corporate income tax may induce firms to relocate headquarters and production plants, or to try to shift profits across borders. Changes to personal income taxes may induce individuals to change residence, sometimes without changing the workplace. Changes to consumption taxes may induce individuals to relocate purchase or consumption and – if the tax is origin-based –, firms to transfer production plants. Mobility varies with the tax base. A bit simplified; capital can be considered mobile at a national or international scale; labour as mobile on the scale of regional labour markets or metropolitan areas; consumption as mobile on a local scale, and immovable property can be considered as immobile, once in place – which is why property taxation triggers little tax competition. As a result, an order of tax base mobility with respect to the type of tax could be established, with capital income taxes likely to be most prone to tax base mobility, followed by the personal income and wage taxes, consumption taxes, and finally property taxes. However and as argued above, tax competition is likely to have increased for all types of taxes over the last decades. Given that tax competition varies across taxes, the tax mix itself may become a policy tool, with SCGs trying to rely on taxes where competition benefits them most or harms them least.

**Figure 2. Taxing power and the tax mix**

Autonomous taxes by tax type, in per cent of total SCG revenue, 2009



## Corporate income tax

Corporate income and capital taxes (or business taxes) affect a firm's return on capital and provides incentives to relocate to jurisdictions where profits are taxed less. There are eight (8) OECD countries with a sub-central corporate income tax (CIT). While the average sub-central CIT tax rate declined from 14% in 1987 to 9% in 2012, the share of the CIT in total sub-central tax revenue rose from 7 to 9% (OECD Tax database). Tax competition is seen as one reason for the considerable decline in statutory corporate income tax rates and – to a lesser extent – of effective average tax rates over the last 20 years, although tax base broadening appears to have overcompensated tax rate reductions. Effective mobility varies across types of firms: while firms with large physical plants face large transaction costs, firms with largely intangible assets such as intellectual property can move more easily and also have a larger potential to shift profits across borders without actually relocating their activity. Finally, corporate mobility also hinges on tax incidence. If tax increases can be easily shifted onto consumers – higher prices - or onto employees – lower wages -, the incentive to relocate is smaller.

An important and recently re-emerging issue in sub-central business taxation is how to treat firms with activities in several jurisdictions and how to “apportion” tax liabilities between them. Traditionally, apportionment formulas for business taxes rely on a mix of factors such as the number of employees, payroll, property values, sales or turnover in each jurisdiction. As a reaction to tax competition and increasing profit shifting, countries have amended sub-central apportionment formulas, relying on factors that reduce incentives for firms to relocate for tax purposes or that are more difficult to manipulate, such as sales or turnover. Since the 1990s, a large majority of US states has switched to apportionment formulas that weigh sales and turnover more heavily than other factors when assessing inter-jurisdictional tax liabilities, although this turns business taxes more into consumption taxes. The relationship between parent companies and their subsidiaries across jurisdictional borders further complicates the situation, as exemplified by subsidiaries holding intangible assets such as patents and licences. With the rising ease and scope to shift assets, profits and production, the trend towards apportionment formulas that are based on less fungible indicators (sales, turnover) is high on the political agenda.

### ***Personal income taxes***

Personal income taxes reduce a household’s net (labour) income and provide an incentive to migrate to a jurisdiction where income is taxed at a lower rate. Many OECD countries boast sub-central personal income taxes, making up more than 35 percent of SG revenue on average. As a general rule, sub-central personal income taxes appear to be less prone to tax competition than corporate business taxes, given the lower mobility of households compared with the mobility of firms. Despite increasing international labour mobility in a few segments, labour markets are still essentially regional. Inter-jurisdictional mobility and the choice of residence appear to be more affected by labour market considerations (wages, employment etc.) and the housing market (availability, prices) than by taxation, although tax considerations appear to have become more important, becoming a kind of second-stage consideration. Highly-skilled people and high-income earners have a higher propensity to migrate, and they are also more likely to migrate for tax-related reasons. As a consequence, sub-national governments tend to compete more on high-income households than on other income groups. To attract high-income earners some SCGs reduced their tax burden considerably. To illustrate, Canadian and Swiss sub-central top marginal income tax rates have come down more than the rates for lower incomes over the last two decades.

In some instances competition on the personal income tax has likely become more intense on a regional scale, especially within regional labour markets and commuting zones that are composed of a multitude of independent jurisdictions with local taxing rights. In such an institutional setting the choice of workplace and residence has direct fiscal implications for both jurisdictions. With increasing spatial extension of regional labour markets, shopping for the lowest income tax rates without the need to take workplace considerations into account, becomes more and more common. The “shield of distance” protecting local income tax revenues is disappearing. As a result, local governments become competitors for residents, while economic activity becomes increasingly concentrated in a geographical core. Suburban local governments within a metropolitan area tend to be more inclined to set lower income tax rates than the city centres, enabling them – together with restrictive zoning laws – to attract high-income residents. They might thereby create some fiscal imbalances between central cities and suburban areas. Also, personal income tax competition might lead to “income sorting”, *i.e.* to relatively homogenous SCGs with respect to income distribution within their jurisdiction. To illustrate this, income levels differ widely across Switzerland but much less within one given sub-central government (OECD 2012, Swiss Economic Survey). Apportionment formulas tend to reduce the competitive pressures in as far as property income and income from self-employment tend to be taxed at their origin rather than the residence.

### ***Consumption taxes***

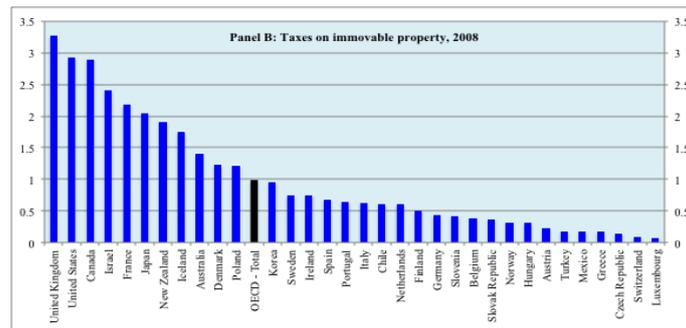
Sub-central consumption taxes comprise a bunch of value-added taxes, sales taxes or excises like cigarette or gasoline taxes. Only a few OECD countries have sub-central autonomous consumption taxes, *i.e.* taxes not embedded in tax sharing systems. Tax base mobility depends on the goods that are taxed, on how and where the goods are taxed, and on geography – cross-border shopping tends to be more of an issue for small than for large SCGs (Devereux et al, 2007). To sum up the experience on consumption tax competition: *a)* taxes on goods that are easy to transport are more prone to tax competition. For example, a sub-central cigarette tax is more prone to tax base erosion than a sub-central gasoline tax; *b)* taxes with a narrow tax base such as excises are more prone to tax competition than taxes with a broad tax base like general sales taxes or a sub-central value-added tax; and *c)* an origin-based consumption tax (*i.e.* taxes are paid where goods are produced) is more prone to tax competition than a destination based consumption tax (taxes are paid where the goods are consumed) because firms are more mobile than consumers.

Tax competition has likely intensified with the upcoming of e-commerce and the limited ability of SCGs to tax items purchased outside their jurisdiction, often with lower tax rates and leaky taxation rules on interstate trade. The US rules on interstate trade provide individuals and firms to escape consumption taxes. This hold especially true for e-commerce since US states need to provide evidence that a business is physically present – holding property, employing staff etc. - in that state before it can be taxed (the principle of “nexus”). The same holds true for the state VAT in Brazil (de Mello, 2008). As a result, several countries have enacted policies with the objective to reduce competition on consumption taxes. Integrating these taxes into tax sharing systems is the most radical policy to reduce tax competition. The tax sharing systems in Germany, or in Australia since the introduction of the Goods and Services Tax in the year 2000, leave sub-national governments with no tax base and rate setting autonomy. Other, less radical, reforms have focused on sub-central consumption taxes that are less prone to tax competition, such as a destination-based dual central/sub-central VAT or a mix of central VAT/sub-central sales taxes. The 2010 tax base harmonisation of central and sub-central value-added taxes in several Canadian provinces points in this direction. In 2013, the US Supreme Court tightened the “nexus” rules, enabling states to tax interstate e-commerce more effectively. In general, efficient SCG consumption tax systems are confined to large countries with large jurisdictions. SCGs in the European Union are prohibited from levying sales and consumption taxes by directives, with some sub-national consumption-like taxes having been reviewed.

### ***Taxes on immovable property***

Taxes on immovable property make up almost a third of sub-central taxes and hence the bulk of sub-central tax revenue, although the significance of property taxation varies strongly across countries (figure 3). More than 90 percent are recurrent taxes, with the remainder accounting for various forms of property transaction taxes. Property taxes are considered the least prone to tax competition, largely because immovable property is, well, not mobile. Given the near impossibility to move land and buildings, and the usually inelastic supply of land due to zoning restrictions, taxation levels and changes are capitalised in property prices. Any decrease – or even the expectation of a decrease - in property tax rates is likely to be reflected in raising property values. Moreover, property taxes tend to create a strong link between taxes paid and public services received, further reducing arbitrage across jurisdictions and incentives to migrate. Most studies on residential property tax interaction suggest that sub-central tax policy is mimicking the neighbours and can be traced back to voters’ preferences on tax and public service levels rather than the quest for new residents and firms. Such tax interaction is hence essentially of the “yardstick competition” type.

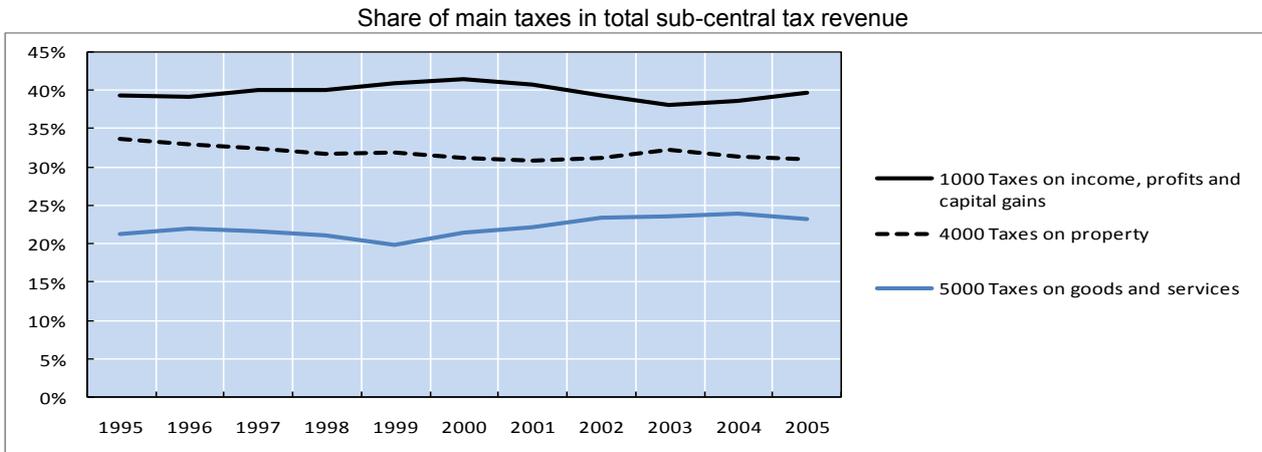
**Figure 3. Taxes on immovable property**  
In per cent of GDP, 2008



Tax competition on immovable property taxes and tax-induced migration cannot be fully excluded, however. Capitalisation may be incomplete under various circumstances, leaving room for both residents and firms to arbitrate between different locations. In addition to property tax changes, jurisdictions may alter spatial planning and zoning restrictions, further weakening the link between property values and property tax rates. If a jurisdiction has sufficient land available and imposes few restrictions on its use, overall land prices may hardly move once new land is developed, in which case property tax reductions become an effective means for attracting residents and firms. Many jurisdictions provide tax credits and other tax reliefs for business property, witnessing that the property tax is indeed a strategic instrument to attract economic activity to some extent. Moreover, while the taxation of land is unaffected by how firms develop their activities, taxation of physical capital – infrastructure, buildings etc. - depends on what firms are investing, thereby giving rise to strategic interaction between jurisdictions and firms on property tax rates and the rate of property development. Under these circumstances, the only property tax that excludes fairly well any form of tax competition is a pure tax on land values.

Despite its obvious advantages, the property tax share has been on the decline for several decades by now, currently representing around 32% of sub-central tax revenue (figure 4). Political economy may partly explain the erosion of the property tax base. Voters contest the tax, not least because tax hikes show up in lower property prices. Moreover, the tax is not linked to ability to pay, especially for liquidity-constrained households like the elderly. The rise of property prices in the years prior to the financial crisis created sustained pressure on SCGs to limit property tax hikes, as exemplified by the “tax revolts” in many US states since the 1980s. As a result, a variety of – often social policy-induced – measures such as tax caps, abatements and exemptions, are gnawing at local property tax revenue. In many OECD countries, the adaptation of the tax base, *i.e.* property/cadastral values, dates back years or even decades; which creates further distortions between different types of property and property owners. As for business property taxation, the dwindling significance of manufacturing with large physical plants – for long the backbone of property tax revenues in many jurisdictions - may also explain the declining share of business property taxes in the total local tax take.

**Figure 4. The property tax's significance is declining**



## Other factors affecting tax competition

### *Geography*

The geography of a country such as size and location of sub-central governments as well as agglomeration effects is crucial for the extent of tax competition and tax elasticities. Large jurisdictions have “market power” that allows them to keep tax rates at a higher level. The reason is that the move of one household or one firm after a change in taxation levels is felt more in a smaller than in a larger jurisdiction, which is why smaller jurisdictions – other things equal – tend to set lower tax rates. While for the international level the size effect is well recognised – small countries, usually below one million, have lower tax rates than larger ones –, empirical tests at the sub-national level are however lacking, and anecdotal evidence must replace empirical rigour. Also, jurisdictions in the geographical core have higher tax rates than peripheral sub-central governments. The so-called “agglomeration economies” – due to highly productive firms, a pool of qualified and educated labour, good infrastructure etc. – provide an asset for both residents and firms, and this asset can be taxed. In Spain, municipalities located in an agglomeration have higher tax rates and a lower tax base mobility – up to 40% less – than those located outside an agglomeration. In the United States, metropolitan areas levy local wage and income taxes that suburban or peripheral areas are unable to levy. In Switzerland, cities tend to have higher PIT rates than the surrounding suburban municipalities.

Persisting tax differences across jurisdictions can be seen as a boon to small and peripheral jurisdictions. Since these jurisdictions cannot provide the benefits of an agglomeration, their only policy tool to attract and retain firms and residents is tax policy, *i.e.* the ability to offer low taxation levels. Businesses that do not need an agglomeration to prosper or that do not require much public service input may choose to settle in the peripheral areas and enjoy low taxes. In this vein, tax autonomy is a tool for small and peripheral regions to compete against the gravitational pull of large agglomerations. Tax competition could hence be seen as an institutional barrier against spatial concentration of economic activities, although “aggressive” low-tax policy by small, peripheral and sometimes poor SCGs usually meets with great scepticism and political resistance, often led by larger SCGs with higher tax rates.

### *The spending side*

Taxes fund public services; hence the revenue and the spending side of the budget interact. Households and firms choose their location based not only on tax considerations but on the relationship between taxes paid and services rendered. When competing, SCGs may not only mind the tax side but also the spending side,

turning tax competition into more general *fiscal competition*. The evidence on this more general type of competition can be summarised as follows:

- SCGs faced with inter-jurisdictional competition invest more in immobile public service inputs that raise the productivity of private investment, such as physical infrastructure, environmental quality and education. On the other hand, they invest relatively less in social and residential services. Higher tax rates are generally met with higher public service levels, allowing households and firms to choose among different tax-service levels across jurisdictions. These findings tend to support the so-called “Tiebout” hypothesis.
- Within a country, low tax/low service level jurisdictions and high tax/high service level jurisdictions appear to co-exist over extended periods, without much fiscally-induced mobility. SCGs hardly change the “tax/public service level” group in which they are placed, given that changing it could entail fiscal imbalances over long periods. These results again point at the relevance of the “Tiebout” hypothesis, which posits that households and firms tend to group together across SCGs according to their tax-public service preferences.
- Rather than cutting general tax levels, SCGs sometimes prefer to grant tax-benefit packages to highly mobile households and firms. In some countries, specific tax allowances combined with subsidies for new firms are an important policy tool for SCGs. Low tax autonomy and tax competition intensifies competition on the spending side, *i.e.* SCGs with little tax autonomy tend to use targeted subsidies and selective spending programmes more often, and competition becomes less transparent.
- Minimum spending needs in some policy areas – *e.g.* social welfare – may put pressure on SCGs to raise tax rates. A part of tax rate differences observed across Swiss cantons appears to be due to minimal spending obligations and spillovers from adjacent jurisdictions rather than from different preferences for public service levels. Also, if SCGs have little tax autonomy, competition turns to the spending side, with jurisdictions trying to reduce welfare spending.

Inter-jurisdictional collaboration on the spending side – common in most OECD countries – may reduce tax competition. By funding services across jurisdictions – such as a common hospital or university – SCGs reduce cross-border externalities and distribute spending commitments more evenly, thereby reducing the scope for competing on tax rates. Also, and on more political economy grounds, inter-jurisdictional collaboration may make it difficult to compete on tax policy. A SCG that collaborates in various areas with its neighbours will hardly engage in a die-hard tax war with them.

### ***Fiscal equalisation***

Fiscal equalisation is a transfer of fiscal resources across SCGs to offset differences in revenue raising capacity or public service cost. Fiscal equalisation is hence aimed at fostering inter-regional equity. Equalisation can also be seen as increasing efficiency since it prevents households from moving towards high-income SCGs, simply for receiving public services at lower tax rates. Fiscal equalisation is achieved by disbursing grants inversely related to a SCG's fiscal capacity: the higher the tax raising capacity of a SCG or the lower its cost, the fewer grants it gets. Fiscal equalisation works in two ways: It reduces differences between SCG's tax raising capacity and costs. It also reduces the incentives for SCGs to lower tax rates and to attract mobile tax bases given that a part of additional revenues have to be dedicated to equalisation – or, for poorer jurisdictions, prompt a reduction in equalisation grants. While fiscal equalisation tends to reduce inter-regional differences in tax raising capacity, it preserves sub-central tax autonomy and allows jurisdictions to set tax rates according to voter's preferences for public service levels. While equalisation is effective in reducing tax competition and providing all jurisdictions with sufficient resources to fund public services, there is growing evidence that equalisation can slow down regional convergence, *i.e.* the rapprochement between poor and wealthy jurisdictions over time.

## **The impact of tax competition on fiscal outcomes**

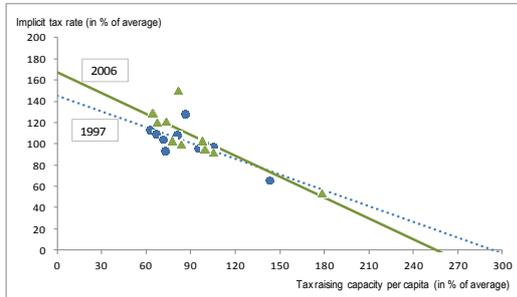
### ***Tax rates are lower in wealthier jurisdictions***

Tax rates are consistently lower in wealthier SCGs than in poor SCGs, *i.e.* there is a negative relationship between tax rates and tax raising capacity – a jurisdiction's underlying economic wealth - in most countries (Figure 5). Moreover, the relationship is likely to have become steeper, *i.e.* high/low tax rates and low/high tax raising capacity are more intimately connected, and in some countries disparities have widened. The negative relationship suggests that income groups are sorted according to taxation levels. In a dynamic perspective, individual jurisdictions evolve very unequally over time and across countries: while the ranking order is very stable in some countries – pointing at little mobility and similar economic growth across jurisdictions -, jurisdictions change their relative position very frequently in some other countries, with some initially poor SCGs having converged towards the median or even having made it above the national average in a relatively short time span. However, the relationship between tax autonomy, tax competition and other determinants of regional convergence remains yet largely uncharted territory.

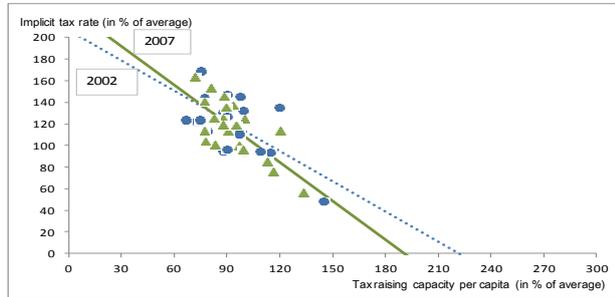
**Figure 5. Tax rates and tax raising capacity are negatively correlated**

a) State level

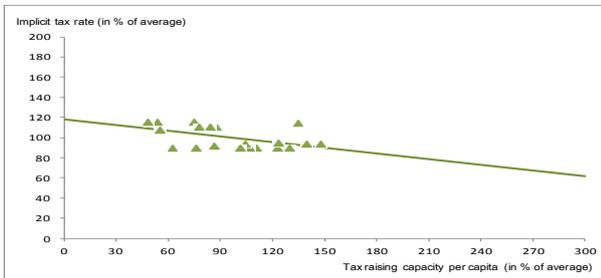
Canada



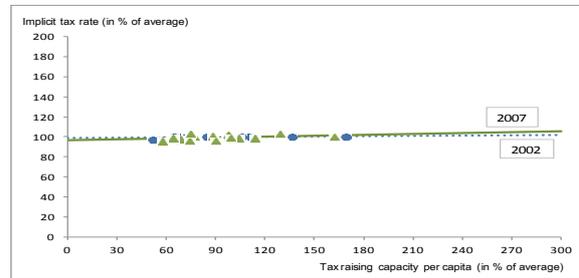
France (regions)



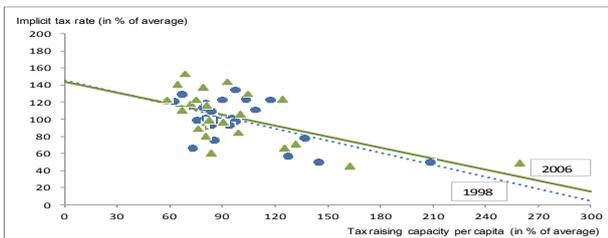
Italy



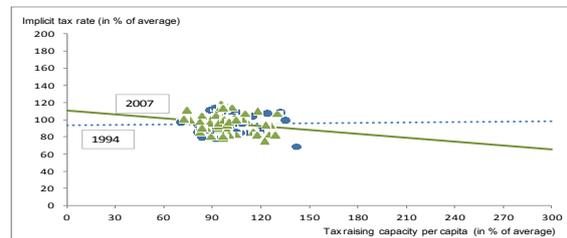
Spain



Switzerland

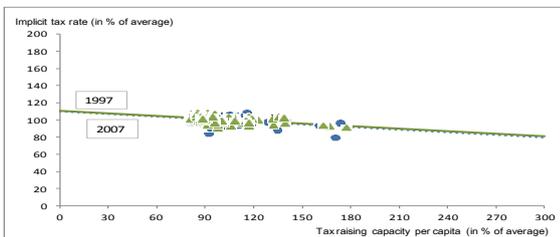


United States

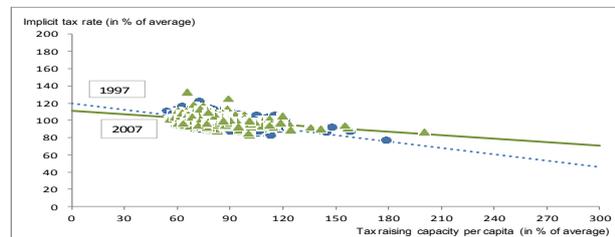


b) Local level

Denmark

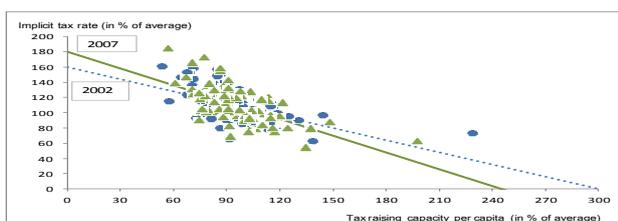


Finland

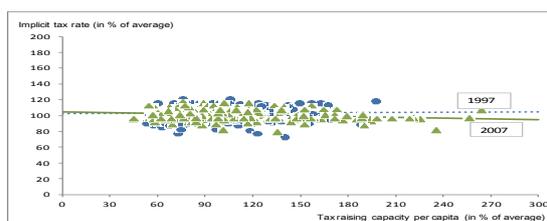


France (départements)

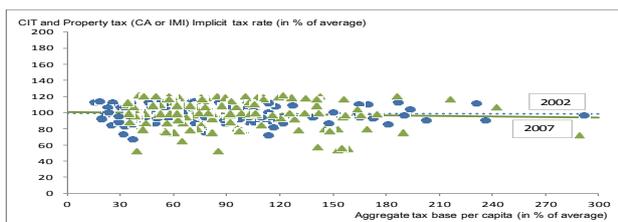
Germany (municipalities in the *Bundesland* of Nordrhein-Westfalen)



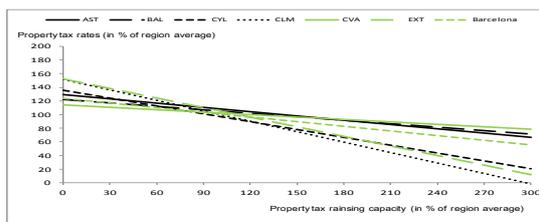
Portugal



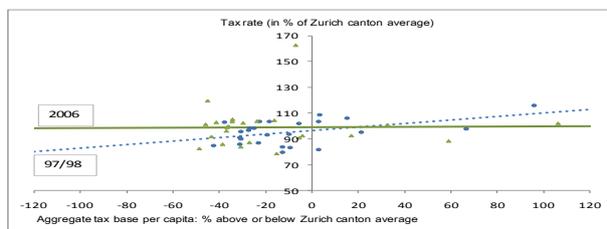
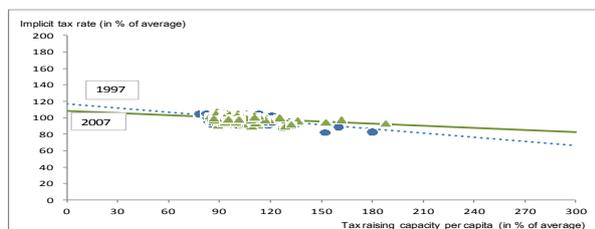
Spain (local level in selected autonomous regions)



Sweden



Switzerland (municipalities in the *canton* of Zürich)



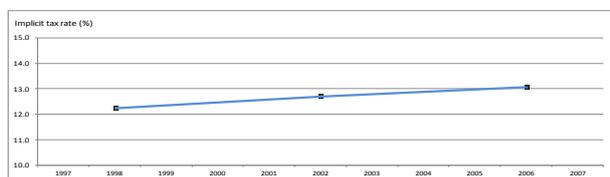
The negative relationship between wealth and tax rates, and the observation that this relationship has become more distinct over time could support the idea that weak SCGs with low tax revenues are forced to raise tax rates, and then fall victim to a vicious circle of higher taxes, outmigration, and even lower tax revenue. However, the changing ranking order in some countries also suggests that SCGs can escape such a fate. In general, as with many correlations, they do not imply causality. Reverse causality cannot be excluded. Seen from one side, poor jurisdictions are obliged to set high rates because they need to fund minimal public service levels, sometimes defined by central government. Seen from the other side, high tax SCGs are poor because they set high taxes rates and hence reduce their economic potential. The fact that the ranking order hardly changes in some countries while relative positions are traded frequently in others lends credibility to both interpretations, and so does the empirical literature. Much of the link between tax competition, sub-central government behaviour and economic and fiscal outcomes depends on the wider fiscal framework in which jurisdictions operate.

### *There seems to be no race to the bottom*

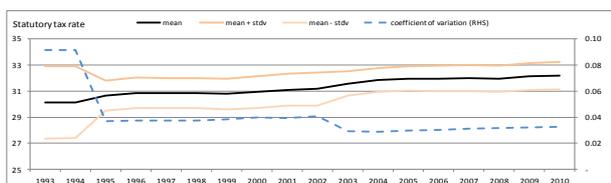
Sub-central tax rates have tended upwards rather than downwards, and they tend to converge over time, regardless of the tax type (Figure xxx). A “race to the bottom” can hardly be detected. This tends to contradict the view that tax competition results in taxation levels too low to sustain adequate public service levels. Moreover, the trend for rising tax rate differences or disparities between jurisdictions cannot be confirmed. For the few countries for which data are available, tax rates mostly tend to converge rather than to diverge. While the results do not cover all OECD countries with highly autonomous sub-central governments, they nevertheless provide a fairly broad sample of sub-central tax setting behaviour. The observed trends in tax rates do however say nothing about whether absolute tax levels today are more adequate than they were in the past.

**Figure 6. SCG statutory tax rates tend to rise and to converge (rearrange and beautify figures)**

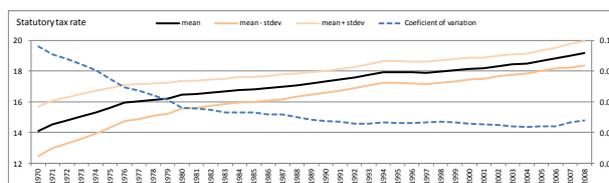
Switzerland (state level)



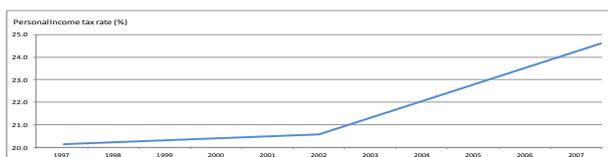
Sweden (municipal PIT)



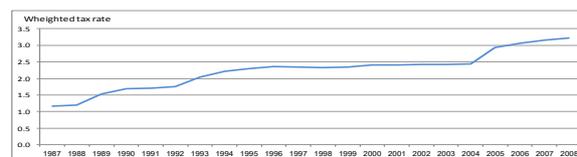
Finland (municipal PIT)



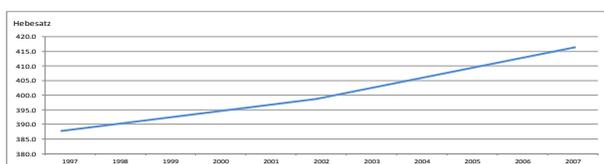
Denmark (local level)



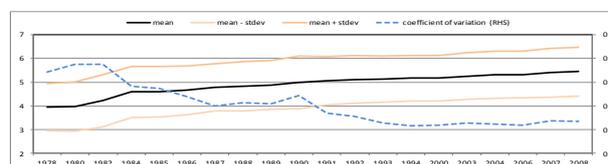
France (regions)



Germany (municipal business surcharge or "Hebesatz")



United States (general sales tax at state level)



Different factors may explain why the “race-to-the bottom” hypothesis is not confirmed. The trend towards similar packages of public services across jurisdictions, often prescribed by central government regulation, may oblige jurisdictions to set similar tax rates, and differences remain only because service levels or productivity vary marginally across jurisdictions. Also, many fiscal arrangements, particularly fiscal equalisation can actually reverse incentives and make SCGs increase rather than decrease tax rates, with a trend towards more equal taxation across SCGs (see the chapter on fiscal equalisation). Tax assignment may also play a role, once the sub-central level taps the same base as central government. As a result, vertical tax competition – which has the effect of increasing rather than decreasing tax rates – may countervail horizontal tax competition forces. Finally some regulation such as minimum tax rates may prevent individual SCGs from entering into an all-out tax reduction battle.

***Tax competition raises productivity and efficiency of the public sector***

There is a general view that more tax competition leads to a more efficient and productive public sector, both by making public providers more responsive to household’s and firms’ demands and by raising the quality and lowering the cost of publicly-funded services. Tax competition provides voters and firms with an additional lever in making the public sector accountable. Potential tax base mobility is thought to put pressure on governments to reduce government size and to use available resources efficiently. These

theories are often evasive since public sector efficiency and productivity are notoriously hard to measure. However, some tangible studies are available. At the OECD level, the decentralisation of taxing powers tends to prompt more spending on productive investment such as infrastructure and education. Also, the decentralisation of educational functions tends to improve education outcomes. Country-wise research tends to suggest that fiscal autonomy has a positive impact on the efficiency of municipal spending. Moreover, more tax autonomy and tax competition is usually associated with a smaller public sector.

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