Normative versus Positive Theories of Revenue Assignments in Federations

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1. Introduction

The subject of this chapter could easily fill a book, possibly even many of them. And indeed, there are several books which cover just subsets of the issues which fall under the broad theme addressed in this chapter. To keep the material at a reasonable size, one thus needs to be selective both in coverage and in depth. Rather than attempting the impossible task of offering a comprehensive coverage of the field, we thought it better to organize this chapter around a number of questions, which we believe are the ones a potential reader would most likely raise. First, how local governments are financed around the world, and in particular which is the role of local taxation in this financing? Second, what has economic theory to say about this allocation, both on normative and positive grounds? In particular, can it explain what we obverse? Third, which are the practical important issues which one should consider in designing a local tax system? For example, given the presence of increasing administrative costs for decentralization, how could one use the existing national taxes to create room for local tax autonomy? And how tax enforcement powers should be allocated across levels of government?

Of course, we do not search for, and the reader should not expect to find, definitive answers in this chapter. In some cases, we can only register our lack of comprehension of many of the existing features of local tax systems. In others, we can only offer the reader a list of the different trade-offs which would be faced by a well disposed policy maker in pursuing a consistent programme of decentralization on the taxing side. Still, even a simple list of open problems may be of great help in understanding the issues involved in designing a local tax system. The references at the end of the chapter should offer the reader a guide to the more specialized literature.

Even in this more limited framework, there are several issues that we can just touch in the chapter. First, there is, or there should be, an obvious link between a tax system at local level and the expenditure which this tax system is supposed to finance. Both the level and the characteristics of the local expenditure should enter as variables in the equation concerning the determination of the optimal local tax system (e.g. Gordon [1983]). We notice the problem, but do not investigate the issue to great extent. Second, local taxation is only one of the instruments which could be used to finance local expenditure. Alternatively, tariffs, debt and grants from higher levels of government could also been (and are in fact) largely used. Clearly, the presence and the features of these alternative financing instruments are going to affect the choices of local governments in terms of their tax instruments and should therefore also be considered in the analysis of an optimal local tax system. We briefly discuss some of these links, but do not attempt to offer a comprehensive analysis of the relationship between these different tools of financing. Other chapters in this book discuss in more detail selected features of these alternative financing systems. Finally, our discussion of local tax theory here has only the scope of offering a general framework for the analysis. No attempts is here made to break new grounds or to offer a comprehensive survey of the literature. The chapters by Wilson and Keen and Lockwood fill many of the gaps that we leave here open.

2. A look to data

Let us then start with a look at data. What do local governments do and how are their finances organised around the world? Do general patterns concerning local taxes emerge? How can the degree of fiscal decentralization, or fiscal autonomy, be measured? In principle, one should take into account all dimensions of fiscal autonomy, the level and composition of spending, the level and composition of revenues (taxation power), the level of borrowing, etc. But it is hard to come up with a comprehensive index of decentralization, and reliable data for international comparisons are seldom available. Some rough indicators of fiscal decentralization can however be constructed on the basis of national accounts data, at least for developed economies where reliable data are more available.

To begin with, in Table 1, the degree of fiscal decentralization in some selected OECD countries is measured through sub-national spending and revenues as percentage to general governments' spending and revenues. As shown, this index varies significantly across countries; the *form* of the state (e.g. whether it is a federal or a unitary country) constitutes at best only a very weak indicator of the actual degree of decentralization of a country. Indeed, there are some unitary countries (most notably, the European Nordic countries) where sub-national governments are responsible for a larger share of public spending and financing than in federal countries. Some regularities however emerge from the Table, which are confirmed in more sophisticate econometric studies (e.g. Cerniglia [2003]). Richer and larger countries are usually more decentralized than smaller and poorer ones (although this correlation should not be mistaken for a casual relationship, which could very well go in the opposite direction); and in almost all countries, sub-national governments' share in total public expenditure exceeds the same share in total revenues, suggesting that grants from higher level of governments are everywhere an important part of local financing.

These simple ratios are of course just a very rough indicator of the actual degree of fiscal decentralization inside a country. On the revenue side, they mix together local shares of national tax revenues, where local autonomy is often nil, and "true" own taxes, that is, tax instruments where local governments have at least some room in determining tax bases and/or tax rates. On the expenditure side, the formal allocation of tasks captured in the Table may have little to do with where the power effectively lies. Indeed, the current practise in most countries

Table 1 – Sub-national government spending and revenues*

	Share in general government spending (1)		Share in general government revenues		Attribution of tax revenues in % of total tax revenues	
	1985	2001	1985	2001	1985	2001
Federal countries						
Austria	28.4	28.5	24.6	21.4	23.8	18.9
Belgium	31.8	34.0	11.4	11.3	4.8	28.6
Canada	54.5	56.5	50.4	49.9	45.4	44.1
Germany	37.6	36.1	31.9	32.4	30.8	29.2
USA	32.6	40.0	37.6	40.4	32.7	31.7
Unitary countries						
Denmark	53.7	57.8	32.3	34.6	28.4	33.8
Finland	30.6	35.5	24.8	24.7	22.4	22.4
France	16.1	18.6	11.6	13.1	8.7	9.3
Greece	4.0	5.0	3.7	3.7	1.3	1.0
Ireland	30.2	29.5	32.3	34.6	2.3	1.9
Italy	25.6	29.7	10.7	17.6	2.3	12.2
Luxembourg	14.2	12.8	8.0	7.4	6.6	5.6
Netherlands	32.6	34.2	11.4	11.1	2.4	3.5
Norway	34.6	38.8	22.5	20.3	17.7	16.3
Portugal	10.3	12.8	7.6	8.3	3.5	6.5
Spain	25.0	32.2	17.0	20.3	11.2	16.5
Sweden	36.7	43.4	34.3	32.0	30.4	30.8
U.K.	22.2	25.9	10.5	7.6	10.2	4.1

* Source: OECD, Jourmaud and Kongsrud, OECD, W.P n. 375/2003

(1) Excluding the transfers paid to other levels of government.

is one of large overlapping between the functions of the different levels of government, so that a large part of local expenditure is in reality mandated or somehow controlled by the Central level (and, to a lesser extent, vice-versa). To produce meaningful comparisons across countries, it would be desirable to control for this institutional variance; unfortunately, this is so large that no convincing international comparison is presently available.

To make a few steps forward, Table 2 disaggregates local government expenditure for the main public functions in some selected countries. Again, contrary to normative economic theory, discussed below, the table shows that there are very few items which are everywhere allocated to the same level of government. History and tradition seem to matter more.

Table 2 – Spending by sub-national governments by main categories*

In per cent shares of total sub-national governments' expenditure

2001 or latest year available

	Public goods**		Education		Health		Social security and welfare		Housing and community amenities		Transport and communication		Other	
	State, region or province	Local	State, region or province	Local	State, region or province	Local	State, region or province	Local	State, region or province	Local	State, region or province	Local	State, region or province	Local
Federal contries														
Australia	18.9	16.1	29.4	0.4	20.1	2.1	4.8	6.3	3.4	18.7	8.8	27.5	14.7	28.9
Austria	13.5	19.5	19.9	16.1	23.3	12.3	18.4	21.4	4.1	3.9	17.8	17.8	3.0	9.0
Belgium	14.8	30.7	42.9	20.5	0.8	2.0	16.9	15.9	2.5	2.4	17.2	13.0	5.0	15.7
Canada	5.3	9.6	23.2	40.5	31.9	1.1	16.3	7.4	1.4	5.5	3.7	12.6	18.1	17.8
Germany	13.8	10.8	21.9	13.0	8.0	14.5	17.1	24.6	4.1	15.3	5.7	6.0	29.4	15.9
Switzerland	13.3	12.9	24.7	23.0	16.6	18.3	17.8	14.8	2.1	8.2	9.8	7.2	15.8	15.5
USA	7.9	16.6	31.0	44.1	21.9	8.7	18.1	7.5	0.7	2.1	7.9	6.1	12.6	14.9
Unitary contries														
Czech Rep.		14.1		24.2		1.1		8.2		20.9		15.8		15.7
Denmark		4.5		13.1		16.5		57.2		0.9		4.2		3.6
France		38.5		16.4		0.7		9.9		6.2		10.3		18.0
Hungary		16.8		27.9		16.4		13.3		13.8		3.6		8.1
Iceland		5.4		28.2		0.9		15.5		5.3		9.1		35.7
Ireland		4.1		11.3		45.5		5.2		14.9		11.3		7.8
Luxembourg		21.2		16.1		0.9		4.6		9.1		21.0		27.1
Netherlands		12.8		17.9		2.6		22.6		20.0		6.7		17.4
Norway		6.4		22.2		32.5		17.6		6.4		4.5		10.4
Poland		11.2		27.8		24.8		8.0		11.4		10.1		6.7
Slovak Rep.		31.6		0.3		0.7		1.7		41.5		12.7		11.4
Spain		31.0		25.8		4.2		3.9		6.5		18.2		10.5
Sweden		13.0		21.0		25.6		27.6		2.9		5.5		4.3
U.K.		16.3		28.7		0.0		32.5		5.4		4.9		12.2

*Source: OECD, Jourmaud and Kongsrud, OECD, W.P n. 375/2003

** General public services, public order and safety

The previous two tables (Table 1 and Table 2) then tell us something about what local governments do in selected countries. But how do they finance their expenditure? Table 3 offers some information on the composition of local revenues among taxes, non-taxes and grants for selected countries. Local taxation plays an important role in most countries. But again, what is mostly impressive is the variance across countries, with the ratio of own tax revenues on total local revenues ranging from more than 70% in Iceland to just 5% in Netherlands.

Table 3 - Revenues received by local government* as a percentage of total revenues

	Tax revenues		Non-tax revenues		Grants	
	1985	2000	1985	2000	1985	2000
	Federal Countries					
Australia	42.5	40.3	37.0	45.4	20.5	14.3
Austria	53.8	52.4	32.1	27.4	14.2	20.1
Belgium	32.0	37.2	6.7	9.2	61.3	53.6
Canada	36.5	40.6	15.6	19.9	47.9	39.5
Germany	36.9	39.5	36.0	25.3	27.0	35.2
Mexico	35.2	19.4	57.2	29.2	7.6	51.4
Switzerland	50.9	48.2	32.4	34.5	16.7	17.3
United States	39.3	37.8	22.1	23.6	38.5	38.6
	Unitary Countries					
Denmark	44.0	52.9	10.0	7.8	46.0	39.3
Finland	46.2	55.1	19.6	22.6	34.2	22.3
France	46.7	45.1	18.9	19.3	34.4	35.5
Iceland	72.0	74.0	20.0	17.3	8.0	8.8
Ireland	5.4	4.9	20.0	18.7	74.6	76.4
Italy	6..3	37.2	11.7	13.5	82.0	49.3
Luxembourg	45.0	33.4	12.5	29.4	42.5	37.2
Netherlands	5.6	9.7	14.0	20.2	80.4	70.1
Norway	45.7	38.5	15.8	20.1	38.4	41.4
Spain	56.3	66.5	19.4	11.0	24.2	22.6
Sweden	57.7	74.9	20.5	5.7	21.8	19.4
United Kingdom	30.8	14.3	21.1	15.6	48.1	70.1

*Source: OECD, Revenue Statistics, 2003

The Table offers some other general insights. First, there is some substitution effect going on between local tax revenue and local tariffs; countries who rely more on taxes to finance local governments generally use less tariffs, and vice-versa. Second, grants from higher levels of government also play an important role in all countries. Third, we can detect some tendency towards decentralization on the financing side in the last 20 years. Between 1985 and 2003 most countries increased the role of taxation in the financing of local governments, reducing the share of grants in local budgets. However, there are also some counter-examples to this general tendency, the UK and Ireland, among the unitary countries and Switzerland and Mexico, among the federal ones.

These contrasting tendencies can be partly explained in terms of the difference in the composition of local tax revenues (Tables 4 and 5) In large federal countries, local governments are largely financed by property taxes, which cover most of local tax revenues. This is particularly true for the countries belonging to the Anglo-Saxon tradition (Australia, Canada , USA). On the contrary, federal countries belonging to continental Europe rely heavily on income and profit taxes

(Belgium, Germany, Switzerland); others, such as Spain and Austria, present a more balanced structure, involving property tax and consumption tax as well. Among unitary countries, the UK is exceptional in the sense of employing exclusively property taxation (the famous “rates”) to finance local governments; on the contrary, Nordic European countries are exceptional in the sense of relying exclusively on income taxation (e.g. labour taxation, as in these countries the Dual Income Tax system prevails). The other countries use more widespread sources for local taxation. Italy and France are somewhat peculiar as they also make heavy use of local business taxes, usually taxes which rely on a somewhat broader definition of tax base than just profits (i.e. labour costs, imputed rents for industrial buildings and so on). As these different sources of taxation present different elasticity to monetary income, they may partly explain the different evolution of the decentralization index above.

Table 4 – Tax revenues of the main local taxes, 2001, federal countries*

as % of total tax revenues of local governments

	Income and profits	Payroll	Property	General consumption taxes	Specific goods and services	Taxes on use etc.	Other taxes
Australia	-	-	100.0	-	-	-	-
Austria	37.7	19.1	10.0	22.7	3.8	1.7	5.0
Belgium	85.8	-	-	1.4	7.9	4.6	0.3
Canada	-	-	91.6	0.2	-	1.6	6.5
Germany	77.1	-	16.6	5.2	0.5	0.4	0.2
Mexico	-	0.1	88.5	-	1.9	0.9	8.6
Switzerland	83.1	-	16.6	-	0.2	0.1	-
United States	6.2	-	71.5	12.4	5.1	4.8	-

*Source: OECD, Revenue Statistics, 2003

Table 5 – Tax revenues of the main local taxes, 2001, unitary countries*

as % of total tax revenues of local governments

	Income and profits Individuals	Income and profits Corporate	Property	General consumption taxes	Specific goods and services	Taxes on use etc.	Other taxes (1)
Denmark	91.1	2.2	6.6	-	-	-	-
Finland	78.6	16.9	4.3	-	-	-	0.2
France	-	-	49.1	-	7.6	3.4	39.8
Greece	-	-	56.2	2.8	23.1	17.9	-
Hungary	0.8	-	22.2	71.1	1.0	4.5	0.4
Iceland	80.4	-	12.4	7.2	-	-	-
Ireland	-	-	-	100.0	-	-	-
Italy	8.8	-	18.0	-	8.7	10.6	53.9

Japan	47.5	27.4	31.1	7.0	8.1	5.4	1.0
Luxembourg	-	92.6	5.8	-	1.0	0.2	0.3
Netherlands	-	-	57.5	-	-	42.5	-
Norway	90.6	-	7.5	-	-	1.8	-
Portugal	22.4	7.9	44.3	17.3	12.3	3.3	0.3
Spain	25.3	21.9	37.4	11.7	9.9	13.7	1.9
Sweden	100.0	-	-	-	-	-	-
United Kingdom	-	-	99.9	-	-	-	0.1

*Source: OECD, Revenue Statistics, 2003

(1) Includes tax on net wealth (Norway), taxes at death (Finland and Portugal) and some residual taxes, mainly on business (France, Italy)

However, the indicators discussed so far do not account for the actual taxing power of sub-national governments, as they mix together different tax instruments, from tax shares to own taxes. Not much is known about the effective taxing powers of local governments in the different countries, and empirical studies on fiscal federalism have often suffered from lack of proper data. Table 6 shows the results of a single study which has attempted to cast some light on this issue in a number of OECD countries (Jourmaud and Kongsrud [2003]). In this study, taxing power is measured as the product of local discretion (in setting up tax rates and tax base by local governments) and local tax revenue on GDP. Clearly, the Northern European countries, plus a number of federal countries such as Belgium and Switzerland, show a higher level of decentralization. Vice-versa, the other countries, including federal ones such as Germany and Austria, present low level of actual decentralization. Indeed, once discretion in setting tax rates is taken into account, Germany appears as centralized on the taxing side as the UK, in spite of the fact that in the latter local tax revenue on GDP is about one tenth than in the former.

Table 6 - Subnational government taxing powers in selected OECD countries (1), 1995*

	Sub-national government taxes related to:		Discretion to set taxes (2)	Summary indicator of taxing power (3)
	Total taxes	GDP		
Sweden	32.6	15.5	100.0	15.5
Denmark	31.3	15.5	95.1	14.7
Switzerland	35.8	11.9	92.4	11.0
Finland	21.8	9.8	89.0	8.7
Belgium	27.9	12.4	57.9	7.2
Iceland	20.4	6.4	100.0	6.4
Japan	24.2	6.8	90.3	6.1
Spain	13.3	4.4	66.6	2.9
New Zealand	5.3	2.0	98.0	2.0
Germany	29.0	11.1	12.8	1.4

Poland	7.5	3.0	46.0	1.4
United Kingdom	3.9	1.4	100.0	1.4
Netherlands	2.7	1.1	100.0	1.1
Austria	20.9	8.7	9.5	0.8
Portugal	5.6	1.8	31.5	0.6
Czech Republic	12.9	5.2	10.0	0.5
Hungary	2.6	1.1	30.0	0.3
Norway	19.7	7.9	3.3	0.3
Mexico	3.3	0.6	11.2	0.1

*Source: OECD, Jourmaud and Kongsrud, OECD, W.P n. 375/2003

(1) The Countries are ranked in descending order according to the value of the summary indicator of taxing powers. (2) The figures show the percentage of their total taxes for which sub-national governments hold full discretion over the tax rate, the tax base, or both the tax rate and the tax base. A value of 100 designates full discretion. (3) The summary indicator is the product of the ratio of sub-national governments taxes to GDP and the degree in the discretion to set taxes. Thus it measures sub-national government taxes with full discretion as a percentage od GDP.

3. Fiscal federalism and tax assignment: what theory says?

So, this is the empirical evidence, or at least a meaningful part of it. What theory has to say about it? Let us look first at the *normative* side of it, that part which in literature comes under the label of the "tax assignment" problem. Tax assignment concerns the optimal determination of the vertical structure of taxation and tries to answer to questions such as which level of government ought to choose the taxes to be imposed at any level, which one should define tax bases, which one the tax rates and, finally, which one should enforce and administer the various tax tools. In this section we make an attempt to summarize the main prescriptions which emerges from economic theory on this issue.

One major problem is that there is no generally accepted framework in which to discuss this problem. Indeed, there are two extreme positions in this debate, which makes reference to the traditional normative approach (Musgrave – Oates) on the one side, and to the public choice approach (Brennan-Buchanan) on the other.

According to the former approach, optimal tax assignment is strictly related to the normative optimal assignment of expenditure functions to levels of governments. According to Musgrave's famous distinction, there are three fiscal functions of government: resource allocation, income redistribution and macroeconomic stabilization. Because of spill-over effects which would be difficult to internalise at local level[1], the responsibility for income redistribution and macroeconomic stabilization should be assigned to central government, whereas resource allocation

[1] To be sure, Coase theorem tells us that under well defined property rights assignment, bargaining across rational agents should lead to a complete internalisation of any externality. However, Coase theorem relies upon lack of transaction costs, symmetric information, and enforceable agreements. All these assumptions are highly questionable in the present context.

could be performed by all levels of governments. It follows that individual progressive income taxes and corporate income taxes should be assigned to central government, as the best instruments for both income redistribution and macroeconomic stabilization. With regard to the allocation branch, on efficiency grounds, central and local governments should mainly use benefit taxes. The conventional approach also provides some guidelines for the setting of sub-national taxes. First, they should levy taxes on relative immobile assets, in order to prevent tax competition and revenue losses; second, they should levy taxes on bases evenly distributed among jurisdictions, in order to prevent horizontal fiscal imbalance; third, they should levy taxes whose yield is relatively stable in real terms, to ensure expenditure planning.

The traditional approach has however been criticised in many respects. It rests on the assumption that governments are benevolent, social welfare maximising unities; it does not take into account the exercise of political power and bargaining in designing tax assignment; it is a purely normative theory and provides very poor explanation of tax assignment and expenditure allocation across central and local governments as we observe in the real world. Indeed, as we have just shown, in reality local governments are in many countries concerned with income redistribution, for instance in education and health care sectors; and local governments in fact make little use of benefit taxes.

In contrast with the traditional approach, the Brennan-Buchanan approach hinges upon a completely alternative view of governments, and therefore leads to a completely alternative view of the optimal tax assignment. In this approach, governments are not benevolent, and even in strong democracies, effective controls on politicians are poor. Thus politicians behave as Leviathans, and taxes are used to maximise total revenue from private sector as a larger amount of revenue maximizes the spending power of politicians and bureaucrats. This involves choosing broad tax bases with the aim of minimising tax evasion and tax erosion, and imposing higher rates on less elastic bases. Accordingly, within this framework, Brennan and Buchanan stress the positive effects of tax competition among local governments, as one of the forces restraining tax design and budget size; sub-national taxes should then be imposed on mobile factors so as to trigger competition which limits the rapaciousness of Leviathan. Tax competition provides efficiency gains just as competition between private economic agents does, by reducing the monopoly powers of governmental units. As in the Tiebout model, where people *vote with their feet*, competition imposes a limitation on the ability of governments to expropriate citizens.

Many criticisms can also be addressed to the Leviathan model. In practice, governments are less monopolist than in Brennan-Buchanan model; competition among sub-national governments may introduce serious allocative distortions, for example, in the case of predatory tax competition, beggar-my-neighbor competition, which can lead to an erosion of the tax base; there is little evidence on that size of public sector *"should be smaller, ceteris paribus, the greater the extent to which taxes and expenditures are decentralized"* (Brennan and Buchanan [1980], p.15). In fact, empirical results concerning the Leviathan hypothesis are mixed at best (Edwards and Keen [1996].

There is another problem. In spite of all their differences, both approaches share the common feature of being fundamentally static and normative in nature. In the Oates-Musgrave tradition, tax assignment solves a benevolent social planner's problem; in the Brennan-Buchanan tradition, tax assignment solves – at the constitutional level - the opposite problem of limiting the predatory appetite of the Leviathan. As a result, none of them is really interested in addressing the question of why tax assignments are what they are in the real world. More interesting insights on these grounds come from the more *positive* oriented approach of Hettich and Winer and more generally, by the modern literature on political economy (Persson and Tabellini [2000]). In this literature, there is an attempt to endogenize the fiscal choices of governments, both on the revenue and the expenditure side, as the result of the incentives that the different features of the political system imposes on politicians. For instance, Hettich and Winer develop a model of tax choices, where governments attempt to minimize the political costs of rising a given amount of revenue, in terms of votes lost at election time; parties propose fiscal programs that maximize their probability of winning the next election. This model (a probabilistic spatial voting approach) does not provide normative principles but tries to explain some features we observe in the tax system, such as complicated tax structures, multiple rates, bases and special exemptions, on the assumption that different people have different political responses to taxation.

In an interesting extension of this analysis to our problem here, the tax assignment (or rather tax re-assignment) problem, Winer [2000] uses Breton [1996] framework to argue that the distribution of tax powers inside a federation has very little to do with either the formal constitution of a country or the insights from the normative approaches. Rather, as constitutions are incomplete contracts whose interpretation may change along the time, the observed tax assignment in a federation is the result of a struggle between different levels of government to raise their respective share of taxing powers against the others. In this struggle, exogenous shocks such as major international crisis (e.g. the two World Wars) or technological advances (e.g. in tax enforcement), by changing the relative bargaining powers of the different levels of governments, also change the effective distribution of taxing power[2].

[2] Winer illustrates his point with reference to the very different evolution of taxing powers in two similar federations during the last century, Canada and Australia.

This approach is promising as it suggests to look at fiscal federalism as a mechanism to reallocate the effective use of governing instruments, including tax sources, among the various political jurisdictions in the face of unforeseen events. However, in this approach, it became unclear how one could judge on normative grounds the observed distribution of tax powers across jurisdictions. Furthermore, as already mentioned, there are many different models of political economy which could be applied to tax choices and the results vary greatly according to the model considered (in particular, if politicians can or cannot commit to their electoral promises, so that electoral competition hinges on before or after the elections) and to the specific question addressed. It is then fair to say that no clear indication concerning the optimal tax assignment to different levels of government emerges from this literature (Profeta, [2005]).

In conclusion, it is hard to disagree with Bird's remarks, *in the contest of tax assignment; it seems fair to say that there is no great support for either extreme position in this debate. Neither the position taken by many practical people that all intergovernmental competition is bad nor the extreme public choice position that all intergovernmental competition is good dominates. […] The tax assignment that actually prevails in any country inevitably reflects more the outcome of political bargaining in a particular historical situation than the consistent application of any normative principles* (Bird [1999], p. 9).

4. Designing local taxation: a conceptual framework

In such a situation, simply opposing the different positions does not seem to be a very fruitful exercise. It might instead be more useful to try to present a unified framework, asking if the insights deriving from the different theories may tell us something in terms of designing an "optimal" local taxation system under different relevant circumstances. This is what we attempt to do in this paragraph. A useful starting point for such an analysis is a remark recently made by Wildasin [2004] for local debts, but which also applies to local taxation. Wildasin notes that as both local and central governments issue debts, but at the same time central government also transfers resources to local governments, it would make no difference if all local debts were transferred to the central government, and in exchange the latter increased grants to local governments by exactly the same amount. The position of both private agents and that of the public sector as a whole would remain unchanged. By the same token, it would make no difference if an euro of local taxes were exchanged with an euro of extra transfers, transferring all tax revenue to the central government. Then, if it does make a difference on economic grounds, it can only be because there are some imperfections in the functioning of the markets or in the functioning of the political system so that an euro of local tax revenue is not the same thing of an euro of national tax (plus transfer). In what follows, we will try to discuss what can make a difference under situations of increasing complexity and realism. As we will try to argue, a reasonable, although not uncontroversial, tax assignment model emerges from this exercise.

4.1 Identical regions with immobile agents

Consider then first the simplest case where there are no differences whatsoever across jurisdictions; regions are identical in terms of population, resources, preferences and income of the resident individuals. Suppose further that there is no mobility of any sort, with all agents - firms, factors and individuals - being completely immobile across regions. In this highly abstract world, one may then ask if there is any role at all for taxation at local level. Indeed, in such a world, one may actually wonder if there is a role for local governments at all, as all decisions could be taken by the central government without any risk of inducing discrimination across different individuals.

The most recent literature suggests that there may indeed be still one rationale. If politicians are not perfectly benevolent, or are not uniformly competent, creating several jurisdictions, rather than having a single decision maker, may help citizens in learning about the quality of their governments, allowing them to compare the policy outcome in their jurisdiction with respect to those in other similar jurisdictions. Citizens are "rationally ignorant"; they do not have the same incentives to invest to learn the details of policy making as politicians do, and this put them in a situation of informational asymmetry. This asymmetric situation may then be eased by having several jurisdictions rather than one, because, unless "bad" local politicians are able to perfectly collude against citizens, their different choices offer potentially useful information to citizens[3], which may then allow the latter to discriminate between bad and good politicians and to keep their behaviour in check.

This basic insight, which is presently under scrutiny by a growing literature under the general label of "yardstick competition" (see Lockwood, Salmon for details), is interesting because it suggests that there may be efficiency gains from decentralization, even in the absence of either heterogeneity of preferences (Oates) or mobility of agents (Tiebout). It is also interesting because it has some important implications for local taxation. First, it suggests that indeed, even in the very abstract setting we are considering here, there may be a role for taxation as a main source of finance for local governments. It is true that, in principle, one could think that yardstick competition might also be triggered by many other factors rather than local taxation (say, some relevant items of local expenditure). In practice, however, it is clear that local taxes are the most natural candidate for

[3] This of course implies that there is some spatial correlation among local economies, which seems however reasonable in light of the fact that we are taking about local governments inside a single country.

yardstick competition. For instance, because if everything were financed with money coming from outside the jurisdiction, citizens living in that jurisdiction would have very little incentive to check how that money was spent. Or, say, because it is easier to compare tax rates instead of complicated expenditure structure[4].

Second, this approach also offers some novel insights about the desirable characteristics of local taxes. If one of the basic roles of local taxation is that of increasing the responsibility and accountability of local politicians, then local taxes should be chosen so as to maximize the ability of citizens to control the behaviour of local politicians. Hence, issues such as *visibility, transparency, accountability* of the local tax system become paramount. For instance, one should certainly prefer own taxes over tax surcharge and tax shares as a potential source for local taxation, as the allocation of responsibility across levels of government would then be clearer. Also, while one would certainly want to give autonomy to the local politicians in the setting up of the tax rates, it might be more doubtful if we should also want to give the same autonomy on the tax base, as that would then make inter-regional comparison more difficult. And so on. Admittedly, it is unlikely that a satisfactory theory of tax assignments could be built just on the basis of yardstick competition theory; some suggestions are precious, however. We will come back to that below.

4.2 Identical regions with mobility

Next, suppose that we add to the picture the possibility that agents or factors can move freely across jurisdictions, as it happens in the real-world federations, while maintaining the hypothesis of identical jurisdictions, so as to rule out equity considerations and other efficiency aspects of local taxation. Factors, firms or household interregional mobility lies at the heart of most of the literature on fiscal federalism, which has at length investigated the effects of mobility on the equilibrium allocations. Results depend very much on who can move (firms, factors, households o just some of those?), at which cost (same or differentiated costs for the different agents?), and what can exactly be moved (only the place of residence or the actual employment of a factor?)[5].

Provided that governments are benevolent enough, the basic message of this literature is that mobility usually introduces inefficiency in the spatial allocation of private agents and therefore induces sub-optimal equilibria. Only if regions have a complete set of fiscal instruments, may tax firms and households depending on their location, and moreover have access to a non distorting tax (such as a tax on land rents) to cover costs above marginal crowding costs, can efficient allocations

[4] And indeed most empirical enquires on yardstick competition focussed on local taxation, with results broadly supporting for the theory (Besley and Case [1995])

[5] For households may be complicated to move their place of residence without carrying their labour endowment with them. But this is not true for big corporations, for example.

be reached. But this also requires either perfect competitive markets or perfectly mobile households. Otherwise, in presence of migration costs, if these costs are differentiated across households, or if mobility is only limited to firms or factors (i.e. capital), mobility again induces inefficient allocations (Wellich, [2000]).

This conclusion may be reversed if politicians are not benevolent or if there exist some other political failures. Tax competition, for instance, may be beneficial if politicians are Leviathans, because it reduces equilibrium tax rates. It might also be beneficial if politicians are benevolent but unable to commit, as it can help to solve a time inconsistency problem (e.g. Persson and Tabellini [2000]). Hence, the normative status of mobility depends very much on the view one has about local politics on the one hand, and on the plausibility of (efficient) Tiebout-type of equilibrium outcomes, on the other.

On the whole, our view is that inter-jurisdictional mobility should be better thought of *as a constraint* to be imposed on the source of taxation which can be given to local governments (Cremer et al.[1996]). For instance, basic incidence theory suggests that a local tax on a factor which is perfectly mobile across jurisdictions is ultimately paid by the less mobile ones (Gordon [1986]). It would then make very little sense to assign such a tax to a local government. And even if one could image complicated centrally made transfer mechanisms which would allow local governments to internalise the spill-over effects from local taxation (e.g. Wellich [2000]), it is clearly much better to avoid these problems *ex ante* by an appropriate tax assignment, rather than by trying to correct them *ex post* with informational costly transfer systems[6].

Hence, this suggests that taxes on highly mobile assets, such as for instance (source based) taxes on corporations or capital income should not be given to local governments. On the other hand, it is a matter of degree. It is hard to think to tax bases which are totally immobile across jurisdictions (leaving aside taxes on land rents); and some amount of mobility in the local tax bases might not be too harmful. It might induce inefficient choices from the benevolent politicians, but it might also restrain the choices of less benevolent ones and solve some other incentives problem as well. For instance, taxes on consumption offer some advantages as a form of local taxation (see below, section 6). True, they might also induce some inefficient cross-border shopping effects. But, for reasonable differences in the local tax rates, these effects are likely to be very limited (Kambur and Keen [1993], Besley and Case [1995]), especially if the size of the local jurisdictions is large enough. Similarly, local surcharges on the personal income tax, although possibly in conflict with benefit taxation and the redistributing role of taxation, may have several advantages. For example, the merit of being highly visible to taxpayers, thus increasing the accountability of local politicians.

[6] Furthermore, yardstick competition and tax competition may conflict one with the other; local taxes on a wholly mobile tax base are less informative for the citizens than a tax on a less mobile factor.

The general lesson is that once the mobility of some tax base goes below some given threshold, this tax base has some chances to be considered, on efficiency grounds, as a source for local taxation. Some limited amount of tax competition should not forbid the use of that tax base for local financing.

Much more difficult to cope with is the opposite case of *tax exporting*. That is, the case where, due to the mobility of the tax base, or through the effects of taxation on the market mechanism, taxes levied in some jurisdictions are carried over to the residents of other jurisdictions. Tax exporting is deleterious for local tax autonomy, whatever the model of government one has in mind. Benevolent governments interested in the well-being of residents, as well as Leviathan governments only interested in accumulating rents, would act in the same (inefficient) way in this context. Tax exporting immediately rules out some assets from local taxation. For instance, excises on local productive services (i.e. gas and petrol extraction and refinement) which are used as input nation-wide, are an obvious example of tax instruments which should not be given to local administrations. On the other hand, once tax incidence is taken into consideration, many other tax instruments become suspicious. As we saw above, some countries use local tax on business as a source of local revenue. However, if these taxes can be partly translated on prices, and the relevant goods are sold elsewhere in the country, it is clear that this source of taxation allows for tax exporting, and its use as a local tax should therefore be limited. One problem with this type of argument is that we do not really know much about tax incidence outside the simplest perfect competitive models, and the available empirical evidence is poor. It is therefore largely a matter of judgment and specific analysis to decide which tax allows or does not allow for tax exporting.

Very similar considerations apply to the case of another famous source of tax exporting, although not necessarily linked with mobility, the existence of vertical tax externalities across levels of governments (Keen, [1998]). If several layers of government share, partially or totally, the same tax base, none would have an incentive to take into account the effects of own tax choices on the tax base of the other level of government. This would imply higher taxes than optimal as each level of government tries to "export" on the other level the burden of taxation, with the effect of overtaxing the same citizens. Consequently, it would be better to choose tax bases across levels of government so as to minimize this occurrence. But this is easier said than done, as basic economic equivalences suggest that many formally different taxes in reality share the same base[7]. Indeed, in a more fundamental sense, all taxes overlap, as ultimately they all make reference to the same taxable asset, the national wealth produced in a country in a given period. Hence, there is little to do about this

[7] The classical example is that of a tax levied on consumption, attributed to a local government, and a tax on labour income, given instead to the national government. But by the budget constraint of the individual taxpayer, the two tax bases are in reality identical, for all those consumers who live out of their labour income.

problem, except trying to understand how serious the problem is in practise. Empirical evidence is unfortunately absent. On theoretical grounds, an obvious and definite solution to the problem of tax externalities would be to concentrate all tax powers on a single level of government, a solution which has indeed been advocated in the literature[8]. But clearly this would have many negative side-effects, for instance in terms of the accountability of the different governments. Alternatively, one can think of some compensating transfer mechanism across levels of government which forced them to internalise the vertical externalities.

4.3 Difference in preferences

Our basic conclusion is that there is a role for tax autonomy at local level even in the simplest case of identical regions. This role is weakened, but not eliminated, by the presence of mobility of the tax bases. Mobility reduces the set of tax instruments which can safely be offered to local governments and raise many other efficiency aspects which need to be considered, but does not change the nature of this basic insight. However, if we allow for difference in local preferences across regions (still maintaining the assumption of identical resources) the argument for local autonomy in the setting of the choice of the tax rates and tax bases can only be strengthened on efficiency grounds. It is hard to devise mechanisms which would allow local governments to reflect differences in local preferences, if these local governments did not have tax instruments to use to this effect. Local taxation may be used to finance different levels of expenditures as well as a mechanism to share the burden of taxation differently across the local population. True, other tools, such as tax expenditures and tariffs may also play this role. But whenever local expenditure presents characteristics of indivisibility and introduces distributive effects across the population (that is, in the overall majority of cases), the recourse to taxation appears unavoidable.

At the same time, this is also the type of setting where specific suggestions are difficult to be made, without considering the specific characteristics of the allocation of competences across governments. As suggested by the traditional approach, benefit taxation is the main tool which should be used to solve allocative problems and to take into account the heterogeneity of preferences at local level. On the other hand, this largely depends on what these local governments are asked to do. Benefit taxation, beside being very limited in practical terms, makes sense if local governments only play an allocative role. If this is not the case, as our survey above indeed suggests to be the case for most developed countries, then other tax instruments need to be considered at local level. For instance, if local governments also play a relevant role in the provision of important services in fields such as education, health and social security, it would make little sense

[8] This was, for example, the conclusions in the paper by Boadway and Keen [1996].

to deny a role to these governments in the personal income tax , as this is traditionally the main tool used to finance these services. Hence, the answer to the question of which taxes to allocate at local level can only be case-specific; it requires first a preliminary recognition of the attribution of functions. Of course, this only moves the fundamental questions one step up in the ladder; why is that some competences are given to local governments in a country and some others in a different country?

4.4 Differences in endowments

Finally, suppose that we now also relax the assumption of identical endowments across regions, so that by now local jurisdictions are also allowed to differ in terms of resource allocations. Difference in endowments also interacts with the other efficiency aspects of taxation (e.g. Wellich [2000]) which we have already discussed, but it mainly introduces a new aspect in the discussion. It becomes crucial to consider the problem of *the distribution of the tax base* of the different tax instruments across the national community. If local governments are supposed to perform similar functions across the country[9], but have very differentiated resources to finance these functions, there is clearly a problem. This has mainly to do with the issue of *horizontal equity*; individuals who are perceived to be identical at the national level (say, household with the same income and the same composition) might receive a very differentiated basket of local services just because they happen to live in regions or local communities with a very different endowment of resources. And unless we can count on perfect household mobility to take automatically into account this problem, so that people who live in poorer regions do so out of an autonomous choice[10], this inequity can be perceived as unacceptable in many countries[11].

Of course, one may think that intergovernmental transfers should take care of the problem. Indeed, as we saw in section 2, there is basically no country where grants from higher levels of government do not play an important role in the financing of local governments. Still, there are very

[9] This does not need to be the case. Indeed, there are several examples in the real world of "different speed federalism"; that is, situation where the tasks of regions or of lower level governments are differentiated along the country. The ex-ante distribution of resources may play a role in this differentiated assignment of functions, see for example the Spanish case in the 90's. Typically, weaker and poorer regions are more "protected" by the center , receiving more grants and more administrative support. In exchange, they have less autonomy.

[10] Meaning that there are elements in the structure of individual preferences which more than compensate individuals for living in the poorer regions. Notice that the sort of mobility needed would require, for example, full employment and no productive ability loss for moving elsewhere. In other words, we would be back to a Tiebout framework, where indeed perfect mobility not only solve an efficiency problem but also an equity problem, in the sense that in equilibrium not individual is worse off for living in a region rather than in another.

[11] Still, it is not clear what the notion of horizontal equity really means in a federal context. If one interprets it as meaning that no difference across identical individuals due to location choices is acceptable on ethical grounds, it is difficult to resist the impression that the only allocation compatible with perfect horizontal equity is one of perfect centralization, with no role left to local governments. The literature on fiscal federalism has always had serious problems to come at terms with the issue of horizontal equity in a territorial context; see Buchanan for an earlier attempt and Bordignon and Peragine [2005] for a more recent one.

substantial reasons for believing that the role of the transfer system in this context can only be limited. First, fiscal equalisation across local governments would require not equality of resources at a given tax rate for the local tax system, (which can be easily obtained with a block grant at some reference tax rate), but rather equalisation in the *local tax effort* for any tax rate one local government should decide to use. In other words, irrespective of own resources, each local government should raise the same amount of revenue with respect of some standardized basis (say, per capita) by raising its own tax rate at any equal level. Transfer mechanisms with this property can be designed, but suffer of many inconveniences, above all that the overall amount of transfers to local governments cannot be defined ex ante but only ex post, as a result of the autonomous choices of local governments. Second, transfers mechanisms raise a number of incentive issues which have been addressed by a large literature (see Boadway in this book and section 5 below). We cannot discuss this literature here, but it suffices to say that once these incentive problems are taken into account, transfer systems are a second best instrument, inducing several welfare losses. Hence, it is certainly desirable to try to solve inequity problems in the interregional distribution of resources by an appropriate choice of local taxation ex ante, rather than ex post through transfer mechanisms.

In our view, differences in endowment should be thought as introducing yet another constraint in the choice of an optimal local tax system, akin to the mobility issue. *Ceteris paribus*, one should avoid choosing tax tools with a very unequal distribution at the territorial level, as this distribution can only be imperfectly corrected ex post through the grant system. For instance, it is a matter of fact that in many countries territorial differences in per capita income (or value added) are larger than differences in per capita consumption. This is so because the richer parts of the country, either through the national government budget or through the donations of individual citizens (e.g. transfers from emigrants in the richer regions), usually transfer resources to the poorer parts of the country, and this helps to maintain per capita consumption at a more equal level in spite of the difference in per capita income[12]. Hence, *ceteris paribus*, consumption taxes should be preferred as a source of local taxation.

This argument also allows us to touch briefly another important practical issue. In the world of normative fiscal federalism theory, functions are allocated on one-function-one-level of government basis, depending on the characteristics of that function (see section 3). That is, each government should be responsible for a given function with no overlapping of competences across levels of government. In reality, as we observed above, this is not the case in most countries. Either as a result of an explicit normative decision taken at Constitutional level, or as a result of the political process, many functions are in reality jointly performed by different levels of government.

[12] In Italy for instance the per capita difference in income between the North and the South of the country is close to 100% (almost 200% for per capita value added); it is only around 30% in terms of per capita consumption.

This overlapping, variously explained in the literature as a consequence of a "conflict" across levels of governments (Breton, [1996]) or as the attempt of benevolent national governments to limit excessive variance in the supply at local level of fundamental services (education, health etc.), has probably some justifications even on purely efficiency grounds. Spill-over effects across different functions are probably unavoidable, so that any rigid attribution of competencies across levels of government is bound to be overcome in reality. There are services that although decided at the central level are better executed at the local level for purely administrative and organizational reasons; and finally there may be various political distortions which suggest that overlapping among levels of government could be in many case a second best solution to an incentive problem[13]. This means that it might be better to think to many public functions as to a *continuum*, with different levels of governments which act, sometimes overlapping, on some pieces of this continuum. In such a world, it is obvious that the source of financing for local governments need also to "overlap", presenting a continuum from own taxation to grants from the central level, as the different levels of government attempt to influence the choices of the other level in its own piece of the continuum. Hence, the role of local taxation should be assessed in the context of this continuum of functions and resources (Smart [1998]).

4.5 Dynamic issues

So far we have only discussed of static economies. But the real world is dynamic and one should also consider how the case for local taxation changes when we introduce dynamic issues. Many different features could of course be considered in this enlarged framework, and it would take us too far to discuss them here[14]. But there is at least one aspect which has received considerable attention in the recent literature and that is worth mentioning for its practical importance, and also because it hinges directly on the issue of local taxation. This is the problem of how to enforce a *hard budget constraint* at local level. The traditional normative approach usually takes for granted that a local budget can be enforced at no costs; given its resources, a local government will always keep its (inter-temporal) budget in equilibrium, by setting up expenditure accordingly. In reality, this does not always happen. Worse, it is sometimes the case that it is the central government who solves the financial problems of local governments by bailing out local debts or by increasing transfers ex post. In some countries, this problem has proved to be so pervasive to threaten the

[13] See for instance Persson and Tabellini [2000] on separation of powers and Bordignon, Colombo and Galmarini [2003] on lobbying.
[14] With myopic governments, for instance, a crucial issue is if the many efficiency results in the literature of fiscal federalism would still hold in an inter-temporal setting, for instance with overlapping generations.

financial stability of the country as a whole. Brazil and Argentina are the most obvious examples, but there are increasing worries that the soft budget constraint disease may spread over to many other developed countries, like the rich European countries as a result of the decentralization process which is currently taking place (Rodden et al. [2003]; Bordignon, [2005]).

It is important to understand that the soft budget constraint problem is really a *dynamic issue*, a time inconsistency problem. The central government sets up a given level of transfers ex ante; but ex post, after some choices have been made or threatened by the local government, the central government gives in, and takes care of local governments' financial problems. The crucial feature, however, - the identifying element of a soft budget constraint problem - is that this behaviour on the part of the central government is *expected* by the local government (or we would not have a soft budget problem to start with). The latter misbehaves *ex ante* exactly because it knows that with some positive probability it is going to get financial help *ex post* by the centre. Why this happens - why is that central government cannot commit *ex ante* and why is that it may change his views after some decisions have been taken at local levels - has been scrutinized by a large literature (Kornai et al.[2002]; Bordignon, [2005]). More interestingly for our aims, it is what can be done to avoid the problem. A crucial suggestion which derives from the literature is that *local taxation may play an important role in curbing expectations of soft budget constraints* . The threat by the central government not to intervene *ex post* to solve local governments' problems may simply be not credible *ex ante*, if the local government has no sufficient resources of its own to take care of unpredictable events. And as local expenditure tend to be fixed in the short run, these extra resources can only come from local taxation. Interestingly, there is some robust empirical evidence (Rodden [2002] and [2005]; Bordignon and Turati, [2005]), based on both interregional and inter-countries comparison, which suggests that local governments which are mostly financed by own resources tend to be less prone to soft budget constraints problems. Hence, in the complex equation determining the optimal tax assignment issue, one should take into account that local taxation is also instrumental to cope with this kind of dynamic problems.

5. Which type of tax autonomy (methods of tax assignment)?

The previous section suggests that there may be role for tax autonomy at local level even in the simplest case of identical regions and immobile citizens, and that this role is further enhanced by the consideration of differences in local preferences and of dynamic issues and commitment problems. A related theme is how this autonomy can be implemented in practise. The literature suggests *three fundamental methods* of tax assignment: own taxes (independent legislation and administration); tax surcharges; tax sharing. Each method is characterized by a different degree of fiscal autonomy or taxing power. Let us briefly discuss merits and demerits of these alternative methods.

Maximum degree of sub-national fiscal autonomy occurs under independent legislation and administration, where sub-national governments enact their own tax laws independently of higher levels of government; each jurisdiction chooses which taxes to levy, the definition of tax base, sets up the tax rates, and it is responsible for tax administration and enforcement. Own revenues, in the sense of own taxing power and marginal source of revenues, provide sub-national governments control over the level of taxation and expenditure. This has many advantages. First, sub-national governments can predict their revenues with an acceptable degree of certainty and in consequence can plan their expenditure flows; second, they are able to increase or reduce their revenues and are clearly responsible for the consequences of their actions; third, under independent legislation, the level of local public services is strongly connected to the level of local revenues. In this respect, independent legislation is also consistent with the definition of "assignment" as "the authority to design and implement policy" - Breton [1996] - as it provides sub-national governments with a real taxing power and political accountability for their fiscal policies, an increasingly important element as discussed above. Rational tax assignment may thus help to increase accountability.

Independent legislation has however potential disadvantages, especially if different jurisdictions design tax structures which are radically different: duplication of administration, higher compliance costs, tax exporting, which may produce inequities and inefficiencies. Another potential demerit of independent legislation is predatory tax competition, *especially in the case when sub-national governments are free to set tax bases rather than tax rates, and may erode the tax base …. competition among the US states and Canadian provinces to attract business and households … has resulted in the erosion of some tax bases and to an increased complexity of tax system, hence raising transaction costs* (OECD [2003], p. 153).

The second method of tax assignment consists of *surcharges*, when the same tax is levied by central and sub-national governments. The latter impose surcharges on the tax base defined by the central government. In this case, the taxing power of sub-national jurisdictions is lower than under independent legislation and lies in the choice of tax rates, sometimes within limits decided by central government, on their share of total tax base. This method of tax assignment retains some of the benefits of the independent legislation method, such as transparency, administrative ease and simplicity, without giving rise to the problems discussed above. On the other hand, it may give rise to horizontal fiscal disparities, as revenues arise where economic activity occurs and incomes are generated. As discussed above, if a comparable amount of local public services must be offered by the different jurisdictions and hence financed, it may then require a grant system to reach fiscal equalization. Furthermore, it may enhance the vertical externalities problem we referred to above, given *the interdipendence of taxing decisions when different levels of government tax the same base. […] What is certain is that such spillovers make it highly unlikely that the right level of taxation and expenditure will be found in any jurisdiction* (Bird [1999], p. 32). Problems arise also with regard to the attribution of tax base to (the use of formulas to divide tax base among) sub-national jurisdictions, as it is often difficult to decide where a given income is generated. For instance, in the case of corporate income taxes the revenue is often attributed to the different jurisdictions according to some appropriation formula. These formulas, in turn, are usually not water-proof with respect to strategic behaviour of jurisdictions.

Finally, tax sharing may assume two different forms. Sub-national governments are entitled to a fraction of particular tax revenues arising in their jurisdiction or to a given percentage of nation-wide tax receipts. This third method of tax assignment has some of the same merits as tax surcharges, but sub-national governments have very limited fiscal autonomy, as they do not directly control the level of their own revenues. Furthermore, although there are methods to ease this problem[15], tax sharing makes the revenues of one level of government depending on the choices taken by another level of government; say, decisions by the centre about the tax bases or the tax rates of national taxes immediately impact on the receipts of lower level of governments. Hence, tax sharing is often more precisely considered a particular form of grant or subvention than a method of tax assignment[16]. Under wholly tax sharing rules, local jurisdictions' fiscal autonomy is restricted to spending autonomy - decisions on how to spend a given amount of revenues - and sub-national governments have not marginal source of own revenues.

As we argued in the Introduction, tax assignments methods should not be considered in isolation from the other sources of funding for local governments. Indeed, Table 3 (section 2) demonstrates that grants and transfers represent an important source of revenue for sub-national governments in most developed countries, with the ratio of intergovernmental grants over total sub-national revenues which varies considerably from country to country in a range from 15-20% to 70-

[15] For instance, tax sharing may be computed in terms of a percentage of the *tax base* of the national tax rather than in terms of a percentage of the *tax revenue* of the same tax. This isolates local governments' resources from discretionary decisions taken at the center level about tax rates and tax allowances.

[16] Again, it is a matter of degree. The key issue here is how discretional are grants and tax sharing on political grounds. Tax sharing of national taxes whose percentage are established at the Constitutional level (as is the case, for instance, for VAT revenues in the German case) "insures" the local government against the risk of adverse decisions taken at the central level more than grants which can be decided discretionally at the national level. In this case, grants and tax sharing do not coincide, although it is still true that tax sharing does not offer tax autonomy at the local level.

80%[17]. Grant and transfer systems play several important roles: a) they offset both *horizontal* fiscal disparities (e.g. imbalance in the revenues at a given level of government, when fiscal capacity is not evenly distributed across sub-national jurisdictions) and *vertical* fiscal imbalances (e.g. imbalance in the revenues available to different levels of government); b) they may help to internalise spillover effects, that may arise when the inhabitants of adjacent jurisdictions can benefit from spending in another; c) they allow the centre to influence (through conditional grants, matching grants and similar transfers) the pattern of local expenditure, stimulating or forcing the local levels to use their resources in particular directions, deemed important at national level. However, they may also interact with the fiscal autonomy of the local governments and the exercise of their tax autonomy. Interregional distributive mechanisms, aimed to reduce fiscal capacity disparities, for instance, may have negative effects on the tax efforts of both rich and poor communities (e.g. Bordignon et als., [2001]).

To avoid this the literature advances some normative suggestions.

First, grants should not distort incentives. Grants should not penalize sub-national governments with higher fiscal capacity, introducing disincentives to collect tax revenue. *Ceteris paribus*, per capita transfers should not increase with lower tax ratios, that may be due to low effort of raising taxes. *To mitigate disincentives effects some countries, such as Italy, have reduced the equalisation component of transfer and grant arrangements, thus creating incentives for poorer jurisdictions to boost their own revenue capacity and tax effort* (OECD [2003], p. 154)).

Second, grants should provide infra-marginal funding for sub-national governments, in order not to affect their decisions (fiscal choice) at margin.

Third, grants should not undermine fiscal discipline and encourage fiscal deficits at sub-national level (own marginal revenues are necessary for effective decentralized control of spending).

Finally, an appropriate grant system should satisfy transparency, so that every jurisdiction is able to forecast its own revenues, and stability, so that sub-national governments are able to plan medium-term fiscal policy.

However, it is hard to find systems which satisfy all these requirements at once. Some trade-offs are likely to be unavoidable.

[17] And it would have been even larger if we had considered developing countries; see for instance Kraemer [1997].

6. Which taxes are best suited for different levels of governments?

Finally, the allocation of taxing power to sub-national governments raises the question of which are the best taxes to be attributed at local level, on efficiency and distributional grounds. In section 4 we hinted to several arguments which may induce to prefer a source of taxation with respect to another. Let us see these arguments more in detail here.

The traditional theory of fiscal federalism (Musgrave[1983]) suggests some guidelines in the field of sub-national taxation. Sub-national governments should impose *benefit taxes*, in the form of charges or quasi-charges to the beneficiaries, for the enjoyment of public services, on the assumption that local jurisdictions are mainly concerned with resources allocation functions. *Benefit taxation by sub-national governments does not distort the allocation of resources; indeed it contributes to an economic allocation of resources* (McLure [1999b]), so that an extensive use of user fees and charges, under which people pay for what they get, can help to promote efficiency. But there are two relevant obstacles for the implementation of benefit taxation, as the principal source of finance for local governments. First, public goods and services provided by local governments often produce *generalized benefits*, that cannot be closely related to taxes on beneficiaries. Second, in practise sub-national governments are often assigned redistributive functions and the latter cannot properly be financed by benefit taxes. Furthermore, user fees and charges might not provide sufficient resources to finance local public expenditure, especially in those countries where decentralization of functions proceeds rapidly. And indeed, as we have shown, in most OECD countries, sub-national governments rely on income and profit taxes as well as on consumption and property taxes. Which of them are best suited for sub-national governments? The answer is not straightforward. We start by listing some desirable features for sub-national taxation. Sub-national taxes should not distort resource allocation, should not produce tax exporting and predatory tax competition, should not produce vertical fiscal imbalance and horizontal fiscal imbalance, should be easily administered and enforced. Indeed, there exists any tax satisfying all these requirements?

Property taxes (on land and housing) are often considered one of the best sources of revenue for local jurisdictions and an appropriate instrument to provide sub-national governments with a real taxing power, for several reasons. No relevant problems arise from differences in rates and administrative practices across jurisdictions, the tax base being immobile; there are relatively few problems of tax fraud and avoidance; tax revenue is relatively stable and predictable. Tax exporting problems may however occur *to the extent its incidence is on land and capital that are owned by non residents* (McLure [1999a]). One demerit of property tax – at local as well as at national level - concerns the difficulty in determining the tax base, because of the difficulty in assessing land and housing value, with much room for discretion. Furthermore, because of limited liquidity problems, the elasticity of property tax revenue to nominal income increase appears everywhere poor (OECD [2003]).

As far as *income taxes* are concerned, personal income taxes are generally levied by central governments for redistribution and macroeconomic stabilization, but sub-national governments have access to revenues from these taxes, generally applying a surtax on the national income tax base, according to a residence principle (revenues are assigned to the residence jurisdictions). The attribution of personal income tax to sub-national jurisdictions can also be justified on a benefit base, if one thinks that local public services are used especially by resident households (education for children, social services, health care); in this sense, sub-national personal income taxes are related to generalized benefits of public services and should be imposed at a flat rate. Furthermore, income tax are often highly visible for taxpayers and hence may promote accountability. Two problems however should be stressed.

First, generally the income tax base is not evenly distributed across jurisdictions and poorer jurisdictions might not be able to rise sufficient revenues for financing a minimum standard of public services. This makes the case for equalization schemes, but of course the latter usually do not allow for the exercise of autonomy on the revenue side, thus leaving the poorer jurisdictions however worse off (see the discussion above).

Second, in the presence of different local tax rates, if individuals (and incomes) are relatively mobile across jurisdictions, distortions may occur. For example, individuals may be stimulated to change their formal place of residence or move altogether to avoid the communities with higher tax rates. Notice further that it is very unlikely that this induced tax mobility would satisfy a Tiebout type of efficient allocation, as many assumptions behind the Tiebout efficient equilibrium are not satisfied in practice. Thus, local personal income tax may have undesirable spillover effects.

Finally, when more than one level of government levy the personal income tax, some inefficiency may occur, as each government has no incentives to internalise the choice made by the other government (a vertical tax competition issue). For example, in the case of the Scandinavian countries, where personal income taxes are important sources of sub-national revenue, the OECD [2003] provides evidence that this may have induced tax rates to rise at inefficiently high levels, with negative effects on labour supply decisions.

Profit taxes (corporate income tax or enterprises income tax) are not considered a good source of revenues for sub-national governments. First, if production is relatively mobile, local profit taxes, applied at different rates, are likely to distort the location of economic activity, so distorting resource allocation. They might be levied at local level only if investment is specific to the locality such that a firm cannot easily relocate (Feld and Schneider [2001]) but this is an infrequent case. Second, sub-national profit taxes present the same problems that arise in an international setting, administrative difficulties, possibility of tax exporting, difficulty in the determination of the geographic source of corporate income. In fact, in the case of enterprises operating in more than one jurisdiction, it is necessary to divide the base of the enterprise income tax among the sub-national jurisdictions where income is earned, often arbitrarily. In addition, corporate income tax revenue is subject to cyclical fluctuations and is not a stable source of revenue.

As far as *consumption taxes* are concerned, excises are well suited for sub-national governments. They are easily administered at local level and minimize distortionary effects, if applied according to the destination principle (attribution of the revenue to the jurisdiction where consumption occurs). But if levied at different rates in different jurisdictions, abuses may occur, as it may be relatively easy to buy and pay the tax in a low tax rate jurisdiction and transport the products to a high rate jurisdiction. The relevance of the problem is of course empirical, as it depends on the costs involved in this "cross-border" shopping behaviour. Excises are also suitable for the implementation of the benefit principle when they are benefit-related, such as excises on tobacco products and alcoholic beverages, that could be used to finance health care, or taxes on motor vehicles and motor fuel, used to finance the construction and maintenance of roads[18]. But, as for user fees and charges, excises might not provide sufficient resources to finance local public expenditure: *[…]Indeed, although it is true that in countries such as the United States and Canada a significant proportion of state revenue comes from excises, it does not seem particularly desirable to tie state finances in any substantial way to such inelastic levies when the pressure on those finances for the most part come from very elastic expenditure demands for health and education* (Bird [2000]).

General consumption and sales taxes might be a good source of revenue for local governments. The Value added tax is one of most important source of revenue in all developed countries (only USA do not make use of VAT) and many countries use shares of VAT revenue as a financing tool for local governments (see section 1). However, in the vast majority of countries the VAT is applied only by the central government, who has the power to set up tax bases and tax rates. The role of local governments is limited in sharing some of the proceedings of the Vat. This fits well with conventional wisdom, which has that the value-added tax is not a suitable instrument

[18] For a detailed analysis of vehicle-related taxes at sub-national level, see Bird [2000].

for lower-level jurisdictions in a federal system (Keen [2000]). Most authors think in fact that VAT is a bad own tax for sub-national governments, for many reasons: the effects on trade between different jurisdictions, problems of tax fraud if applied according to the destination principle, problems of tax exporting and transfer pricing if applied according to the origin principle, high administrative and compliance costs, problems of compliance asymmetry (the obligations on tax payers should be the same wherever in the federation they sell), etc..

However, there is an increasing literature which challenges this conventional wisdom, arguing that, by suitably re-organizing the VAT system, this may in fact provide an excellent autonomous source for local taxation. Bird and Gendron [1998] for instance suggest that central and local levels of government could maintain independent VATs, by simply harmonizing bases and to some extent rates. The VAT could become a joint central-local tax, administered by either level of government on a jointly determined base but with each government choosing its own tax rate (this is known as the Dual Vat system). In the same vein, other, more sophisticated, proposals have been recently advanced for decentralizing the VAT system, mainly the VIVAT system (viable integrated VAT, advanced by Keen and Smith) and the CVAT (compensating VAT, proposed by Varsano and developed by Mc Lure). The VIVAT mechanism, originally proposed by Keen and Smith [1996] for eliminating enforcement and tax rate setting problems within the European Union, could well be extended to finance local jurisdictions. Under the VIVAT system, a distinction is made between sales to registered traders and sales to households and unregistered traders. The VIVAT would apply to all sales to registered traders at a uniform Union (or national) wide rate; national (or local) different VAT rates would instead apply to sales to households and unregistered traders.

The CVAT system was originally proposed for developing countries, such as Brazil and India, in which there is a significant federal tax presence. Under the CVAT system, sales to local purchasers (registered traders, households and unregistered traders) would be subject to the local VAT, but sales to purchasers in other jurisdictions would be zero rated for state VAT and subject instead to a compensating VAT. Credit would be allowed for tax on purchases by registered traders, for the local VAT on intrastate purchases and for the CVAT on interstate purchases.

Merits and demerits of the three alternative schemes are illustrated in Table 9, with respect to the more relevant issues. Tax rate setting autonomy is fully preserved only under the dual VAT system; under the VIVAT scheme, the tax rate applied to intermediate transactions is uniform and set by the central government, but VAT rates applied to sales at retail stage are under the control of local jurisdictions; also under CVAT inter-jurisdictional exports are taxed at a rate that is out of jurisdiction control. As far as compliance cost symmetry is concerned, this is guaranteed only by the VIVAT, since uniform procedures are applied to transactions within and between local jurisdictions, through the application of the same tax rate to all sales to registered traders whether or not they cross internal borders of local jurisdictions. So traders do not need to distinguish between their customers according to where they are located, and this is *[…] important precisely in order to get away from geography –based distinctions that are increasingly meaningless* (Keen and Smith[2000]). On the other hand, the VIVAT presents the disadvantage that it would require to distinguish between sales to registered traders and sales to final consumers, since they would be taxed differently. This imposes additional compliance costs on business and additional administrative costs on tax authorities, which should account separately for these two categories of sales. On the contrary dual VAT appears to be superior to either CVAT or VIVAT in terms of administrative costs and simplicity, since it does not impose additional costs with respect to inter-jurisdictional trade.

Table 9 – Merits and demerits of dual VAT, CVAT and VIVAT*

	Dual VAT	CVAT	VIVAT
Rate autonomy	Yes	Some	Some
Central rate setting	No	Some	Some
Collection incentive	Some	?	?
Compliance symmetry	No	No	Yes
Identify destination state	No	No	Yes
Administrative cost	Low	Higher	Highest?
Distinguish types of purchasers	No	Yes	Yes
Credit tracking	No	No	Yes
Excess credit	Few	Some	Yes
Nedeed administrative capacity	High	Low	High
Central agency	Yes	Yes	No

***Source:** Bird, R. M., Gendron P. (2000), CVAT, VIVAT, and Dual VAT: Vertical “Sharing” and Interstate Trade, *International Tax and Public Finance*, p. 9

Another relevant issue concerns collection incentives and clearing. Both CVAT and VIVAT would require that tax levied on exports from one jurisdiction be credited/refunded against tax due in another. There is therefore the need to introduce a *clearing* system, ensuring that revenue collected on exports from one jurisdiction is available to finance credit/refunds claimed in another. These incentive problems might be resolved by internalising the transfers within a single administration, that collects the tax and pays for the rebate[19]. In conclusion, both systems would

[19] Under CVAT, the central authorities would collect the CVAT on inter-jurisdictional sales and credit it against central output tax liabilities; if central tax exceeds CVAT paid on inputs, the central authorities would provide refunds. Under VIVAT, incentive problems might be internalized by entrusting the administration of the intermediate rate to central

require the presence of an over-arching administration to guarantee appropriate clearing and do not distort collection incentives.

Finally, a reference should also be made to Bird [1999] who proposes to replace the various unsatisfactory state and local taxes imposed on business by a *local low-rate value-added tax levied on the basis of income* (production, origin) rather than consumption (destination). According to Bird, such a tax (BVT, business value tax) would be less distorting than sub-national profits and capital taxes, more neutral (on the investment as well as on consumption) and more stable than the usual corporation income tax. Any problems which might occur with the BVT, such as for example tax competition or tax exporting, may be eased by appropriately setting floor and ceilings for the local tax rates. And indeed, Bird mentions the examples of some countries, such as Germany and Italy, which have introduced forms of BVT (respectively, *local trade tax* - Gewerbesteuer and *regional business tax* – IRAP) in their tax systems, in order to provide sub-national governments with own additional revenues to finance local public expenditure.

7. Who should enforce local taxation?

The final point of our excursus on local taxation concerns the issue of administration. Who should be in charge of administering and enforcing (local) taxation, the central and local level? As usual, the literature does not provide clear-cut responses to this question (Ebel and Taliercio [2004]); still, it may be worth to survey briefly the major merits and demerits of the centralized and decentralized models of tax administration.

As far as *efficiency* is concerned, the primary objective of the tax administration is to collect revenues at lowest possible costs. On these grounds, most literature suggests to assign the function of tax administration to central government, because of the *existence of economies of scale*[20] *and scope, through which tax collection costs are minimized*[21]. Furthermore, a centralized tax administration may provide some other advantages (Mikesell [2003]):

- a centralized tax administration may reduce *taxpayers compliance costs*, since it provides a single structure for dealing with all taxpayers throughout the country, and all taxpayers will be

authorities, all tax charged to registered traders would be paid to, and registered traders would claim all their credits and refunds from, the central authority.

[20] *The available evidence from government budgetary information clearly indicates that the budget cost of collecting individual income, business income and sales taxes is generally in excess of 1 percent of the revenues from these taxes, and can sometimes be substantially higher* (Alm [1999], p.17).

[21] *The question is whether the potential greater cost efficiency of a centralized approach to tax administration actually holds in reality. Unfortunately, there has been little empirical research on cost efficiency and economies of scale in tax administration, and there are practically no studies that have compared directly centralized and decentralized approach* (Abel and Taliercio [2005], p.7).

subject to exactly the same administrative rules and procedures; it also eliminates the possibility that the taxpayer will be confused about what tax organization is responsible for answering questions, receiving filings, enforcement;

- a centralized tax administration can help to reduce incentive to corruption, because of the larger possibility of rotation of personnel and the ability to pay higher salaries[22];
- a central tax administration may afford more qualified personnel, allow personnel to specialize to a degree which is not feasible with smaller administrative units, and have budgets that permit the use of more sophisticated information technology;
- finally, a national tax administration can be better equipped, legally and in terms of resources, to deal with national and global business entities and with taxable activities that cross regional or local jurisdiction boundaries within the nation.

What are the arguments instead in favour of decentralized tax administration and enforcement?

They are several. Decentralizing tax collection and enforcement functions may help to enhance local government autonomy. Since the level of enforcement activity affects the level of taxes collected, a sub-national government that had control over enforcement activities would be able to increase own revenues at the margin (Ebel and Taliercio [2004]). Furthermore, a decentralized administration may contribute to enhance tax transparency and the accountability of sub-national governments officials to their constituencies. When tax administration of local taxes is decentralized, taxpayers know which government is levying what taxes and hold the appropriate governments accountable. In contrast, transparency can be lost when a central authority administers the tax levied by a lower level of government (Martinez-Vazquez and Timofeev [2005]).

But perhaps the most relevant issue concerns the design of the organizational structure of tax administration and the incentives that it provides to tax officials. The question is whether a national administration would have the same incentives to collect local taxes than a local one. As Mikesell puts it: *When higher governments … administer* (local) *taxes, there is the danger that administrators will give collection and enforcement of lower tier taxes less attention and lower priority than taxes levied by the higher tier.* (Mikesell [2003], p.9). In other words, local governments may have more forceful incentives to collect their own taxes than national officials[23]. On the other hand, if, for the reasons already stressed, local administration is likely to be less

[22] But duplicate enforcement may provide a check against omissions when central and subnational administrations exchange information and may make corruption more difficult because two sets of enforcement officials must be paid off.

[23] Fees, i.e. allowing the national government to retain a portion of the lower tier tax it administers, may ease the problem, but are unlikely to solve it. See Martinez-Vazquez and Timofeev 2005] for a discussion.

competent than central administration, the choice between national and local enforcement of local taxation is in reality a choice *between indifference and incompetence* (Dillinger (1991).

Of course, how these contrasting incentives can be composed in practise depends very much on the tax under consideration, and in particular on the type and the complexity of the tax structure. For instance, individual income taxes, corporate income taxes, value-added taxes and social security contributions are perhaps better administrated at central level, because of information externalities, cost structures, high skill levels required. On the other hand, property taxes or user charges may be efficiently administered al local level.

Finally, in assessing the case for local tax administration and enforcement, one should also consider the more general funding system of the local governments, as this may affect their incentives for tax enforcement. This is a point which we have raised several times in this work, but which is worth to repeat again here. In the presence of inter-jurisdictional redistribution mechanisms, for instance, local jurisdictions may have less incentives to collect taxes, as part of this revenues would be attributed to other jurisdictions or may reduce the grants received by the centre[24]. In general, one should expect that the incentives to collect local taxes to be the higher, the higher the degree of fiscal autonomy of the local government.

Summing up, there is no, nor there should be, a clear-cut recipe. The assignment of tax administration powers requires a fine balance among many conflicting criteria, and the recognition of several forms of constraints and political economy issues, in particular the alignment of the incentives of tax authorities with those of the government . These criteria and constraints may balance differently in different countries or regions, and with respect to different taxes (Martinez-Vazquez and Timofeev [2005]).

8. Concluding remarks

It might be useful to close this work by collecting some of the general themes raised in this survey. First, there is clearly a gap, which need to be filled, between theory and facts. The normative approach, in both of its versions, is clearly at odds with what we observe around the world, concerning both the expenditure and the revenue side of local governments budget. The more positively oriented approach, with its attempt to endogenize the effective political and

[24] Bordignon, Manasse and Tabellini (2001) models it in the terms of an asymmetric information problem. If tax enforcement is attributed at the local level and at the same time there is an equalization mechanism in place, local jurisdictions may have an incentives to hide their true fiscal capacity, by reducing the effort level in collecting taxes.

administrative constraints which policy makers face in setting up local taxation, is more promising, but we are still very far from having a satisfactory understanding of local taxation institutions and mechanisms.

A second theme which has been stressed in this survey, and which also may help in reconciling theory and evidence, is that the issue of local taxation should not addressed in isolation. It doesn't make much sense to discuss local taxation, without considering which kind of expenditure local tax revenue is supposed to finance and how the local tax system is located within the more general funding system of the local government. Grants and transfer mechanisms, as well as debt regulations, might interfere with the incentives local governments face in setting up tax rates, tax bases and tax enforcement. These features should be taken explicitly into account in the analysis, and they might then help us understanding real world facts which would be otherwise very difficult to explain.

A third theme of this survey concerns our understanding of the role and the characteristics of local taxation. Rather than contrasting the opposite views, we have argued that starting from first principles may be an useful exercise to try to set up this role and that useful insights might come up from this attempt. In particular, we have argued that there would be a role for local taxation even in a highly abstract world of identical regions and immobile and identical citizens, and that this role could only be enhanced by the presence of differences in local preferences and by the consideration of dynamic issues and commitment problems. Mobility, at least above a certain threshold, and inequality in resource endowments across territories, should instead be considered more correctly as constraints to be taken into account in the choices of the kind of tax resources which should be offered at local level. In particular, the recent literature, concerned with issues of accountability of local governments, certainly stresses more than in the past the role that transparency, visibility and autonomy should play in the setting up of local taxation and local tax enforcement.

Finally, we have also attempted to offer a review of the main tools which could be used to build up a local tax system, discussing the *form* that local taxation could take (own taxes, surcharges and tax shares), the *source* of tax base which could be used for local financing, (wealth, income, consumption, value added) and the issue of the *optimal tax assignment* of responsibility for tax administration and tax enforcement of local taxation. This part does not provide, nor should it be expected to do, ready-to-make recipes for establishing local taxation; it is mainly a list of the several trade-offs which are unavoidable linked with any options. Furthermore, this part is burdened by the almost complete lack of convincing empirical evidence, both in the terms of case studies and in terms of cross-countries analysis. We have arguments and counter-arguments, but very little empirical bases for establishing which is the right one. Still, some general themes do emerge from this part of the survey. First, the most recent literature has finally come at the recognition that benefit taxation, although still an important component of local tax instruments, can only have a limited role in local taxation. Given what local governments actually do, and the administrative difficulty of setting up benefit taxation, other tax sources should also be considered for local taxation. In particular, there is a renewed interest in the literature for attempts to decentralize the VAT system, allowing tax rate autonomy at the local level for at least some component of the tax base, and for attempts to establish a local value-added business tax, raised at the production level on a larger base than profits only (as in the case of the Italian IRAP). Second, the debate on tax enforcement has finally left the traditional opposition (increasing returns to scale for central administration versus enhancing of local autonomy for the local one) to focus on the analysis of incentives that the different systems may provide to local governments and tax officials in collecting and enforcing local taxation. Here, again, the role of other funding mechanisms (grant system) in affecting these incentives should be emphasised.

In conclusion, if this survey does not offer clear-cut recipes, it offers a lot of food for thought. We hope the reader will find it useful.

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