

Fiscal Federalism and Political Decentralization

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2. Revenue assignments in the practice of fiscal decentralization¹

Jorge Martínez-Vázquez

1 INTRODUCTION

Over the past two decades there has been an unprecedented move toward decentralized governance all over the world. These changes have taken special significance in many developing and transitional countries where centralized systems were perceived to have failed to deliver improved general welfare. The promise of political, administrative and fiscal decentralization is that it can strengthen democratic representative institutions, increase the overall efficiency of the public sector and lead to improved social and economic welfare for countries that decide to adopt it.

One critical assumption in expecting these benefits is that decentralized governments will generally be more accountable and responsive to citizens' needs and preferences than centralized governments were in the past. At the same time, there is general agreement among experts in decentralization that the increased accountability associated with decentralization can only be assured when sub-national governments have an adequate level of autonomy and discretion in raising their own revenues.

Thus, if effective fiscal decentralization requires meaningful revenue autonomy at the regional and local levels of government, the question is, which taxes should be allocated at these levels? This is known in the fiscal decentralization literature as the 'tax assignment problem'.² In a chapter like this, which is strictly focused on revenue assignments, it is important to make clear that revenue assignment is just one element in the design of the entire system of government decentralization and that if revenue autonomy is to work effectively to increase accountability it has to be within the context of other well-designed institutions in a decentralized system. Decentralization involves more than what are traditionally thought of as fiscal decentralization issues (revenue assignments, the assignments of expenditure functions, transfers, and so on); and what is thought of as political decentralization, with democratically elected officials; and what is

thought of as administrative decentralization – in particular in what pertains to civil service issues. All are important in assuring good outcomes from decentralization.

A common mistake in some countries recently involved in decentralization reform has been to ignore the ‘completeness’ of decentralized systems and to have focused on some form of revenue decentralization alone (e.g., central government revenue-sharing with local governments). The consequences have been not only the failure to capture the benefits of decentralization, but also central government deficits and macroeconomic instability.³ The well-known dictum that ‘finance should follow function’ reflects the wisdom that revenue assignments should come after the assignment of expenditure responsibilities has been completed.⁴ The main goal of this chapter is to provide a policy overview and update on the problem of revenue assignments, an aspect of fiscal decentralization design with which developing countries, and also many developed countries, continue to struggle. The organization of the chapter is as follows. Section 2 reviews the perspectives that can be taken on the nature of revenue assignments. Section 3 examines what we want from revenue assignments. Section 4 reviews different forms of revenue autonomy, while Section 5 lists the fundamental principles of tax assignment. Section 6 studies the different tax instruments that are available for assignment at the sub-national level. Section 7 briefly reviews the international experience with tax assignments, with a special focus on new developments for the feasibility of sub-national VATs. Section 8 summarizes and concludes.

2 PERSPECTIVES ON REVENUE ASSIGNMENTS

The theory and practice of revenue assignments asks two fundamental questions:⁵ 1) What taxes should be assigned to different levels of government? 2) How should these arrangements be implemented? These two questions are typically examined from a normative perspective using efficiency and equity criteria, as we also do in most of this chapter. However, it can be insightful to study revenue assignments from a political economy perspective, an approach taken much less frequently. This approach can be helpful in addressing several important puzzles in the practice of revenue assignments, for which the commonly used normative criteria of equity and efficiency offer little or no help.

The first puzzle is that it is common to observe in the practice of fiscal federalism significant deviations from what would be acceptable or recommended under the normative criteria. Often in the literature these deviations are brushed aside as being the product of ‘the dead hand of history’.

However, in many cases what needs to be explained is not so much why certain revenue assignments came into being, since historical factors and circumstance can no doubt play a role, but why are wrong (inefficient, inequitable and so on) assignments so difficult to reform?⁶ Part of the answer has to be in the unequal bargaining position sub-national governments have with respect to central powers. The counter example of the weak central powers in the history of federalism in North America is a case in point. But, this is a question that still remains to be studied fully in the literature. A second puzzle in revenue assignments is not so much in the design but in the actual implementation. Very often the revenue authority provided to sub-national governments in the law goes unused, while at the same time these sub-national governments cry out for more funding from their central government. A political economy perspective can also be of help here. Revenue assignment is just one mode of financing sub-national governments and when the incentives are right, it is to be expected that these governments will prefer to be financed by transfers from the central government as opposed to asking their residents directly to contribute to the refunds. In the absence of a hard budget constraint and adequate revenue autonomy, many behave in a fiscally irresponsible manner, asking for ever-increasing national transfers, perhaps under the erroneous collective belief that residents of other sub-national governments will foot the bill. Systems where sub-national governments can count on ever-increasing revenue-sharing and other transfers from the central government become just another manifestation of the well-known problem of the 'tragedy of the commons'.

However, as we will see below in this chapter, the theory of public finance provides helpful guidelines on the assignment problem, but these guidelines are far from being deterministic and in some cases the guidelines can conflict with each other. Thus, it should not be surprising to find significant diversity in the actual implementation of revenue assignments; it is well accepted that there is no unique or 'one-size-fits-all' tax assignment. For better or worse, the history and institutions of particular countries also matter significantly. So, in practice, the choice of assignments has to do as much with politics as with economic principles. In addition, we should expect the 'preferred' tax assignments to change over time with changes in the economy, for example in response to globalization, as well as with changes in what we could call the available 'technology' of tax assignment. For example, until recently, sub-national VATs had been considered unfeasible, but this position has changed as the result of several intellectual innovations, to be discussed later in the chapter.

3 WHAT DO WE WANT FROM REVENUE ASSIGNMENTS?

The most fundamental purpose of revenue assignments is to get adequate levels of financing so that sub-national governments can implement the functions that have been assigned to them. However, this requirement does not offer much of a guide for revenue assignments because adequate financing levels can be obtained from many different tax assignments or even without them through intergovernmental transfers.

The more critical requirement for revenue assignments is to provide revenue autonomy as the means of enhancing political accountability among sub-national officials. There are several other benefits from revenue autonomy. When all financing of sub-national governments is from revenue-sharing and other forms of transfers from higher-level governments, there is a danger that sub-national governments will become spending agents of the center becoming less interested and efficient,⁷ and that imposing a hard budget constraint on sub-national governments becomes more difficult.⁸

Sub-national tax autonomy is the best way, if not the only way, to address in a permanent way the difficult problem of vertical imbalances, or mismatch of expenditure needs and revenue sources at different government levels. Adequate revenue autonomy is also a key indicator of sub-national governments' borrowing capacity and creditworthiness. There is also some evidence that more revenue autonomy at the sub-national level is associated with greater macroeconomic stability.⁹

On the other hand, greater tax autonomy can lead, depending on the geographical distribution of economic activity and tax bases, to larger horizontal fiscal disparities across sub-national governments. Richer jurisdictions can have the ability to finance their expenditure needs with little effort, while poorer communities may have to exert much greater tax effort with their residents to provide for their expenditure needs. However, these horizontal fiscal disputes can be addressed quite well through the proper design of equalization grants.

If we agree that tax autonomy is paramount, then we need to ask: how much tax autonomy is needed? Shouldn't sub-national governments be asked to finance themselves entirely from autonomous tax sources? The answer is that full own-financing by all sub-national governments is generally not feasible or even desirable. The generally accepted rule is that sub-national governments need to raise their own funds at the margin and operate with hard budget constraints, which means that revenue-sharing and grants should represent only infra-marginal funding.¹⁰

In reality we tend to observe low levels of tax autonomy. One reason, discussed in the previous sections, involves simple political economic forces.

Central governments may not want to devolve taxing powers for fear of competing with local governments for the same taxing base and at the same time sub-national governments do not want to take on the responsibility of making politically unpopular taxing decisions to meet their budget needs. Using intergovernmental transfers is seen as a much easier path for all concerned.

Insufficient revenue autonomy can also be the result of the lack of administrative capacity in some sub-national governments. When low capacity is combined with the desire to provide all sub-national governments (regardless of size and capacity) with the same autonomous taxing powers, low levels of tax autonomy can follow. This situation poses a dilemma in decentralization design. A uniform intergovernmental fiscal system under which all sub-national governments must operate has an important appeal. If all sub-national governments have the same expenditure responsibilities and revenue-raising powers, management of the system and evaluation of its success are made easier. Uniform treatment of all sub-national governments also seems generally fairer. On the other hand, a more effective route for effective decentralization may be the adoption of an asymmetric tax assignment providing more tax autonomy to larger sub-national governments with more capacity and according to transparent objective criteria and let the smaller ones 'grow into this role' over time.¹¹

Although decentralized systems in some developed countries have high levels of tax autonomy, in reality it is quite rare, especially among developing countries to find significant taxing powers devolved to sub-national governments at the onset of decentralization. Often, there is considerable reluctance from central government to let go of part of its authority and control over taxes, which in turn is justified because of the need to facilitate attainment of proper capacity at the sub-national level. However, these stumbling blocks generally linger for many years of a decentralization program, with the side effect of a culture of dependency taking hold where sub-national governments have become accustomed to relying on central transfers for their financing needs.

Regardless of actual practice, it is undeniable that a goal for revenue assignments in all countries remains granting sub-national governments a high level of tax autonomy. However, the general principle of providing sufficient tax autonomy at the margin is not easily operationalized. In particular, what is the specific meaning of 'sufficient tax autonomy at the margin'? Here are some difficulties. Expenditure needs (and their changes) are very often hard to quantify properly. In addition, tax autonomy leads to horizontal fiscal disparities giving rise to the need for equalization grants. But then the question becomes how much are central governments willing and able to equalize?

Although there are no certain answers, it is possible to provide some guidance to policy makers responsible for the design of revenue assignments. First, quite obviously there is a need to devise some sensible way to measure the expenditure needs of sub-national governments and to keep these measurements reasonably updated. Next, the golden rule for revenue assignment should be that these assignments should be sufficient to fund the expenditure needs (net of conditional grants) of the wealthiest sub-national governments. Sometimes, however, it may be advisable to break this rule somewhat and to have even the wealthiest sub-national governments partly financed by central transfers. This may be because of vertical externalities in the use of tax bases, economies of scale in the administration of some taxes, the need to maintain the integrity (harmonized nature) of some taxes, and other considerations in tax administration, which are discussed below.

4 IMPLEMENTING REVENUE ASSIGNMENTS: WHAT FORM OF TAX AUTONOMY?

If we accept that tax autonomy for sub-national governments is the requirement in revenue assignments, then we need to address two questions: 1) What type of revenue autonomy is desirable? 2) What kind of tax instruments should be used to provide this autonomy? With respect to the form of tax autonomy, four dimensions have been identified in the literature.¹² The first is which level of government has the right to choose the taxes that this given level can impose. There are good reasons to limit the ability of sub-national governments, for example to introduce internal tariffs, as done with the interstate constitutional clause in the United States. Provided that these general restrictions are to be in place, there is a choice between an open list of taxes to be determined by the sub-national governments within general limits and restrictions, or instead a closed list of allowable taxes determined at the national level from which sub-national governments can choose. There is no clear choice between these two approaches as there are advantages and disadvantages associated with each. Overall, a closed list of sub-national taxes is preferable because it avoids the introduction of nuisance taxes in some cases or higher and inefficient distortionary taxes that can easily impede local economic development and growth.¹³ But, a closed list may not be needed if, for example, all tax bases are nationally legislated and harmonized. However, this alternative may be interpreted as just another version of a closed-list choice. In the international experience, where sub-national governments are given more constitutional discretion, as in the case of some federal systems, open lists with some general

restrictions are common. Closed lists are used more frequently in unitary systems of government.

Whether an open-list or closed-list approach is adopted, an additional decision needs to be made as to whether the base of specific taxes should be used exclusively by one level of government or whether these bases can be used simultaneously by several levels of government. The latter approach has the disadvantage of introducing vertical tax externalities due to the fact that one level will not typically take into account the impact its policies may have on the tax base and revenues of the other level of government.¹⁴

Several corrective policies can be implemented to correct for this type of externality, including separating tax bases for all levels of government providing intergovernmental grants or increasing the number of sub-national governments.¹⁵ In practice, when an open-list approach is chosen it is generally the case that the cohabitation of bases is allowed. In contrast, it is often the case that a closed-list approach is used to eliminate the possibility of the cohabitation of tax bases. Sometimes the country Constitution, even in the case of some federal countries, is used to delineate clearly what taxes can be used at different levels of government (for example, this is the case in India, Pakistan or Switzerland). The exclusionary approach to the use of tax bases has led in some countries to cumbersome tax structures. For example, in India and Pakistan the federal governments can tax services but only the sub-national government can tax goods. These were choices made many years back and today they significantly complicate the ability to have functional VATs in those countries.

In practice, the choice between exclusive or shared tax bases comes down to weighing the advantages and disadvantages associated with each choice. As we just discussed, the main disadvantage of cohabitation is vertical externalities. The most important disadvantage of using the exclusive basis is that, typically, sub-national governments will be shut out of any opportunity to use significant (either in size or elastic over time) tax bases, thus drastically reducing any meaningful possibility of sub-national tax autonomy. The imposition of exclusive tax bases can also lead to cumbersome tax structures, as in the mentioned cases of India and Pakistan. All things considered, it appears that a choice of a closed list allowing for the cohabitation of tax bases by different levels of government and using intergovernmental transfers to correct for vertical externalities may be the preferred approach.

The second dimension of tax autonomy relates to which level of government can legislate over the structure of the tax bases and which level has discretion to set the tax rates. Of the two types of autonomy for structuring sub-national taxes, autonomy to define the tax base is generally less desirable than autonomy to set tax rates.¹⁶ Variations in the definition of the tax

base, either through especial exclusions from tax, deductions from the tax base and credits against the tax liabilities can more easily lead to complexity and lack of harmonization across jurisdictions.

The most important unwanted consequence of the lack of harmonization and complexity is the higher tax administration cost for all the jurisdictions involved and higher compliance costs for taxpayers who have tax obligations in several jurisdictions. On the other hand, autonomy to define the tax rate generally tends to be more desirable because it is simpler to deal with across jurisdictions for both tax administrators and taxpayers. Focusing on autonomy in a tax rate setting has the additional important advantage of being perceived to generate political accountability.

It is often also argued that tax rate setting autonomy may be preferred because it has a more direct impact on revenues and spending ability of sub-national jurisdictions, because it has a more transparent impact on locational decisions and fiscal competition: both households and businesses have an easier time figuring out the fiscal exchange or net benefits provided by different jurisdictions in their tax-public-service packages when the differences in tax burdens are expressed in terms of differences in tax rates.

The third and last dimension of revenue autonomy refers to which level of government is put in charge of administering the various taxes. This dimension of sub-national tax autonomy is often overlooked and in some cases is summarily dismissed as being of no consequence. In this latter perspective, centralized tax administration is always more efficient and the discussions about decentralizing tax administration are mostly about turf and patronage issues (who can hire workers, and so on). However, there are some potentially important issues here. First, administration by sub-national governments of their own taxes is likely to enhance accountability at the sub-national level if taxpayers are more aware of sub-national taxes under this arrangement. But second, sub-national tax administration is likely to be less cost effective because of economies of scale. Thus, a useful way to approach this decision is to identify a trade-off between more efficient administration, which generally increases with more centralized administration, and enhanced accountability at the sub-national level, which generally increases with more decentralized administration. This efficiency-accountability trade-off is likely to differ for different taxes. For example, the efficiency gains from the centralized administration of sub-national piggyback personal income taxes may dominate any increase in accountability generated by decentralized administration of those taxes. In contrast, there may be no significant efficiency gains in the centralized administration of sub-national property taxes by comparison to the losses in local accountability implied by the centralization of the administration of these taxes. The administration of sub-national taxes or even shared

taxes by the central administration can present a problem with low incentives even for shared taxes when the central administration's share in the revenues is relatively small. What this means is that when cost advantages make it desirable to centralize the administration, there will be a need for setting incentive-compatible arrangements between levels of government for the collection of taxes.¹⁷

There is one cost issue we need to discuss briefly before we leave the issue of the most desirable form of tax autonomy. It is sometimes argued that certain forms of tax revenue-sharing on a derivation basis can contribute to the revenue autonomy of sub-national governments. The more generally accepted view is that tax-sharing is not a form of revenue assignment because sub-national governments do not have a direct role in the structure and administration of the tax; in this view, revenue-sharing should be considered just another form of transfers. In the minority view, shared taxes may be considered a form of tax assignment when the shared rates are stable over a period of several years and especially when the sub-national authorities can influence the level of administration and affect the size of the tax bases. For these reasons, it is customary in many transitional countries, especially those in the former Soviet Union, to consider shared taxes as part of the own revenues of sub-national governments.¹⁸

There are some other cases that appear just to be another form of tax-sharing but in reality are special cases of tax assignment. For example, currently in Spain some important taxes have been partially ceded to regional governments. For example, 33 per cent of the personal income tax belongs to the regional governments, but this is not a usual form of revenue-sharing. The Spanish law divides the tax schedule for the personal income tax into a central government schedule and a regional government schedule. In general, these forms of revenue assignment tend to be less transparent, and even if they yield equivalent levels of tax autonomy, they are less likely to produce the same level of accountability in comparison to an arrangement with separate tax assignments to each level of government with the regional governments granted several forms of discretion over their share.¹⁹

5 WHAT KIND OF TAX INSTRUMENTS ARE BEST SUITED FOR SUB-NATIONAL GOVERNMENTS?

The principles of tax assignment or criteria that should guide the assignment of revenue sources across different government levels in a country reflect the dual role of taxes. First, taxes simply provide the means to finance the provision of public goods and services, but taxes are also used

as an instrument to achieve government policy objectives, such as the redistribution of income through progressive taxation.

The classic starting point for the principles of tax assignments is Musgrave's (1959) seminal work, where he argued that the economic objectives for government are fundamentally threefold: assuring a stable economic environment, in which the market is able to function; achieving a more equitable distribution of income; and assuring a more efficient allocation of resources in case the market fails. While, generally, the knowledge of circumstances of time and place make decentralized market forces superior to a centralized allocation of economic resources, there are a number of areas where the market fails because of cost advantages as in the case of natural monopolies, the impossibility of exclusion in consumption, as in the case of public goods, or the presence of externalities.

Musgrave's (1959) 'three roles' for government activities can be used to guide the assignment of revenue sources across different government levels. After all, different tax instruments have varying impacts with respect to the three functions of the public sector: macroeconomic stabilization, redistribution of income and resource allocation. Further characteristics can be identified that make certain taxes more appropriate for assignment at the sub-national level of government. Although there continues to be some controversy on this, the general consensus among public finance economists is to agree with Musgrave that policy decisions on economic stabilization and income distribution are best assigned to the central government,²⁰ while some of those related to allocative efficiency (how best to use the resources available to provide goods and services) may be assigned to local governments.

Beyond the guidance provided by Musgrave's governmental roles, there are some characteristics of taxes that are commonly acknowledged as desirable regardless of whether these taxes are to be assigned at the central or sub-national levels. These include:

1. revenue buoyancy, meaning that overall, revenues should change roughly in proportion to the economic base;
2. equity, meaning that good revenue sources are 'fair' or equitable in the sense of horizontal equity under which taxpayers in similar circumstances should be treated similarly and vertical equity under which taxpayers with different incomes should pay according to their 'ability to pay';
3. efficiency, meaning that the tax should have relatively low administration and compliance costs and create a minimum of distortion in the economy; and

4. political acceptance, meaning that taxes need to be sensitive to the historical and institutional framework in a country.

There are, in addition, several other principles that are desirable for taxes that are to be assigned at the sub-national level.²¹ First, the benefit principle, which relates revenue sources to the benefits being provided, should be implemented to the largest extent possible. Second, sub-national revenue sources should have a tax base that is relatively evenly distributed across jurisdictions. This helps to minimize fiscal disparities among sub-national governments and reduces the burden put on equalization grants to allow a more uniform quantity and quality of services. Third, sub-national tax sources should have immobile bases to minimize the likelihood of tax competition among jurisdictions in a 'race to the bottom'. However, not all tax competition is undesirable; a moderate tax competition gives an incentive to politicians and bureaucrats to be efficient and to provide services according to citizens' preferences in their choice of taxes. Fourth, sub-national taxes should be geographically neutral in the sense that they do not interfere with domestic or international commerce, they do not distort the location of economic activity across the national territory and they are not exported such that the taxes levied by a sub-national government are primarily borne by residents in other jurisdictions. Fifth is a requirement for administrative feasibility so that sub-national taxes can be implemented without undue costs of compliance and administration. Certain taxes may be better administered at the local level because of information advantages (e.g., property taxes), while for the same reasons local governments have a relative disadvantage in collecting other taxes (e.g., personal income tax). Sixth, sub-national grants should exhibit generally stable tax bases; revenue sources that are highly sensitive to general economic conditions (e.g., profit taxes) should be assigned to the central government, which has greater ability to deal with cyclical fluctuations in revenues through borrowing and other means. Seventh, sub-national taxes should be highly visible so that tax burdens are clearly perceived by local residents. Of course, sub-national governments are likely to think quite differently about this. Finally, sub-national tax assignments need to be stable over time. A typical problem of transitional countries has been unstable assignments, with the assignments not being established in permanent laws but instead decided in annual budgets. Ad hoc assignments decided on an annual basis may also result in a lack of uniformity, unnecessary complexity and perverse incentives toward revenue mobilization.

One thing sub-national taxes do not need to do is to attempt to redistribute income through progressive rate structures. This is not only because, as Musgrave (1959) indicated, income redistribution is a governmental

function best performed at the central level, but also because the elimination of some taxes due to their assumed regressivity may do more harm than good, as for example, in recent years in Sub-Saharan Africa. In these countries, sub-national taxes that are revenue-producing and provide a meaningful degree of autonomy have been eliminated or there have been calls for their elimination because they are regressive; that is, these taxes may require lower-income taxpayers to pay a greater percentage of their income in tax than upper-income taxpayers. However, the elimination of these revenue sources typically implies a reduction of local services, which may hurt the poor more because they do not have the possibility of using alternative private services. The elimination of those tax sources also reduces political accountability at the local level. For example, although user fees are generally regressive, residents regardless of income would be better off in a community with safe public water sources funded by user fees when compared with a community where no safe drinking water is available, and all households have to rely on more expensive private provision of potable water. Nonetheless, often the regressivity of local taxes can be mitigated by provisions for relief of hardship and other measures to protect those with the lowest incomes.

6 SELECTING TAX INSTRUMENTS FOR ASSIGNMENT AT THE SUB-NATIONAL LEVEL

There are hardly any taxes that comply with all desirable criteria listed above. A compromise across criteria is generally needed. But, even though we cannot select one single best assignment, it is clear that the criteria allow us to select among better and worse tax assignments.

In practice naturally, there are disagreements on what should be in the minimum list of requirements for tax assignment at the sub-national level. One such minimum list would include revenue autonomy at the *margin*, stable assignments over time, sufficient revenues for the wealthiest sub-national government units and for taxes to be based as much as possible on the benefit principle and on less mobile tax bases. But it must be clear that the minimum list using the benefit principle where feasible is the single most important. As Bird (2000) and others have argued, sub-national governments are mostly prescribed to engage in activities ensuring a more efficient allocation of public resources, and therefore they should be assigned revenue sources for which it is easier to establish a link with the benefits received by residents from local government spending. The most obvious example of a revenue source satisfying this benefit principle is charging for specific services provided by local governments (for example, the cost of

issuing driver's licenses) and for goods and services provided by public enterprises (utility charges, museum admission and so on). Besides generating revenue for local governments, user charges also provide information on demand to public sector officials.

However, often it is not feasible to use charges for a variety of services provided by sub-national governments. In these cases it may be feasible to use 'benefit taxes', or compulsory contributions to local governments that are nonetheless related in some manner to benefits received by the taxpayer. For example, the size or value of a residential property may be seen as relating to an individual taxpayer's benefits received from improvements on the street where the property is located. Relating taxes to the benefits of public spending has the major advantage of helping increase the accountability of sub-national governments to their own constituencies. The effectiveness of benefit taxes in increasing political accountability and fiscal responsibility is enhanced with the mobility of taxpayers across jurisdictions.

6.1 Better Choices of Sub-national Taxes

Although it is not possible to come up with an exact list of taxes that must be assigned to sub-national governments, it is quite possible to draft a list of taxes that would make good choices for this task:

6.1.1 Fees and user charges

The most straightforward way to raise revenue in accordance with the benefit principle is by charging user fees to cover the cost of providing specific local government services. As remarked above, besides generating revenue for local governments, user charges are able to function as a pricing mechanism, thereby ensuring that locally provided goods are only used by local residents as long as their benefits exceed the cost to the user. One feature of this source of sub-national revenues is that revenues raised from user fees and other non-tax revenue sources are generally not available for general-purpose funding of local services or infrastructure.

One general argument that is sometimes made against the reliance on user fees at the local government level is that user fees are potentially regressive. However, as we have already commented, one needs to be careful not to overstate the importance of the redistributive role of sub-national governments. In some sense, considering the regressivity of user charges does not make much more sense than considering, for example, the regressivity of food expenses. As noted earlier, equity and distributional issues are much better addressed at other levels in the overall fiscal system of the country.

To the extent that the main purpose of 'real' licenses and user fees is to recover the administrative costs of issuing the licenses or the cost of providing the public services, it is important to price the service right. Requiring sub-national governments to set the fee levels below the actual cost of provision imposes an unfunded mandate and it can easily lead to poor provision of services.

While user fees provide important efficiency benefits, it is important to balance the cost of collecting and administering user fees with the amount of revenues collected; certain types of user fees involving many small transactions may be too costly to collect. It can make good sense to bundle the collection of a variety of fees into a single payment. For example, it is possible to collect refuse collection fees or street lighting fees as a surcharge on property taxes.

6.1.2 Property taxes and betterment levies

There is ample consensus in the public finance literature identifying the property tax as one of the best mainstays at the sub-national level. Something else makes the property tax particular in the revenue assignments problem. Almost without exception, revenues from the property tax are assigned to local governments as opposed to intermediate-level or regional governments. The degree of discretion given to local governments to manipulate the tax may vary but the thinking that this tax belongs to local governments seems well entrenched.²²

Several features make property taxes especially attractive as a sub-national tax. Most important, the property tax is a visible tax and thus conducive to political accountability. In addition, the tax, for the most part, falls on an unmovable base. The more homogeneous both the property and population, the closer the property tax comes to being a benefit tax.²³ However, depending on how the property tax is structured, it can move away from the benefit link. For example, this may be the case if the tax burden falls on just a few classes of property, such as non-residential property.

Other advantages of property taxes are their revenue potential and stability. Note also that from a vertical equity viewpoint, the property tax can be progressive in developing countries, and therefore can increase the overall vertical equity of the tax system, although in practice it can be made regressive by exemption policies that target wealthier households.²⁴ The property tax also has the desirable feature that much of the tax burden is quite likely borne by residents in the jurisdiction where the services financed by property taxes are provided. The property tax also has the advantage that it imposes a relatively low compliance cost on taxpayers because taxpayer intervention in terms of the determination of tax

liability is minimal, except in the case of appeals. Typically the property tax poses no significant problem of tax base competition with the central government, basically because this is not a tax that central governments tend to covet.²⁵ Finally, a part of property tax might be thought of as a charge for land that can lead to significant improvements in the quality of land use.

The main drawback of the property tax is that, perhaps due to its visibility it is likely to be unpopular with taxpayers and, as a result, also with public officials. Other drawbacks include the fact that it can lead to liquidity problems for homeowners with valuable real estate assets but low incomes.²⁶ In addition, the property tax administration requires costly revaluation of property on a regular basis, and it is difficult to enforce, because the confiscation of property may be considered too extreme because of the political fallout. Finally, the property tax lacks revenue elasticity, meaning that the tax typically exhibits little automatic revenue growth.

In practice there are several forms of the property tax. For example, some countries separate the taxation of land and improvements, or structures, and a few others tax only land values or rents. Although a tax on land tends to be more efficient, it also has less revenue potential and it is generally more difficult to administer properly, for example, in terms of valuation or assessment of properties. There is another type of property tax in the form of 'betterment levies' or lump-sum payments exacted upfront by sub-national governments from land and housing developers and also from homeowners as a charge for public service improvements, such as road paving, drain infrastructure, sidewalks, street lights and so on, which all have a visible benefit on property values. Betterment levies can be useful in providing sub-national governments with liquidity to invest in needed infrastructure; they also have the advantage of being more directly contractual than property taxes and therefore reinforcing the benefit principle feature in sub-national government financing.

There are different modalities for the administration of the tax, including centralized or central oversight over cadastres and re-evaluation processes, which can make this type of tax even feasible in developing countries. Note that tax autonomy is largely preserved as long as sub-national authorities are given some discretion over rate setting.²⁷

6.1.3 Vehicle and transportation taxes

These are generally attractive sub-national taxes because of the strong link between the ownership of vehicles on the one hand, and the use of local services and infrastructure (particularly roads) on the other. In addition, sub-national taxes and charges on vehicles can counteract the negative

externalities associated with local traffic congestion and air pollution in the local area. This is also a tax that tends to have elastic revenues. It is perhaps for this reason that the central governments in some developing countries, wrongly, tend to assign these taxes to themselves. There are, of course, some transportation taxes such as in the case of air travel, which are rightly allocated at the central level, since air traffic control and other similar services should be centrally provided.

6.1.4 Natural resource taxes (when resources are evenly distributed)

There is at least a partial link between taxes on natural resource extraction and the benefit principle at the local level. Natural resource taxes can be justified at the local level to the extent that extraction activities use local infrastructure (e.g., roads needed to transport heavy machinery and mined resources), place stress on other local infrastructure (temporary worker camps, hospital facilities required to treat injuries incurred by those working in this industry and so on), and – depending on the type of extraction – may pollute the environment or cause other negative externalities, increasing health costs of local residents. There has been growing interest in the fiscal decentralization literature in the pros and cons of the assignment of natural resource revenues to sub-national governments.²⁸ Notwithstanding the arguments for some form of local taxation of natural resources, there are two major arguments against it. First, in the case of geographically concentrated natural resources, local taxation could cause extensive horizontal fiscal imbalances (e.g., the recent cases of Indonesia, Nigeria and Russia). These fiscal disparities can lead to inefficient population migration and location of business. Second, given the high volatility of world commodity prices, local taxation of natural resources would not constitute a stable source of revenue.

Therefore, some balance must be reached, especially in the case of the uneven geographical distribution of resources, between first, centralized taxation of natural resources to address disparities and avoid or correct for negative economic externalities, and second, sharing some of the revenues with sub-national governments to compensate for the environmental damage of the extraction process and so on.

6.1.5 Local business taxes

Certain forms of business taxes or business license fees are justified at the sub-national level as an indirect but administratively easier way to tax income of business owners (especially non-wage incomes), and as a benefit tax for the services and infrastructure provided by sub-national governments.

Where it is not feasible to recoup costs of local government services through user charges, some form of broad-based levy on general business

activity is warranted. However, to avoid economic distortions, the broad-based levy should be neutral to the factor mix, applying equally to labor (payroll) and capital (assets) used by businesses. Such a tax, which is sometimes called a business value tax (BVT) is discussed by Bird (2003). The base of the BVT would resemble that of the VAT although the two taxes function quite differently. In contrast to the destination-based VAT, the BVT would be origin-based, therefore taxing exports (not imports) because the benefits from sub-national governments' services accrue at the place of production (not consumption). In addition, while the typical VAT is calculated by the subtraction method on transactions (gross receipts minus the cost of intermediate goods and services), a BVT would be calculated by adding payroll, interest, rents and net profits on the basis of annual accounts.

The closest example of a BVT in practice was Italy's regional business tax (known as the IRAP) prior to the elimination of payroll from the tax base in 2003.²⁹ A potential disadvantage of a BVT is that it requires good levels of accounting and record-keeping and quite advanced tax administration capacity. These requirements make it less of an option for taxing small business and for use in countries where tax administration is not sophisticated. Another feature that may help explain its lack of popularity is its overlap in terms of the tax base with value-added taxes, and therefore the hard political sell for this tax. An alternative to business taxation at the sub-national level is to use charges that may vary by type, size or location of the business. For example, Kenya has used this form of a tax, called the single business permit, since 1999.

6.1.6 Excise taxes (subject to area size and cross-border trade and smuggling limitations)

Subject to the area size, cross-border trade and smuggling limitations, excise taxes have potential as piggyback taxes or special taxes at the sub-national level. Excises tend to be more politically acceptable, can be easily administered in coordination with national wholesalers as withholding agents and allow for rates differentiated by region. For example, some OECD countries allow sub-national government surcharges on excises.³⁰ Moreover, the benefit principle accords well with the assignment of (destination-based) excises on alcohol and tobacco to the sub-national level (to the extent that the latter is responsible for health care) and on vehicles and fuel (to the extent of sub-national government involvement in road construction and maintenance). The ability to charge differential rates across sub-national jurisdictions is, of course, limited by the possibility of cross-border trade and smuggling. The extent to which excise piggyback surtaxes can be used at the local level depends also on the technology of product distribution and points of sales.

An interesting aspect of excise taxation at the sub-national level is the taxation of public utility services. There is significant revenue potential in some of these services, as in the case of electricity and phone services. Besides revenue potential and administrative ease, sub-national excises on public utility services are attractive because of the benefit principle. For example, excises on electric consumption and phone services should be in most cases good proxies for the demand of local public services by both households and enterprises. Compared with other commodities, taxation of public utilities would be associated with relatively low distortions, as most utilities show relatively low price-elasticity of demand. Also, the demand for public utilities has been shown to be income elastic, which brings two additional benefits to this form of sub-national taxes: progressivity and revenue buoyancy (Linn, 1983).

6.1.7 Flat-rate piggyback income taxes

As we have discussed above, progressive income taxes are best assigned at the central government level, because income redistribution should be an objective pursued by the central governments because of the mobility of taxpayers and so on. Another reason for this assignment is that progressive income taxes tend to act as automatic economic stabilizers and macroeconomic stabilization should primarily be a function of the central government. Nevertheless, there are several possibilities for the taxation of personal income by sub-national governments. The most commonly used form of sub-national income taxation internationally is a flat-rate income tax as a surtax or 'piggyback' tax on the central government personal income tax. This type of tax is almost always collected by the central government administration and shared on a derivation basis.³¹ To enhance revenue autonomy, local governments may be allowed discretion in setting the flat rate between minimum and maximum rates, which are centrally legislated.³² A flat-rate local piggyback income tax easily satisfies the benefit principle and, being quite visible, it promotes political responsibility and accountability at the sub-national level. This is also an elastic tax with revenues increasing commensurate with income, so that as the demand for local services increases with income, so do tax revenues.

6.2 Worse Choices for Sub-national Taxes

As we have discussed, the principles of tax assignment do not provide a deterministic list of taxes, but those principles are helpful in identifying more good choices, and also likely poor choices. First, progressive personal income taxes are not a good choice for tax assignment at the sub-national level; ultimately, it would seem to make little sense to have income redistribution only

within the boundaries of sub-national jurisdictions, since richer taxpayers tend to live in richer jurisdictions. In addition, the mobility of high-income taxpayers and businesses could easily lead to distortion in the location of economic activity.

Another tax that is ill-equipped for application at the sub-national level is the corporate income tax or profit tax. This is a tax more appropriately assigned to the central government level because of its link to macroeconomic stabilization and, to the extent that corporations are owned by wealthy individuals, this tax also affects income redistribution. Perhaps even more relevant, is that even when levied by the central government, the corporate income tax hardly meets sound principles. There are no reasons to believe that incorporated businesses benefit more from public services than unincorporated ones or that the benefits received vary with profits. The main justification for a corporate income tax is to prevent avoidance of individual income tax through incorporation and to withhold tax on foreign shareholders, who otherwise only may have to pay tax in their countries of residence. Clearly, it is administratively easier to tax profits at source rather than as individual income after distribution among shareholders.

At a more practical level, the assignment of profit taxes at the central level is justified by the difficulty of apportioning well the profits of enterprises across sub-national jurisdictions where they operate. Some countries that have corporate income taxes at the sub-national level attempt to apportion the nationwide profits of enterprises among sub-national jurisdictions using a formula. These apportionment formulas generally use a weighted index of combinations of three factors: payroll, assets and sales. But, despite these formulas, the allocation of profits across jurisdictions tends to be quite arbitrary because of the imprecise link between the location of those factors and the generation of profits. In countries where no formula is used, the typical norm is to share the revenues between the central and sub-national governments on a derivation basis, that is, according to the jurisdiction where the taxes have been actually collected. This practice leads to an arbitrary distribution of revenues, since the shared revenues stay in the very few jurisdictions where companies are registered or have their headquarters. This means that the capital of the country and a few other large cities where enterprises have their headquarters tend to benefit unfairly vis-à-vis jurisdictions where the enterprises have factories and other forms of economic activity that use local resources and public services.

Another tax that traditionally has been thought a poor choice for assignment to the sub-national level is the VAT. The main difficulty lies in the fact that the debiting and crediting of the VAT is likely to take place in different sub-national jurisdictions, which generally will imply an arbitrary apportionment of VAT revenues across those jurisdictions.³³ This also makes it

problematic to share VAT revenues with sub-national governments on a derivation basis. However, it is perfectly feasible to share VAT revenues with sub-national units using a formula. For example, the VAT can be shared on the basis of population (as in Germany and Belarus), or on the basis of the regional shares in aggregate consumption (as in Canada's Maritime Provinces, Japan or Spain).³⁴ But, of course, this form of revenue-sharing does little to enhance revenue autonomy or accountability among sub-national governments. Nevertheless, in more recent years, there have been a series of developments in practice and at theoretical levels that clearly demonstrate that sub-national VATs on a destination basis using the invoice-credit method are quite feasible. We review those developments next.

6.3 The Feasibility of Sub-national VATs

Broad-based indirect taxes are attractive to sub-national governments because of their revenue potential. Although retail final sales taxes are still used in some countries, for example at the state level in the United States, the current consensus is that a destination-based VAT is preferable to a retail sales tax as a sub-national tax option especially when a national VAT already exists (which, of course, is not the case in the United States).³⁵

However, the introduction of sub-national VATs is among the most complex issues in the theory and practice of revenue assignments. Basically, only three large federal countries have introduced sub-national VATs: Brazil, Canada and India. The mixed experience from these countries has served for many years as an example of the difficulties facing any other country contemplating the introduction of a sub-national VAT. The best experience so far is, no doubt, the Quebec Sales Tax (QST). This tax is structured as a deferred-payment plus destination-based system and in combination with Canada's federal GST (goods and services tax) constitutes a truly operational 'dual VAT'.³⁶ On the other hand, Brazil's state-level VAT, known by its initials in Portuguese as ICMS (*Imposto Sobre Circulação de Mercadorias e Serviços*), is an origin-based consumption tax that falls on manufacturing goods and some services with different rates for different goods in intra-state transactions and either of two rates used for inter-state transactions (a lower rate for exports to less-developed states). The tax on interstate sales is fully creditable at the expense of the importing state. The ICMS is a complex system that so far has not worked well.³⁷ The introduction of a functional VAT in India has been complicated by constitutional provisions regarding the taxation of goods and services at the federal and state levels.³⁸

What type of VAT would be desirable at the sub-national level? There is now wide consensus that the preferable form of a sub-national VAT is a

destination-based (as opposed to an origin-based) tax, not only because it relates more directly to the benefit principle, but because it is less likely to distort the location of economic activity and because it does not lend itself to undesirable practices, such as transfer pricing manipulations.³⁹ Using the destination principle has two important implications (McLure, 2006). First, the sub-national jurisdiction of destination gets the revenues. Second, the same final rate of tax applies to consumption of a given commodity in the sub-national jurisdiction of destination regardless of where it is produced. Other desirable features of a sub-national VAT besides being destination-based include some discretion to set rates, similar compliance requirements for intra- and inter-jurisdiction trades, and proper collection incentives.

There are several approaches to implementing a destination-based sub-national VAT. The most immediate one, as practiced by national governments in the case of international trade, is border tax adjustments. However, it is clear that this approach is neither feasible nor desirable for internal trade among sub-national jurisdictions. The second approach is a clearing-house arrangement. Here all sales (intra- and inter-jurisdiction) are treated the same and registered importers in other jurisdictions can reclaim a credit from their own authorities for taxed inputs; periodically all jurisdictions settle up and clear net claims. The clearing-house arrangement can be cumbersome but it is actually practiced in Israel and the West Bank and Gaza Strip. The main problem with the clearing-house arrangement is that there are no incentives within the system to verify that the claims for refunds are legitimate. The third is the zero-rating/deferred payment approach; here the sales to registered taxpayers in other states are zero-rated and the tax on imports is deferred until the importer pays tax but, at the same time, he also gets the credit for the tax on imports. This is the basic mechanism used under the QST and it is also the 'interim' solution that has been in use in the European Union for cross-member country transactions.

The essence of the Quebec dual VAT (the provincial QST and the federal GST) is to handle interstate sales on a zero-rated, deferred payment basis (Bird and Gendron, 1998). This dual VAT is administered by Quebec's provincial authorities. There is, however, an important role played by the federal authorities. This tax requires a well-functioning national VAT with joint audits and a high level of information exchange to work well. For example, even though Quebec cannot monitor a zero-rated export to another province, the normal process of the federal audit serves as a check that Quebec VAT has not been evaded. The institutional set-up provides incentives for enforcement of the provincial and federal taxes; in particular, the QST is charged on a price inclusive of the federal GST basis.

The administrative problem of imposing a destination-based sub-national VAT has attracted several recent contributions in the literature

seeking creative solutions to sub-national VATs. The first of these contributions is known as the 'compensating VAT' or CVAT, first proposed by Varsano (1995, 1999) for Brazil and expanded by McLure (2000b). The CVAT preserves the zero rating of sales between the sub-national jurisdictions but maintains the VAT chain by instead charging a compensating VAT on all cross-border sales. This compensating VAT is fully creditable to the importer, so that no jurisdiction would collect any net revenue from the tax on interstate sales to registered traders. In addition, the administration of the CVAT is to be combined into the federal VAT; that is, the CVAT would be paid to the federal government and then the importer would credit it against federal VAT due – or get a refund. A significant advantage of the CVAT is that it requires a fairly low level of administrative capacity. However, it has the disadvantage of the asymmetric treatment given to the in-state and out-of-state buyers.

The second contribution to the implementation of a destination-based sub-national VAT is the 'viable integrated VAT' or VIVAT, initially proposed by Keen and Smith (1996) as a solution for the European Union. The VIVAT charges a VAT tax at a common rate on all transactions between all registered traders, inside of and outside of the jurisdiction, while sales to final consumers and non-registered traders are taxed at the rate of the jurisdiction where the seller is located. A conspicuous advantage of the VIVAT is that it does not require the existence of a federal VAT. However, it requires the asymmetric treatment of registered traders and final consumers.

In summary, there are currently three viable options for a destination-based sub-national VAT. While the dual VAT has been working in Quebec, Canada, the CVAT and the VIVAT options have yet to be implemented. Each of the three options presents advantages and disadvantages in terms of generally desirable traits of a destination-based sub-national VAT. It is desirable, for example, that sellers do not need to identify the destination jurisdiction or the type of buyer in order to charge the tax. Or it is also desirable that the tax can be implemented without the need for a central agency administering the process. When these and other desirable properties are tallied, none of the options for a sub-national VAT is inherently better than the others. The choice of the sub-national VAT will need to be made according to existing constraints and most desirable objectives.⁴⁰

7 THE INTERNATIONAL EXPERIENCE WITH TAX ASSIGNMENTS

The international experience with revenue assignments shows great diversity of approaches and, therefore, is not easily summarized. A useful way

to view this international experience is along two main dimensions: first, the form of legislation and effective use of tax autonomy; and second, the level of decentralization in tax administration arrangements. According to these dimensions, we can identify three main types of tax assignment models in the world practice.

The first is what we could call the 'tax autonomy' model, prevalent in Canada and the United States. These countries exhibit revenue assignments with a great deal of tax autonomy and independent legislation, and decentralized tax administrations at the sub-national levels. In these two countries, the same revenue bases are generally taxed by different levels of government. This international model does not present harmonized tax bases across sub-national jurisdictions, which results in relatively higher taxpayer compliance costs and administration costs.

The second model we could call the 'tax sharing/transfer' model. This is prevalent in a large number of countries including Australia, Germany, Russia and Spain. This model of revenue assignment is characterized by low tax autonomy and heavier reliance on tax-sharing and transfers. This would also offer a variety of tax administration arrangements, mostly centralized (Australia, Russia, Spain) but also exceptionally decentralized (Germany).

The third model is the 'piggyback taxes' model, and it is prevalent in the Scandinavian and other Northern and Central European countries. Here a significant degree of tax autonomy is achieved through surcharges or piggyback taxes on central taxes, while this autonomy comes mostly in the form of determining a flat surcharge rate. In this model the administration of taxes at all levels remains highly centralized.

8 SUMMARY AND CONCLUSIONS

Effective fiscal decentralization requires meaningful levels of revenue autonomy at the regional and local levels of government. These conference notes review the theory and practice of tax assignments, seeking to answer the question of which taxes are better allocated to sub-national jurisdictions.

Besides adequate revenues to fund the public expenditure needs of sub-national governments, what we most want from revenue assignments is accountability and political and fiscal responsibility for sub-national government officials. This is fundamentally achieved by granting sub-national governments a significant level of tax autonomy. Achieving a good level of tax autonomy has many other benefits including the imposition of a hard budget constraint on sub-national governments.

However, the full financing of sub-national governments from autonomous tax sources is generally not feasible. The commonly accepted compromise is that sub-national governments need to raise their own funds at the margin and operate with hard budget constraints; this means that revenue-sharing and grants should represent only infra-marginal funding. Operationally, this translates into the golden rule for revenue assignment: own revenue sources should fund the expenditure needs (net of conditional grants) of the wealthiest sub-national governments, and the revenue needs of the relatively poorer sub-national government should be supplemented with equalization grants.

However, not all forms of tax autonomy are equally desirable. All things considered, the best way to provide sub-national governments with tax autonomy is to have a closed list of taxes for which sub-national governments can set tax rates within some minimum and maximum values that are nationally legislated. Good choices for sub-national governments include maximum use of fees and charges for excludable services under the benefit principle, plus a list of well-suited taxes such as the property tax, vehicle taxes and piggyback personal income taxes. Recent advances also make it possible to introduce a sub-national VAT in either its dual Quebec-style form, or under the CVAT or VIVAT forms.

The international experience clearly shows that there are no unique well-defined formulas for revenue assignments. While there is ample revenue autonomy in North America and countries in Scandinavia and in Central Europe, many other decentralized countries around the world rely very heavily on revenue-sharing and transfers to finance sub-national governments.

This latter situation continues to be puzzling. More research is needed to understand the political economy behind some of the anomalies in the choices of revenue assignments. In particular, it is important to better understand why the wrong revenue assignments have proved so difficult to change in a significant number of countries and also why the little revenue authority provided to sub-national governments quite often goes unused even though these governments might, at the same time, demand more funding. Future research should be more heavily focused on the political economy of revenue assignments.

NOTES

1. This chapter is based on the notes presented at the 4th Symposium on Fiscal Federalism organized by IEB, at the University of Barcelona in May 2006. Some parts of this chapter draw on joint work with Andrey Timofeev and I am grateful for his input. I would like to express my gratitude to Núria Bosch and José Mariá Durán for the invitation to the IEB, 2006 conference.

2. See, for example, Martínez-Vázquez, McLure and Vaillancourt (2006).
3. See Burki, Perry and Dillinger (1999) for the experience of some Latin American countries.
4. See Bahl and Linn (1992). Prior knowledge of expenditure assignments can also help to better design revenue assignments because different services may call for different forms of financing. Some services (public utilities, bus transportation) can be financed by user charges while other services characterized by significant externalities, should be financed from region-wide taxes and intergovernmental transfers.
5. See McLure (1998) and Bird (2000).
6. See McLure (2001) for the role of history in revenue assignments.
7. A number of recent studies (e.g., Ter-Minassian, 1997; Ebel and Yilmaz, 2002) suggest that outcomes of decentralized spending depend on the form of financing used for these expenditures, with a crucial aspect being the extent of control that local governments can exercise over the sources of their revenue.
8. A hard budget constraint implies that those local governments given autonomy will be asked to balance their budgets without recourse to any end-of-year assistance from the central government and a clear understanding that there will be 'no bailout' at year-end or in the case of debt default. See Rodden, Eskel and Litvack (2003).
9. Traditionally it has been thought that greater sub-national revenue autonomy may compromise the ability of the center to implement stabilization policies; in reality, the reverse seems to happen. It could be that greater sub-national revenue autonomy leads to more conservative budget policies and lower deficits at all levels of government. See Martínez-Vázquez and McNab (2006).
10. This argument is made very clearly in McLure (1998).
11. See Bird and Ebel (2007) on the possibilities and problems with asymmetric fiscal federalism.
12. See Musgrave (1983); Boadway (1997); Norregard (1997); McLure (1998 and 2000a) and Bird (2000).
13. The international experience shows that providing sub-national governments with freedom to select their own taxes (the open-list approach) can easily backfire when sub-national governments introduce highly inefficient (distortionary) forms of taxation. A recent example is provided by Indonesia, which adopted an open-list approach in the 2001 decentralization reform. See Alm, Martínez-Vázquez and Indrawati (2004).
14. See Dahlby and Wilson (1996, 2003); Keen (1998) and Boadway, Marchand and Vigneault (1998).
15. See, for example, Flowers (1988); Dahlby (1996); Boadway et al. (1998) and Keen (1998).
16. The ability to change either base or rate opens up the possibility of fiscal competition among sub-national governments (Wilson, 1999). Inter-jurisdictional fiscal competition can have both good aspects, such as offering choices to taxpayers and keeping public officials more accountable, and also bad aspects, such as a 'run to the bottom' type of behavior actually taking place in countries with a significant degree of sub-national tax autonomy. In addition, the ability to change tax base or rate can give rise to 'horizontal' fiscal externalities, whereby the policies of one jurisdiction (for example, raising tax rates) can have an effect on the tax bases of other jurisdictions (raising their tax bases related to mobile taxpayers). Intergovernmental grants and other policies can be implemented by the central government to correct horizontal fiscal externalities. See, for example, Arnott and Grieson (1981); Gordon (1983) and Wildasin (1983, 1989).
17. See Martínez-Vázquez and Timofeev (2005).
18. See, for example, Martínez-Vázquez and Boex (2001) and Martínez-Vázquez, Timofeev and Boex (2006).
19. The regional governments may keep the centrally designed tax schedule, in which case they will receive 33 per cent of the total tax take, or they may increase or reduce the rates but with the requirement that the rate schedule be a progressive tax with the same number of brackets as in the central government's income tax. In addition, the regional governments may also establish their own tax credits, which would only affect their

- differential tax take. In practice, regional governments have changed tax credits and not the tax rate schedule. See López-Laborda, Martínez-Vázquez and Monasterio (2007).
20. Otherwise, when decisions on economic stabilization and income distribution are left to the local governments, wrong incentives and conflicts may arise, and policies may be ineffective and unsustainable.
 21. See, for example, McLure (1998).
 22. However, despite the wide agreement on the advantages of the property tax as a sub-national tax, sub-national governments in developing and transitional countries make relatively little use of the property tax. On average, transitional and developing countries raise property tax revenues that are equivalent to only about 0.6 percent of GDP. See Bahl and Martínez-Vázquez (2007) for an investigation of this puzzle.
 23. The balance between the services received by property owners and the property taxes they pay on their real estate typically can be capitalized into property values. That is, property taxes do not have to reduce the market value of dwellings if the general perception is that the quality of services provided by the local government is good.
 24. See Bahl and Linn (1992) and Sennoga, Sjoquist and Wallace (2007).
 25. Of course, low interest may also reflect the perception that the property tax is complex and has low revenue potential vis-à-vis its associated political costs, although there are exceptions (for example, China, Indonesia and Jamaica).
 26. Being 'house rich and income poor' can be a problem for elderly people. Some countries use special exemption schemes ('homestead exemptions' or 'circuit breakers') to increase equity in the implementation of property taxes.
 27. For international experience with the property tax see Bird and Slack (2004) and Bahl and Martínez-Vázquez (2007).
 28. See, for example, McLure (1996) and Bahl and Tumennasan (2004).
 29. See Keen (2003). The IRAP (Imposta Regionale sulle Attività Produttive) is payable by businesses on the amount their sales exceed the sum of their material purchases and depreciation. This is an origin-based income-type (no full deduction for investment) VAT administered by the subtraction method centrally. Regions have discretion on rates. Although it has many good features of a benefit tax, it has proven to be quite unpopular with taxpayers.
 30. For example, in the Netherlands, provinces impose a surcharge on the motor vehicle tax levied by the central government. Provinces are free to set the rate of the surcharge, subject to a ceiling imposed by the central government.
 31. Generally speaking, a local income tax should be levied at the place of residence because it is there where most taxpayers consume sub-national government services. However, because of administrative convenience, sub-national piggyback taxes are often withheld at source at the place of work by employees. However, it is quite feasible to distribute the funds according to where workers reside.
 32. Other forms of tax autonomy are practiced, such as the ability to modify the base of the tax by providing more or less deductions, exemptions and so on.
 33. Revenue-sharing on a derivation basis for the VAT also means that, as in the case for the sharing of corporate income taxes, the tax tends to be paid according to the place of registration or the location of the headquarters of business firms.
 34. In the case of Canada's harmonized sales tax for the Maritime Provinces, all three provinces have a uniform rate that piggybacks on the federal VAT.
 35. See Fox and Luna (2003) for a discussion of the issues.
 36. See Bird and Gendron (1998).
 37. See Varsano (1995, 1999).
 38. See Bahl et al. (2005).
 39. A destination-based VAT is a tax on consumption in the taxing jurisdiction (it taxes imports but not exports), while an origin-based tax is a tax on production in the taxing jurisdiction (it taxes exports but not imports).
 40. See Bird and Gendron (2000); Keen (2000), Keen and Smith (2000) and McLure (2006) for an animated discussion of the advantages and disadvantages of the dual VAT, CVAT and VIVAT.

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