



IEB's World Report • 1 0 on Fiscal Federalism







IEB's World Report $_{ m on\ Fiscal\ Federalism}$









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Editorial

This year the IEB is publishing its second World Report on Fiscal Federalism. The editors of the report are the IEB researchers and University of Barcelona professors Núria Bosch and Albert Solé-Ollé. The report is published on an annual basis and includes contributions from expert authors in the field both from the IEB and from other universities, research centres, government bodies and agencies in Spain and abroad. The purpose of the report is to contribute to the debate on the design of multi-level governments by bringing together academic analysis and policy-making expertise.

Each year, the report is built around a central theme, chosen on the grounds of its policy relevance. Contributions on this theme are commissioned from internationally renowned experts and included in the Forum section. The main theme of this year's report is the financing of local governments. Local governments are the public administrations closest to citizens; they are the first place citizens go to request public services and they are the administrations that know citizens' preferences best. The consequence is that local governments often provide services which they are not legally obliged to offer. The resulting increase in expenditure needs, especially in times of crisis, is not always covered by suitable financial systems. Local governments are the lowest level of administration and they sometimes lack sufficient fiscal flexibility and financial tools to adapt to this changing situation. The aim of this report is to analyse the fiscal and financial issues faced by local governments.

This year the first commissioned contribution is by Richard Bird (University of Toronto) who writes about trends in the latest reforms in local financing. The contribution by Enid Slack (also from the University of Toronto) discusses the role of residential and non-residential property taxes in theory and practice. The third contribution is by Lars-Erik Borge, who discusses the role of equalization grants to state and local governments under the principles of equity and efficiency. In the fourth contribution analyses the earmarking of grants to sub-national governments. The last contribution is by Bernard Dafflon who describes institutional restrictions on borrowing (rules of balance and for local borrowing, accounting requirements, administrative control) and the consequences of excessive debt and sanctions (bailout, sanctions, sustainability).

The second section of the report is called Around the world, and includes several shorter contributions on the situation of subcentral public finances and fiscal federalism reforms in different countries. The first paper, written by Luiz de Mello (OECD), discusses the main trends and challenges of local government finance in Europe. The second, by Teresa Palmer (University of Illes Balears), focuses on the different kinds of tourism taxes and the reasons for applying them. The third contribution, by Leo Rizzo (IEB and University of Ferrara) and Alberto Zanardi (University of Bologna and Econpubblica-Bocconi University) describes the

2009 reform of Italian local finance. Finally, in the last paper on road pricing and city tolls, Federico Boffa (University of Macerata) and Amedeo Piolatto (IEB and University of Barcelona) review the economics behind road pricing and provide an assessment of some road pricing experiences.

The third section of the report (Research report), includes nontechnical summaries of research projects funded by the IEB or undertaken by IEB researchers themselves. The section presents the results of the IEB's research on fiscal federalism to a nonspecialist audience. Marius Brülhart (University of Lausanne) and Kurt Schmidheiny (Pompeu Fabra University) point out a new way to identify the degree of "rivalness" of local policies designed to attract economic activities. Federico Revelli (University of Torino) investigates how state-wide revenue raising limitation rules shape local governments' budget constraints. Helmuth Cremer and Catarina Goulão (Toulouse School of Economics) analyse the sustainability of more redistributive insurance systems in a context of labour mobility. The last contribution in this section, by Peter Egger (ETH Zurich), Marko Koethenbuerger (University of Copenhagen) and Michael Smart (University of Toronto), empirically analyses the extent to which the incentive effects of fiscal equalization depend on the electoral rules under which politicians are elected.

The report concludes with the Review section, where the latest books published on topics related to fiscal federalism are reviewed.

The editors and the IEB team hope that the 'IEB's World Report on Fiscal Federalism' will be of interest to the many scholars and practitioners working in the field of fiscal federalism and will serve to stimulate debate on multi-level governance.

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Local Government Finance: Trends and Questions¹

Richard M. Bird University of Toronto

I. Introduction

Seen from a great height —a 'bird's eye view', if you will— how local governments are financed may appear to be a rather small and unimportant issue, one that is easily lost from sight amidst the swirling clouds of international financial crises and the headline-claiming activities of national politicians and governments. Viewed from street level, however, down where people actually live, few aspects of the public sector have a more direct and tangible effect on the daily life of citizens than the level and quality of local public services —and both the level and quality of such services are, arguably, dependent to a considerable extent upon how they are financed.

For the last two decades or so, 'decentralization' in some form or other seems to have been in the air almost everywhere. International institutions have produced numerous reports on decentralization, academics have held conferences and written many books and papers on the subject, and politicians in many countries around the world have made endless speeches about it. But has all this talk led to much change in the local finance scene?

The first section of this paper takes a quick and inevitably superficial review of the (unsatisfactory) data on local finance around the world and suggests that, when viewed from on high, there do not appear to be any great universal or even regional trends in local government

finance. On the other hand, if one swoops a bit lower and looks at individual countries, it does appear that there are sometimes clear country-specific trends. Moreover, to a lesser extent some trends may also sometimes be discerned in countries linked by history (such as the former French and British colonies in Africa or those central and eastern European countries formerly part of the Soviet bloc) and/or by geography and language as in the Nordic countries and some other regional groups.

"Sub-national governments are much more important as both taxers and spenders in rich countries than in poor countries"

Since in many ways taxonomy is a critical step in organizing knowledge, the second section of the paper then considers briefly the question of whether how one chooses to 'cluster' country experience may not only reflect the questions one is pursuing but also affect the answers one reaches. Finally, against this background, the final, and most speculative, section of the paper suggests that considering country experiences (and the literature) in terms of the differing normative 'models' ('frameworks') of local government finance that appear to prevail in the literature and to varying extents in different countries may offer a helpful approach to disentangling what has, and has not, been going on when it comes to fiscal decentralization around the world.

2. Are There Any Trends in Local Finance?

As already mentioned, there has been much talk about fiscal decentralization around the world in recent decades. However, it is not so clear that all that much has happened in reality. For example, Bahl and Wallace (2005, 91) conclude that, for countries for which data are available in the IMF's GFS data base, the sub-national government share of both total government expenditure and taxation at the beginning of this century had hardly changed since the 1970s. At the beginning of the 21st century, as had been the case also three decades earlier, regional and local governments combined accounted for only about 11% of taxes and 13% of expenditures in developing countries. Although the comparable figures for OECD countries are higher, at about 18% of taxes and 33% of expenditures, these ratios too did not change perceptibly over this period. The only clear conclusions emerging from this 'high-level' look at the world are two:

First, sub-national governments are much more important as both taxers and spenders in rich countries than in poor countries.

¹ An earlier version of this paper was presented at the 6th Symposium on Fiscal Federalism: Financing Local Governments, Barcelona, June 14-15, 2010.

Second, transfers are a far more important source of sub-national revenues in rich countries —where, on average, they finance over half of sub-national expenditures— than in poor countries, where they amount to less than a fifth of expenditures.

At first glance, these results may seem surprising. For example, Bahl and Wallace (2005, 93) themselves confirm numerous earlier studies when they find in exploring the determinants of cross-country variations in the expenditure decentralization ratio that higher income levels are significantly associated with greater decentralization. Nonetheless, during a period in which world income levels roughly doubled in both rich and poor countries, neither the tax nor the expenditure decentralization ratio seems not to have been swept upward by rising incomes. Instead, these ratios seem almost to be set in stone. Rising incomes, increasing urbanization, rising expectations and, in many countries, expanding democratization (or at least increased social mobilization)—despite all the rhetoric and concern about decentralization, none of these factors have resulted in more than a very small twitch in the decentralization ratios.

"Transfers are a far more important source of sub-national revenues in rich countries, where, on average, they finance over half of the sub-national expenditure. In poor countries, this figure amounts to less than a fifth"

Of course, the data on which this conclusion is based are far from satisfactory, as indeed Bahl and Wallace (2005) clearly recognize.³ Even the more comprehensive and comparable data recently assembled for sub-central governments in OECD countries, however, although available in detail only for recent years, shows a similar lack of exciting trends. From 1995 to 2005, for instance, on average the sub-central share of total revenue in OECD countries remained stable at around 17% although there was a small but significant increase in the expenditure ratio from 31% to 33% over the period (Blochiger and Petzold, 2009, 2). Of course, such (unweighted) average figures conceal both critical details and considerable country-to-country variation. On the expenditure

² According to the World Bank database (available at http://data.worldbank.org/data-catalog), per capita GDP (in constant 2000 \$US) between 1970 and 2000 rose by 199% in 'rich' countries and by a smaller, but still respectable, 186% in 'low and middle income' countries.

side, for example, while the share of sub-central expenditures in total government expenditure rose by over 15% in Spain and by almost 10% in a few other countries (Czech Republic, Denmark, Finland and Italy) over the decade after 1995, it fell by 10% in Japan and by even more in Ireland (Blochliger and Petzold, 2009, 29). On the revenue side, changes in the composition of revenues were equally varied from country to country, with Spain again leading the way in terms of the growth of sub-central taxes as a share of total taxes (over 15% again), and Australia, Italy, and the Slovak Republic recording increases of over 5% in tax decentralization. In contrast, the tax decentralization ratio declined by over 5% in Norway, Turkey and also declined in seven other countries —including Canada (Blochiger and Petzold, 2009, 31).

As other OECD work clearly shows, however, one must be particularly careful in interpreting revenue decentralization ratios. Traditionally the local share of central taxes has been defined as sub-central tax revenue in OECD data, although from most relevant perspectives the revenues received by sub-central governments from 'tax sharing' are essentially equivalent to transfers and are hence not local 'own' taxes in any meaningful sense (Blochliger and Rabesone, 2009). In both Spain and Australia, for example, the big changes in the tax decentralization ratio mentioned above reflected discrete major changes in tax sharing during the period (Charbit 2009, 13-14). In the case of Australia, if the transfer of GST revenues to the states in 2000 is understood, as it should be, as a realignment of the way in which federal equalization transfers are financed rather than any kind of extension of state taxing power, then instead of Australia's tax decentralization ratio increasing from 1995 to 2005 it actually decreased slightly (Blochliger and Rabesone, 2009, 7). On the other hand, since Spain really did devolve some limited taxing power —though not on rates— to its Autonomous Communities when regional government financing was renegotiated in 2001, the tax decentralization ratio may more legitimately be considered to have increased in that country.

Depending on the approach one takes and the data, years, and countries one examines, one may sometimes reach a more positive conclusion than this. For example, Martinez-Vazquez and Timofeev (2009) conclude that there has been a world trend towards fiscal decentralization at least during the last two decades. More generally, however, without in any way criticizing their careful study, an admittedly considerably less rigorous consideration of a large number of detailed country studies suggests that perhaps the most striking conclusion one can draw from the evidence is not how similarly different countries in the world (or even any one region of the world) have acted in terms of decentralization, but rather how different they are —and are likely to remain.⁴

³ Many empirical studies have been devoted to exploring the relationship between political federalism and fiscal decentralization. However, as Blume and Voigt (2008) show, the empirical measures used in most such studies capture only very specific aspects of the relevant institutional details and not necessarily the most important ones. Moreover, as Stegarescu (2004) demonstrates, the basic measures used in such studies can (and have) changed substantially in particular countries from year to year.

⁴ See, for example, the wide variety of country case studies contained in the following sources: Bird, Ebel and Wallich (1995), Ter-Minassian (1997), Bird and Vaillancourt (1998), Rodden, Eskeland and Litvack (2003), World Bank (2005), Shah (2006), Bardhan and Mookherjee (2006), Smoke, Gomez and Peterson (2006), Wallack and Srinivasan (2006), Bird and Ebel (2007), and Martinez-Vazquez and Vaillancourt (2010).

To this point neither the data cited nor the discussion have distinguished local from regional finances. In the OECD, state or regional finances dominate in the federal (or effectively federal) countries - Canada, Australia, Belgium, Switzerland, Spain, Germany, the United States, Mexico, and Belgium. On the other hand, local finances are much more important in a number of Nordic countries (Denmark, Sweden, Norway, and Finland), as well as in Japan, Korea, Italy and several new 'accession' countries such as the Czech and Slovak Republics and Poland (Blochliger and Petzold, 2009, 31). This observation may point to one way in which we can perhaps begin to sort out what is going on, or not going on, out there in the complex and largely unknown world of local government finance -namely, not by looking so much at different income levels and regional factors as generic determinants of institutional structures and outcomes but more at the specifics of each particular country. The next section considers this point at a bit more length.

First, however, it may be useful to consider briefly whether there may be 'trends' in local finance in particular countries even if such trends may be very different than those seen in other countries. The answer is definitely yes. Not only are there are trends in local finance in particular countries, there may also sometimes be cycles. Over Canada's first century, for example, the balance of power in public sector finances first shifted to some extent from the provinces to the municipalities, then back to the provinces and then clearly to the federal government (Bird, 1970, 1979). Since the 1970s, however, the provinces have again been clearly on the rise both in terms of expenditure and to a lesser extent, of taxes (Bird and Vaillancourt, 2006). A somewhat similar tale may be told in the United States (Wallis, 2000). On the other hand, unlike the case in some US states, local governments in Canada have never again come even close to the importance they had in relative terms a century ago; they remain very much at the complete mercy of the provinces (Bird and Slack, 1993). Still staying on the western side of the Atlantic, a somewhat similar evolutionary tale, but with interesting twists, can be told about much of Latin America, where the break-up of the much more centralized Spanish empire (Centeno, 2002) resulted in the emergence of much more centralized public sectors than in North America (Sokoloff and Zolt, 2005) —even in those countries that adopted formally federal constitutions (Diaz-Cayeros, 2006).

How the public sector becomes institutionalized and subsequently develops in any country reflects the shifting balance of ideas, interests, and institutions over time. Some factors, such as the ideological frameworks within which people view the meaning and relative importance of such notions as equity and fairness, efficiency, and growth, are not inherently 'national' in any meaningful sense. Indeed, ideas on such matters to a considerable extent may be thought of as 'public knowledge'—at least among policy elites—and may hence influence policy in several countries or regions at once, either simultaneously (or consecutively via a kind of 'demonstration effect').

"The nature of the political and administrative institutions in place is often particularly important in determining outcomes"

Much the same is true with respect to the changing roles played in the political process by such economic and social interests as capital and labor, different regions within a country (centre vs. periphery, urban vs. rural, resource-rich vs. resource-poor, or simply rich vs. poor, as well as different ethnic or linguistic groups and the extent to which they are regionally concentrated). The expansion of world trade, for example, may lead to changes in political power in a number of countries as some interests become stronger and others weaken, and such changes may be reflected to some extent in the relative importance of different levels of government. Exposure to similar influences, however, whether from intellectual or economic forces, need not and indeed usually will not lead to the same policy outcomes in all countries.

One reason outcomes may differ is because the initial conditions prevailing in different countries exposed to similar shocks may be different, with the result that both the level and nature of their policy responses will differ as will the consequences in terms of such measures as the public sector decentralization ratios discussed earlier.⁶

An aspect of these initial conditions that is often particularly important in determining outcomes is the nature of the political and administrative institutions that are in place. At any point in time, countries can and do differ substantially with respect to such key political institutions as the extent of democracy, the prevailing constitution (and its rigidity), the nature of their political systems (party structure, parliamentary or presidential, etc.), and the degree and nature of public sector decentralization in place, as well as the manner in which these various institutions interact in the formulation and implementation of tax and spending policy. Even if all countries in a region are exposed to a uniform shock, uniform results are hence most unlikely to emerge from the always boiling policy cauldron, with its different mixes of ingredients in each country. For example, Sokoloff and Zolt (2005) suggest that the greater initial political and economic decentralization of the English colonies in the Americas compared to the Spanish colonies may well have been a key factor in determining the better long-term economic performance of the former.

⁵ For further exploration of some of the implications of this line of thinking, see e.g. Bird and Ebel (2007) and Bird, Vaillancourt and Roy-Cesar (2009).

⁶ Consider the striking difference in the 'transition paths' followed by the countries of central and eastern Europe towards decentralization following the break-up of the Soviet empire (Svejnar, 2002). In most respects, these countries started with a similar institutional setup (Kornai, 1992), but it quickly became apparent that they were decentralizing, to the extent they were, in very different ways indeed (Bird, Ebel and Wallich 1995).

"The level of public sector decentralization, and the particular form that it takes over time, are best understood as resulting from a set of complex and interdependent policy decisions in a real environment and historical period"

The point of mentioning such issues is of course not to imply that all countries can or should follow the same evolutionary path. Even less is it that everyone can or should follow the North American —or French, or Chinese— path in any particular respect. Indeed, as noted later, countries almost certainly should not simply imitate others when it comes to how they approach such key policy issues as fiscal decentralization. All that these few remarks are intended to suggest is simply that the level of public sector decentralization found in any country, let alone the particular form that decentralization takes over time, as manifested for instance in the rise or decline of local fiscal autonomy, is best understood as resulting from a set of complex and interdependent policy decisions that occurred in a particular real environment in real historical time. History, by definition, takes time, and changes in historically-shaped policy outcomes are also unlikely to occur either quickly or universally.

Viewed from this perspective, it is not surprising that there appear to be few if any significant trends in local finance around the world or even in particular regions. During World War II, for example, most of the now rich countries attained previously unachieved levels of both public sector expansion and public sector centralization.8 Although the public sector in most of these countries for some years remained big and centralized, few grew much after the early 1970s (the end of les trentes glorieuses) and most but not all rich countries appear to have become a bit less centralized over time to varying extents and in very different ways, as shaped both by their history and their situations. Smoke and Gomez (2006) similarly stress the diversity of both the design and the outcome of decentralization in the regions (Asia and Latin America) that they examine. Indeed, a portmanteau quotation from their interesting paper provides an appropriate end to the brief overview of trends in local finance in the present section, as follows:

"...contextually determined political dynamics, whatever specific features shape them, are key drivers of decentralization, and... historically based institutions and conditions heavily influence how decentralization unfolds....we have only a limited understanding of the specific forces that shape the pace and regularity of the process and how these affect decentralization policies and outcomes (p.362)....there is much more work to be done on understanding the historical path-dependent nature of the decentralization process. Specifically, it would be worthwhile to explore more formally the institutional mechanisms that represent and sustain the national and subnational political interests that ultimately define decentralization (p. 363)....The study of decentralization is deeply fractured across disciplinary lines, yet it is clear that key elements have to come together for decentralization to work properly. (p. 364)".

To put this another way, since no one ever fully understands what is going on in any country at any time very well, economists, who understandably often speak about trends in local finance in general solely from the perspective of their own discipline, are seldom in a position to speak with much authority. Indeed, even within the context of any particular country any trends need to be understood and evaluated primarily in terms of the historical and political context as well as changes in economic conditions.

3. Comparing Countries: Pitfalls and Lessons

Of course, everything said in the previous section has often been said before. Nonetheless, when faced with the need to say something about the confusing cacophony of noise that inevitably afflicts those who try to make sense out of either data on local finance across countries or comparative case studies of fiscal decentralization, a common, and sensible, approach is to attempt to array countries within some taxonomic structure in order to simplify the analysis and make it more comprehensible, either by comparing like with like or by fitting countries within some accepted normative or conceptual framework. This section comments briefly on two recent, and quite different, examples of this approach.

The first example comes from a recent OECD study (Charbit, 2009) analyzing the 'tax-grants balance' in OECD countries. After first neatly setting the conventional normative fiscal federalism framework aside with the (understated) observation that "...in practice a variety of types of tax-grant systems are observed in OECD countries, which do not all follow these rules" (Charbit, 2009, 3), this paper then proceeds to classify country systems into four different types, none of which can easily be related to the 'optimal' model. Unfortunately, although there are many good and sensible observations in this paper, the suggested classification does not seem to be very useful.

One problem with this classification system it is that –perhaps influenced by the need to follow national political conventions

⁷ For an interesting early examination of the inappropriate adoption of foreign fiscal models and how this initial decision shapes subsequent developments in a particular policy area, consider the example of the adoption of general sales taxes in various francophone African countries discussed in Hill (1977).

⁸ Peacock and Wiseman (1961) called this the 'displacement effect.' There have in all likelihood been hundreds of subsequent studies of Wagner's so-called 'law' of state expansion –one of the better ones is a recent paper by Shelton (2007) – but most of them appear to reflect more econometric game-playing than either deep understanding of what the 'law' means (Peacock and Scott, 2000) or a serious examination of public sector growth.

in certain countries- the OECD first defines the tax-grant balance along three dimensions: autonomous tax, tax-sharing, and transfers. Since from the local finance perspective the last two of these categories are essentially synonymous -they give; I receive- the four country types the OECD study may for present purposes be reduced to three -those classified as having, respectively, low, medium, and high local fiscal autonomy.9 However, even if one then simplifies further and considers only the countries the study classes as 'low' in sub-central fiscal autonomy (Germany, Mexico, Austria, the Czech Republic, and Turkey) vs. those classed as 'high' in this dimension (Sweden, Switzerland, Finland, USA, Norway and France) it is hard to see how it has any meaning to state that "...each type constitutes a distinctly different model of sub-national government finance" (Charbit, 2009, 6). On the contrary, from the perspective of local finance it seems more likely that distinctly different models of sub-national government finance are lumped together within each of these groups. In fact, as discussed further in Section 3 below, there are probably at least three different 'models' of local finance to be found within each of the two categories -high- and low-autonomy- singled out above.

> "There are six categories in which to classify only 15 countries in terms of the most important single obstacle encountered. In fact, each country usually faces its own combination of problems"

A second, quite different, example of the categorization problem is provided by a recent study by Martinez-Vazquez and Vaillancourt (2010a). In an attempt to pull together a coherent conclusion to a volume of (as usual) rather disparate case studies of decentralization experience in 15 very different developing countries, the authors interestingly chose to categorize the countries not by what they did, or what the effects may or may not have been, but rather in terms of the 'obstacles' they faced. This strategy is interesting since there may indeed be much to learn about how to succeed by examining the anatomy of failure —that is, cases in which decentralization does not appear to have been particularly effective, at least in terms of the canonical fiscal federalism model.

From some perspectives, of course, it may make sense to distinguish between tax-sharing and transfers. For example, recipient governments may prefer the former because it insulates them to some extent from discretionary budgetary policy and may, by giving them access to a more elastic tax base, increase the flow of funds they receive. However, in the present context the key point is simply that, with tax-sharing as with transfers, in most instances local governments cannot through their own efforts influence the amount of money they receive in any period.

What does this 'taxonomy of failure' suggest? A first interesting observation is that it takes six categories to categorize only 15 countries in terms of the most important single obstacle encountered. Indeed, as the authors stress, in reality each country usually faced its own peculiar combination of problems. The six categories of problems said to afflict decentralization are as follows:

- First, in some countries (Albania, Southern Sudan, Pakistan, and Peru), decentralization seems to have been, so to speak, designed to fail in the sense that there were fundamental flaws in the original plan, for instance, murky expenditure assignments or overwhelming transfer dependence.
- Second, in Laos, Bangladesh, and Congo DRC –though in quite different ways in each country– the key problem appears to have been weak central governments.
- Third, sometimes the main obstacle was not so much the weakness of the central government as the effective resistance of particular groups —local elites and traditional power-holders— to decentralization. This is said to be the main defect in Burkina Faso and Sierra Leone..
- Fourth, in other cases (Cambodia, Madagascar) traditional hierarchial central structures –sometimes imposed or reinforced by colonial history– were simply too strong.
- Fifth, sometimes despite their rhetoric, central governments in the end were not really willing to lose political control, as in Egypt and Ethiopia.
- Sixth, in two countries considered –Yemen and Tanzania– what the authors consider 'real' fiscal decentralization –the effective devolution of fiscal authority to sub-national governments envisaged in canonical fiscal federalism theory– seems to have become lost in the search for some form of what the authors call 'union preserving federalism.'

Martinez-Vazquez and Vaillancourt (2010a) go on to draw a number of 'lessons' from these studies of failure for countries that really want to achieve effective decentralization as they understand it. Many of the lessons they suggest constitute sensible advice for those in the decentralization business: for instance, if a country is unwilling or unable to accept that to achieve 'decentralization'

"If a country is unwilling or unable to accept that achieving decentralization requires elites and interests to give up power to others, decentralization is unlikely to work well" requires some elites and interests to give up power to others, decentralization is unlikely to work well.

More fundamentally, however, from the perspective of those interested not only in changing the world but also in understanding it, the real lesson from their interesting work is perhaps less the guidance that it provides to would-be decentralizers than the simple fact that, as with most case studies of decentralization, the cases in their book underline the basic conclusion stated at the end of Section I above. That is, one can only understand trends in sub-central finance in any country in light of a full appreciation of the relevant environment -economic, political, social- and a deep understanding of why it is the way it is. From this perspective, since each 'unit of study' is, by definition, different in some relevant ways -as many studies have shown, political borders remain surprisingly 'thick' even in an economically 'globalized' world (Helliwell, 1998)lumping together disparate observations in the same analytical pot is perhaps unlikely to prove a very fruitful approach to improving our understanding of decentralization.¹⁰

These comments are not intended to suggest that comparative studies may not be both useful and necessary. On the contrary, it is always illuminating to consider how particular institutions function in any country from a comparative perspective. The comparative approach may be useful to policy-makers—as well as to scholars attempting to understand and evaluate their work—for several reasons:

- If other countries face similar problems, we can learn from examining how they have dealt with them.
- We can also learn from observing the outcomes of alternative solutions tried elsewhere.
- We can often learn a lot about the system in our own country by thinking about the similarities and differences between its situation and that in other countries.
- In particular, comparative studies may help us to some extent to escape parochialism —the tendency to generalise local problems to universal dilemmas and local solutions to universal truths.
- And, perhaps most importantly, it may be possible through such studies to overcome the apparent endemic human hope that there must be a simple solution to complex problems to be found somewhere else –that, as it were, the grass is indeed greener on the other side of the fence.

Good comparative studies such as those in Martinez-Vazquez and Vaillancourt (2010) and Smoke, Gomez and Peterson (2006), are

thus valuable not so much because they tell us how to do the right things or how to avoid doing the wrong things but because they add, bit by bit, to our invariably inadequate knowledge of the many dimensions of the decentralization puzzle in any particular country.

> "It may be possible through such studies to overcome the apparently endemic human hope that there is a simple solution to complex problems to be found somewhere else"

Of course, comparisons may also be misused. For example, it is all too easy to fall into the approach of picking this good feature from that country, and another one from another country, and then proposing that both should be introduced in a third country without taking adequately into account that from an institutional perspective every country is both unique and to some extent an organic unity. As Albert Hirschman (1967) once said, there are no such things as 'side effects' when it comes to policy analysis: there are only effects. To put this another way, in considering any policy change, one needs to take into account not only its intended or desired consequences (whether as explicitly stated by the government or as imputed by the analyst on the basis of some normative model) -for example, more efficient and effective provision of local public services- but all its consequences, direct and indirect, not only on that outcome but on all relevant outcomes including political and other costs that may arise from deviations between the services provided in one locality and those in another.

The two exercises in country categorization summarized earlier in this section also serve to underline another important point. Such taxonomic exercises are generally motivated in part by the desire to simplify and reduce complex reality into a more tractable form, and in particular a form that can more readily be brought within the framework of some normative model. Implicitly, the model in both studies discussed earlier in this section appears to be that suggested by the conventional fiscal federalism approach, as modified to some extent in its 'second-generation' formulation (Oates, 2008). In both instances, however, the authors really had to reach well beyond that model to grapple with the realities they faced.

In the cited OECD paper (Charbit, 2009), for instance, perhaps for reasons of international politics, a rather artificial distinction is made between two types of intergovernmental transfers—those in which the amount (and perhaps, in some instances, even the allocation to some extent) is determined by central tax collections and those in which the amount is determined by the normal budgetary process (or in some other way, as in the case of the traditional Canadian equalization formula). The potential relevance of this distinction to trends in local finance is not discussed, however. For example,

¹⁰ As Deaton (2010) has recently re-emphasized, this same point also often raises serious questions about how to interpret many empirical studies based on cross-country statistical comparisons.

different central tax bases for transfers may have substantially different elasticities and hence different implications for local finances. Similarly, different degrees of central discretion with respect to the level and distribution of transfer funds may affect local finances very differently.

In Martinez-Vazquez and Vaillancourt (2010a), as was already noted earlier with reference to Smoke and Gomez (2006), the authors recognize more clearly that the political and political economy elements that are so often critical to decentralization are not adequately encompassed within the traditional normative framework. As they (almost) put it at one point, there may be as many "visions of decentralization" (Martinez-Vazquez and Vaillancourt, 2010a, 14) as there are players in the game. However, they do not suggest any alternative categorization that may help sort matters out a bit more.

As these examples suggest, in reality it is surprisingly hard in most cases to tell either what the game is or who the players are without thinking a little more clearly about how best to model the 'visions' of decentralization that are held in different countries. The next section takes a first look at this question.

"Taxonomic exercises are generally motivated in part by the desire to simplify and reduce a complex reality into a more tractable form, and in particular a form that can more readily be brought within the framework of a normative model"

4. 'Models' of Local Government

Although most economists are presumably more familiar with 'models' than with 'visions' either word may perhaps fit the kind of normative frameworks sketched briefly in this final section. Customarily, economists follow a four-step approach to policy issues:

- Step 1: Construct a 'model' of what a good (optimal) public sector structure should look like.
- Step 2: Examine the situation in question to see how it diverges from the model.
- Step 3: Propose changes that will transform 'what is'—the imperfect reality of the current situation— into 'what ought to be'—the perfect world of the initial normative model.

• Step 4: Since the correct answer has now been supplied and the rest is just a simple matter of political will to do the right thing and simple competence to carry it through, most economists are then content to retire, satisfied, to their studies to wait for the next problem to come along.

Of course, this characterization is both rather facetious and undoubtedly unjust to many serious policy-oriented scholars. Nonetheless, it does seem a fair comment to note that economists have not always paid enough attention to the critical question of why 'what is' is, that is, why certain administrative values, styles and practices exist and persist in a particular environment.

When a reformer tries to implement a decentralization plan based on the conventional fiscal federalism model, as studies like those summarized in Smoke and Gomez (2006) and Martinez-Vazguez and Vaillancourt (2010a) demonstrate, the result is that decentralization almost inevitably encounters many unforeseen obstacles, traps, and dead-ends and that outcomes are some distance from the postulated ideal. In addition to the need to pay more attention to the importance of both 'path dependency' and 'context specificity' -academic language for history and the current environmentstressed earlier, this section suggests that there may be yet another 'model-based' problem when it comes to understanding trends in local finance. Specifically, a number of quite different 'models' of local finance appear to exist -some perhaps more in practice than in theory. To avoid a 'dialogue of the deaf' between analysts and policymakers discussing 'decentralization'- itself a complex, many-faceted, and often somewhat ambiguous term -it is often critical to ensure that everyone holds the same normative model of the appropriate role of local government and its role in the total policy picture.

To begin with, it is important to distinguish two different theoretical models. One is of course the canonical fiscal federalism model as set out notably by Oates (1972).11 Within the broad structure of this model, at least three significant 'sub-models' may perhaps be discerned, as discussed below. To begin, however, we shall first discuss the quite distinct 'administrative federalism' model sketched in Rattsø (2002) and set out in more in detail in some of the country cases found in Dafflon (2002) and Kim and Lotz (2008). Although Oates (2005) notes that this model is of little use with respect to most of the interesting issues in fiscal federalism, this dismissal seems mistaken. In fact, two variants of this model, which for convenience are distinguished here as territorial administration

For an earlier review of this model, see e.g. Bird et al. (2003). Note that the various approaches to 'second-generation' fiscal federalism insightfully discussed in Oates (2005, 2008) and Weingast (2006) are not considered here. From the present perspective these approaches can all be seen as (useful) extensions of the canonical model to encompass more explicit treatments of information asymmetry and various aspects of political economy. Similarly, the quite different 'public choice' perspective associated with Brennan and Buchanan (1980) is also not discussed. A brief consideration of some of the literature mentioned in this note may be found in, e.g. Bird (2009) and Smart and Bird (2009).

(Model I) and administrative federalism (Model 2) appear to accord much more closely to both the normative framework and the systems existing in a wide variety of countries than the various variants (Models 3-5) of the canonical model next discussed.

Model 1. Territorial Administration

Experience around the world in a wide variety of countries suggests strongly that many have neither any tradition of, or experience with, the "electoral and fiscal autonomy" that (Oates, 2005, 358) seems to consider an essential ingredient of fiscal federalism as he understands it. In the territorial administration 'model' followed in many such countries local governments are essentially viewed simply as the local manifestation of central administration —as it were, local lines in the central budget. Sometimes such governments may have limited powers to impose fees. However, their main intended (and actual) role is simply to act as a channel for central funds devoted to carrying out centrally-directed functions at the local level. Often, the number, qualifications and salaries of all 'local' officials are also set centrally. In short, local governments are little more than 'deconcentrated' central government offices.

"In the territorial administration model applied in many countries. local governments are essentially viewed simply as the local manifestation of central administration"

In the many countries around the world in which both the reality of experience and expectations are along these lines, it is not surprising that most attempts to decentralize in terms of the conventional fiscal federalism paradigm of giving local governments responsibility and authority for real decision-making have failed. In terms of the two studies mentioned in Section 2, for example, the obstacles to decentralization mentioned by Martinez-Vazquez and Vaillancourt (2010a) may at least in part be attributed, without unduly distorting reality, in two-thirds of the cases they consider to the dominance in reality (and perhaps also expectation) of what may be characterized as a sort of 'territorial administration' model.¹²

Moreover, a problem with the OECD (Charbit, 2009) categorization scheme noted earlier also becomes apparent. In the traditional Soviet-era model, it was clear that local governments had no significant existence apart from their role as the local face of state power (Kornai, 1992). Unsurprisingly, even some countries that are now in the European Union continue to hew fairly close to this model. A recent detailed study of the Czech and Slovak Republics, for example, shows clearly that, despite considerable rhetoric about 'local self-government,' especially in the Czech case, both attitudes to and the reality of local government finance still largely reflect their role as arms of the state public administration (Bryson, Smith, and Cornia 2009). That no one could possibly characterize Mexican local governments in this way (see e.g. Giugale and Webb 2000), even though the two countries are classified in the same category in the OECD (Charbit, 2009) scheme illustrates why that approach to classification is not useful.

In the present context, however, the point to be emphasized is that if a country (implicitly or explicitly) thinks Model I —deconcentration— is 'right' for it, there is probably little point in urging 'devolutionist' (local autonomy) reforms on them. Moreover, evaluating the success (or not) of whatever decentralization (by their lights) that they undertake by what is, from their perspective, the largerly inappropriate standard of the canonical fiscal federalism model is unlikely to prove a very useful exercise. One may do so if one wishes: but why should anyone in the country listen?

Model 2. Administrative Federalism

Such problems are not confined solely to ex-Soviet countries or to poor countries. Indeed, an important variant of this model is evident in northern Europe in the form of the 'administrative federalism' model (Model 2). Under this approach, the 'welfare state' is in effect administered by an integrated system under which central and sub-central governments, although distinct and with different constituencies and responsibilities, nonetheless work almost as one. In countries like Sweden and Denmark, for example, most redistributive spending is financed by both central grants and local taxes but locally administered. 13 In contrast to Model I, however, under Model 2 local governments have both incentives and freedom to experiment to some extent with new services and especially new ways of delivering services. Potential problems arising from information asymmetry and differing incentives are assumed to be largely dealt with through an institutionalized structure of central and local cooperation that suffices to ensure that, in effect, each level of government is seeking to achieve the same objectives and acting on the basis of the same information. In such circumstances, the commitment failures that motivate so much research on fiscal federalism are unlikely to be a serious problem

¹² Traditional hierarchial rule (Cambodia, Madagascar), central governments unwilling to give up control (Egypt, Ethiopia) and murky expenditure assignments and undue transfer dependence (Albania, Southern Sudan, Pakistan, and Peru), and effective resistance of elites and power-holders (Sierre Leone and Burkina Faso). In contrast, in two of the cases considered in Martinez-Vazquez and Vaillancourt (2010a) –Yemen and Tanzania—the canonical model fails essentially for the opposite reason, because it does not easily encompass what has elsewhere been called the 'federal finance' model (Bird and Chen, 1995) –a model that comes closest to Model 5 as discussed below.

¹³ See the papers on the Nordic countries (Denmark, Finland, Norway, Sweden) in Kim and Lotz (2008) as well as the Nordic papers presented at a subsequent Copenhagen workshop in 2009.

since local authorities are generally both directly regulated with respect to many aspects of local service provision and also subject to budgetary regulations that ensure they are generally unable to —or to expect to be able to—obtain a bailout by increasing spending.

(Model 4) and the autonomy model (Model 5). Of course, both these labels and the distinctions drawn between these models are rather arbitrary since various elements discussed here under each of these headings are often intermingled both in the literature and in practice. ¹⁶

"Under the administrative federalism model, the welfare state is in effect administered by an integrated system comprising central and sub-central governments, albeit with distinct and with different constituencies and responsibilities"

On the other hand, experience elsewhere suggests that commitment problems clearly do arise in decentralized systems like those of the United States and Canada, which again makes one wonder about the utility of a classification like that in the OECD study (Charbit, 2009) that places the United States and Sweden in the same category. Moreover, such problems have been an important reason why decentralization has encountered serious obstacles in many countries as illustrated by the 'design flaws' identified by Martinez-Vazquez and Vaillancourt (2010a). 14 Countries such as Denmark may be sufficiently small and homogeneous and have a sufficiently generally agreed set of values so that central governments do not have to worry much about whether local governments will not do what they 'should' (from the perspective of the central government), while at the same time local governments are sufficiently integrated into the decision-making process that they do not feel unduly oppressed and directed from above. Few other countries may be so fortunate but the main point here is simply that those working in this Model 2 framework often have rather confused and confusing exchanges with those, like most economists, who approach decentralization from the conventional fiscal federalism framework.15

Of course, the 'conventional' fiscal federalism model itself is by no means simple. Quite apart from the on-going evolution of various so-called 'second generation' fiscal federalism approaches, at least three distinct 'models' of local finance may be detected lurking within the conventional framework. For discussion purposes, we shall label them as the benefit model (Model 3), the agency model

Model 3. Benefit Model

To begin with what is perhaps the simplest, if perhaps the least evident in practice, Model 3 might perhaps also be called the local business model. Tiebout (1956) in a sense started this line of thinking by treating localities as competing firms. However, his 'local firms' sold only pure public goods that were enjoyed equally by all local residents. In reality, of course, many of the goods and services provided by local governments are essentially 'private' in character and should, in principle, be paid for strictly by those who benefit directly from them. Combining these lines of thought, Bird (2001) draws an analogy between a local government and a business providing services to consumers (residents) who of course must pay for what they received. What this approach naturally suggests is that the first rule of local finance should be: "Wherever possible, charge" since it is both equitable and efficient for the direct recipients of benefits, whether residents, businesses, or "things" (real property) to pay for what they get, provided, of course, that the correct (roughly, marginal cost) price is charged. Only thus will the right amounts and types of service be provided to the right people -that is, those willing to pay for them.

Considered somewhat more broadly, this approach can be recast as a strict benefit model of local finance, under which the

"Under the Benefit Model, the basic requirement for efficient and effective local government is the matching of expenditure responsibilities with revenue resources, revenue capacities with political accountability, and benefit with financing areas"

¹⁴ See also e.g. Rodden, Ekesland, and Litvack (2003).

For further reflections along this line, see Smart and Bird (2009), which also stresses the importance of simultaneously considering the design and implementation of both intergovernmental transfers and local taxes. In addition, as Borge (2010) notes, in a fuller treatment of local finance 'models' it is also important to consider regulatory provisions, both those related to the control of local services and the more general 'fiscal rules' often used to constrain local deficits and borrowing.

As Jorgen Lotz has pointed out (in a personal communication) many of the elements singled out in the discussion of the next three models may also properly be considered in the context of Model 2. In Denmark, for example, the high degree of equalization in effect makes the local personal income tax (the marginal source of finance for welfare services) a benefit tax, thus discouraging inefficiency or 'gold-plating' in local service delivery because such 'excess' costs will be directly reflected in higher local taxes. Since local governments in all countries may of course differ considerably in the efficiency with which they produce services, a good dose of some version of the 'benefit' argument can play a useful role within almost any normative framework.

basic requirement for efficient and effective local government is the matching principle, with expenditure responsibilities being matched with revenue resources, revenue capacities matched with political accountability, and, in particular, benefit areas matched with financing areas.¹⁷ As Bird (1993) notes, this approach too has strong implications for the appropriate local financing structure, notably that localities should be constrained from 'exporting taxes'. For example, as Bird (2003) argues, while businesses should pay property taxes, they should not be subject to higher effective property tax rates than residents, since such discriminatory taxation will undesirably bias business investment decisions. If there is a benefit case for heavier business taxation the best way to impose such taxes is probably through a relatively neutral tax along the lines of Italy's (unpopular) IRAP.¹⁸

Model 3 in effect focuses on the appropriate level and structure of local revenue systems. In doing so, three strong assumptions are implicitly made:

First, local governments have an appropriate range of expenditure responsibilities —providing local services to local residents and businesses. In other words, the obscurities, contradictions and even impossibilities that, as Martinez-Vazquez and Vaillancourt (2010a) emphasize, are often to be found in practice have all been resolved. Who is to do what is clear to all.

Second, local governments are permitted to exercise these responsibilities freely both in the sense that they have (potentially) access to sufficient resources and that they are not subject to detailed controls over what they do and how they do it. Of course, this does not mean that they are not subject to the constraints imposed by both administrative and political accountability.

Third, local governments are not directly concerned with redistributive policy.

In practice, all three of these constraints are generally breached to some extent in almost all countries. For example, at least in democracies, if local governments are actually governments—politically responsive bodies— they are, almost by definition, inevitably going to be in the business of redistribution to some extent, whether their attempts to redistribute are vitiated by the openness of their economies or not. Similarly, in most countries, central governments attempt to bend local government decisions to some extent to accord with national policy objectives. Finally, some degree of spillovers of both local expenditures and taxes are almost inevitable.

Model 4. Agency Model

Model 4 emphasizes the failure of the first and second of the assumptions just mentioned. In this approach, which appears to dominate much of the literature on grants as well as many empirical fiscal federalism studies, local governments are viewed to a significant extent as agents to whom central governments have delegated certain functions. Given the (presumed) information asymmetry inherent in agency relationships, with local information dominating central knowledge, analysts thus face the 'mechanism design' task of developing an incentive-compatible combination of intergovernmental transfers and local taxing power that will maximize social welfare —usually taken to be synonymous with national (rather than local) welfare.

"In the Agency Model, local governments are viewed to a significant extent as agents to whom central governments have delegated certain functions"

There is of course nothing wrong with this approach, which has not only produced a rich theoretical and empirical literature but also helps one to understand and attempt to improve the many real-world situations in which the underlying assumptions —that local and central knowledge and interests differ and that the level of national welfare may be improved by improving the extent to which central (and presumably benevolent) interests— prevail. In many ways, this model provides, as the literature demonstrates, a very useful template or normative framework for analysis of intergovernmental fiscal relations.

However, Model 4 is unlikely to provide a perfect or complete fit to reality in any country. For example, it is subject to some (important) caveats in some respects when it comes to applying it in 'truly federal' countries, that is, countries in which it is not appropriate to assume that the 'centre rules' (Bird and Chen, 1998, Bird and Tassonyi, 2001). It is also arguably only really appropriate for countries in which both national and local democracy exist in the sense of governments at all levels being fundamentally accountable to their citizens who are relatively well informed about what is going on: that is, a certain degree of 'fiscal transparency' is necessary for this approach to be a useful approximation to reality (Bird, 2000). Unfortunately, as Martinez-Vazquez and Vaillancourt (2010a) and others have shown, such conditions simply do not exist in many developing countries. It is perhaps therefore legitimate to wonder exactly how much conclusions based on this framework have to tell us about how to improve policy outcomes in such countries.

¹⁷ Set out explicitly in Olson (1969), this 'fiscal equivalence' approach is also central to Bird et al. (2003).

¹⁸ This line of argument appears to have had some influence on recent revisions of local business tax systems in both Japan and France.

¹⁹ An important initial paper along this line was Musgrave (1961); for some further discussion, see Bird and Smart (2002, 2010), and Smart and Bird (2009).

Model 5. Local Autonomy

Finally, for completeness, presumably there is also a Model 5, of complete local autonomy, at least in many key respects. At the extreme, under this model local governments are free to do what they want, how they want, and when they want. At first glance this model -though in some ways close to Tiebout (1956)- may appear to make little sense, since such governments would then in effect be little 'countries' and hence not 'local' in the sense of being subordinated to some national rules and government. A more realistic version, however, is to think of a federal country in which state -and perhaps even local- governments have clearly-defined spheres of absolute authority that cannot be abolished, cancelled or directly controlled by central governments. In this 'federal finance' model of local self-government localities would presumably be free to do as they wished in terms of taxing and spending for their citizens. Under the right conditions -a framework that ensures that their actions will not infringe unduly on the freedom of other local governments (no tax exporting, no internal barriers to trade, etc.) and also not on areas for which the central government has primary responsibility, adequate information and incentives facing them (local accountability, fiscal responsibility, etc.), and so on- the result should be welfare-maximizing. In this context, the task of the policy analyst in effect becomes one of designing the constitution, thus moving the discussion to another level.20

> "At the extreme, under the Local Autonomy Model, governments are free to do what they want, how they want, and when they want"

In the federal countries of North America, for example, both public discussion and public policy towards fiscal federalism often wobble somewhat uneasily between Model 4 and Model 5 with respect to federal-state (province) relations. In the United States, to some extent in many states, similar discussions—and policy confusion—may sometimes be seen at the state-local level. In Canada, on the other hand, provincial-municipal relations are firmly in the Model 4 mode for the most part (Bird and Tassonyi 2003).

This characterization of the Canadian and American cases may of course itself be considered by some to be a caricature. But rather than pursue such side issues further here, perhaps the most appropriate way to conclude the very preliminary reflections set out in this section is to emphasize that the point is not so much whether this or that model (or mixture of elements from the different models sketched above) is 'right' either in general or in any particular context

²⁰ Brennan and Buchanan (1980) explicitly approach the issue from this perspective, although they adopt a strong Leviathan model of governments at all levels. "In the federal countries of North America, both public discussion and public policy towards fiscal federalism often wobble somewhat uneasily between Model 4 and Model 5 respect to federal-state relations"

or even to discuss further whether the particular set of models listed here is either complete or correct. In all likelihood, it is not. The aim here is simply to underline the importance of ensuring that those engaged in dialogue about local finance issues in any country are as clear as possible about both their own normative assumptions about what is 'right' and those of others in the discussion. Clearing the air in this sense is unlikely to be a simple or easy task either conceptually or in practice. Nonetheless, doing so may, in at least some instances, lead to more meaningful and perhaps ultimately productive discussions than seems, on the evidence, to have been the case so far in most countries in which debates on various aspects of decentralization are currently under way.

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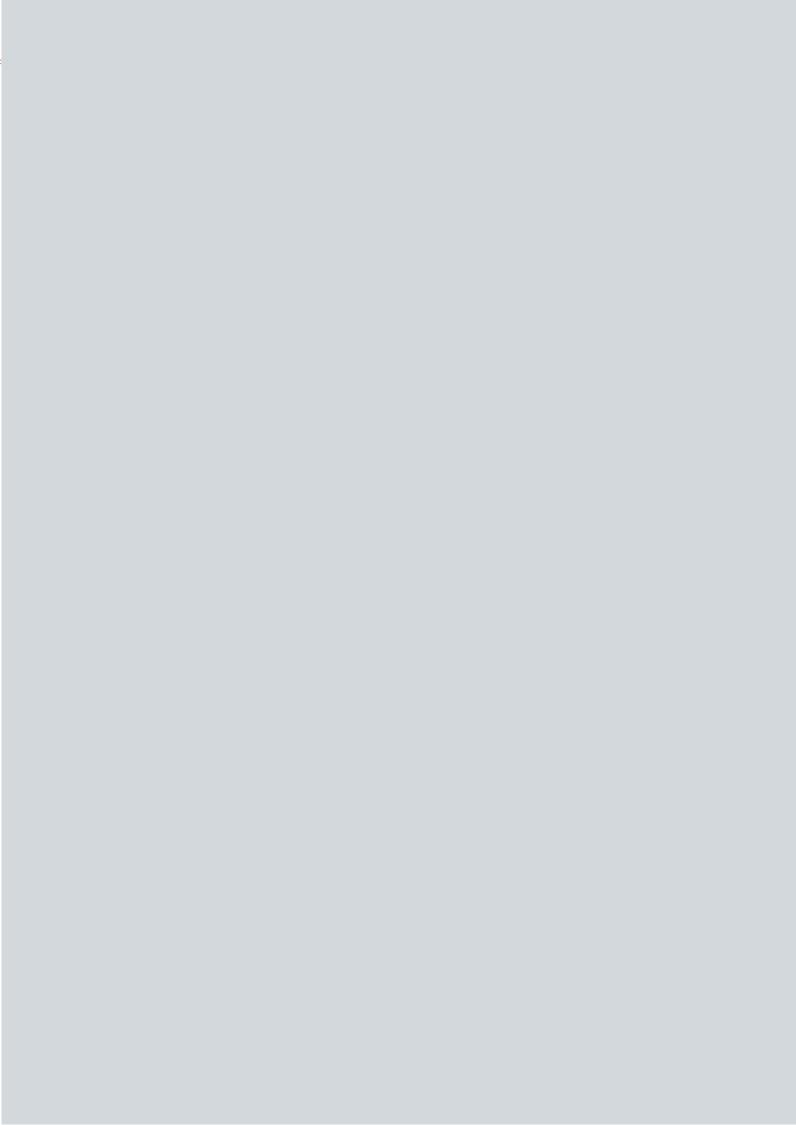
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The Property Tax ... in Theory and Practice¹

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I. Introduction

Almost all local governments worldwide rely, at least to some extent, on property taxation to pay for local services. Economists have long argued that the property tax is a good tax for local government because it is fair (based on the benefits received from local services), it is difficult to evade, and it promotes local autonomy and accountability (Bird R. M., 2001). Yet, a review of OECD data shows that property tax revenues rarely exceed 3 percent of Gross Domestic Product (GDP) in any country and are often much less than that. The under-utilization of the property tax leads one to ask whether the property tax is such a good tax for local government and, if it is, why is it not

used more heavily? Are there ways to increase property tax revenues?

This paper explores the role of residential and non-residential property taxes... in theory and practice. Although most of the literature talks about "the" property tax as if it were one tax, it is really two different taxes – a tax on residential property and a tax on non-residential property. The economic case for the residential property tax is quite strong;

the same cannot be said about the non-residential property tax. In practice, however, in most countries where property taxes are levied, the tax rate is higher on non-residential properties than on residential properties.²

The outline of the paper is as follows: the first part reviews the case for residential property taxes at the local level. The second part turns to the economics of the non-residential property tax. The third part provides a quantitative overview of property tax revenues in OECD

countries (where the two taxes are lumped together because the available information does not differentiate them). The fourth part suggests some of the problems with the property tax that may account for it being under-used. The final part addresses the question of whether property taxes can be reformed to increase revenues.

2. The Residential Property Tax is a Good Tax for Local Government – in Theory

Economists consider residential property taxes to be appropriate as a source of revenue for local governments, in large part, because of the connection between the types of services funded at the local level (for example, good schools, access to roads and transit, and so on) and the benefit to property values (Fischel, 2001). To the extent that people understand that their property taxes are being used to pay for local services, there is thus a link between the benefits and costs of local services that encourages them to make efficient fiscal decisions (Oates, 2010, p. 13). Both the benefits derived from local services and the taxes are capitalized into property values. Because taxpayers are willing to pay more for better services, the value of these services translates into higher property values. Higher taxes, other things being equal, translate into lower property values.

"Economists consider residential property taxes to be an appropriate source of revenue for local governments, mainly because of the connection between the types of services funded at the local level and the benefit to property values"

Of course, this analysis is based on a number of assumptions such as that local property taxes do finance services that benefit property values, that the incidence of such taxes is on local residents, that both tax rates and service levels are decided by local residents, that those who wish to 'buy' other combinations of services and tax rates are free to move to other jurisdictions, that – impelled by their sensitivity to property values – people will act rationally in response to such signals, and that local governments do what

¹ An earlier version of this paper was presented at the 6th Symposium on Fiscal Federalism: Financing Local Governments, Barcelona, June 14-15, 2010

² See, for example, (Bird & Slack, 2004) which shows that for 24 of the 25 countries studied, the non-residential property tax rate is higher than the residential rate.

voters want them to do. The strength and validity of many of these links varies across countries (Bird and Slack, 2006).³

A competing view sees the property tax as a tax on capital that results in distortions in the housing market and in local fiscal decisions (Zodrow, 2001). The property tax (based on the market value of land and improvements) discourages building and results in the underutilization of land. The amount of capital per unit of land is less than what is economically efficient. Both the benefit-based and capital tax approach have some validity. The property tax is not purely a benefits tax because homeowners who improve their houses will face higher taxes and will therefore be discouraged from doing so. At the same time, the benefits of local programs are reflected in local property values.⁴

Another reason that the property tax is regarded as a good tax for local governments is that property is immovable – it is unable to shift location in response to the tax and it cannot be hidden. Even the owner of a vacant property is taxed under the property tax. These characteristics make it difficult to evade. Although a change in property tax may be capitalized into property values in a particular community, and in the long run tax differentials may affect where people locate, these effects are smaller than the distortions created by income and sales taxes at the local level. This characteristic of the property tax makes it somewhat easier to levy and collect than other taxes and thus provides the potential to raise significant revenues.

"Property tax is regarded as a good tax for local governments, because property cannot shift location or be hidden"

To the extent that the property tax is only levied by local governments, it can be an important instrument of local autonomy. To ensure local autonomy, however, the tax cannot be used to any significant extent by other levels of government and tax rates must be set locally and not by a senior level of government. The extent to which local governments have exclusive rights over the property tax contributes to its role in promoting local autonomy (Oates, 2010, p. 13).

The property tax is a highly visible tax. Unlike the income tax, for example, the property tax is not withheld at source. Rather, taxpayers generally have to pay it directly in periodic lump-sum payments. As a result, taxpayers tend to be much more aware

"Visibility is clearly desirable from the point of view of decision-making, because it makes taxpayers aware of the cost of local public services; this is a good thing from both an economic and political perspective"

of the property taxes they pay.⁵ The property tax also finances services that are highly visible, such as roads, garbage collection, and neighborhood parks. Indeed, studies show that residents are more willing to pay for local services when they rate their government and service provision highly (Simonsen and Robbins, 2003, p. 850). Visibility is clearly desirable from a decision-making perspective because it makes taxpayers aware of the costs of local public services. This awareness enhances accountability, which is obviously a good thing from both an economic (hard budget constraint) and political (democratic) perspective. At the same time, visibility restricts the ability of local governments to raise or reform the tax.

3. The Non-Residential Property Tax is Not a Good Tax for Local Government – In Theory

Non-residential properties include a wide variety of property uses including commercial uses (such as offices, banks, retail outlets, restaurants, hotels), industrial uses (such as mines, manufacturing plants, shipyards), and special uses (such as pipelines and railway rights-of-way). As noted earlier, the effective property tax rate (property taxes relative market value) is generally higher on non-residential properties than on residential properties. This differential is difficult to justify, at least according to economic theory.

Differential tax rates do not necessarily reflect the differential use of services by different property types. Users of non-residential property often provide many services on their own such as garbage collection, security, and fire protection. Kitchen and Slack reviewed property taxes and municipal expenditures in eight municipalities in Ontario, Canada in 1990 and concluded that non-residential property taxes ranged from 28 to 51 percent of total local property taxes but accounted for only 31 to 40 percent of municipal expenditures (Kitchen and Slack, 1993). A US study estimated that the business-related share of state/local expenditures in the US is less than the business-related share of state/local tax revenues (Oakland and Testa, 1995). The ratio

³ This argument becomes particularly tenuous when it comes to explaining the commonly found phenomenon of higher taxation on non-residential property. The over-taxation of non-residential property is discussed below.

 $^{^{\}rm 4}$ A third view is that the property tax is a wealth tax. See, for example, (Kitchen H. M., 1987).

⁵ The exception is where mortgage institutions include property tax payments with monthly mortgage payments.

differed from state to state, however. Although a case can be made on benefit grounds for taxing non-residential properties at a lower rate than residential properties, this is rarely the case.

It has also been argued that property taxes should be heavier on those components of the tax base that are least responsive to a tax increase (least elastic in supply). Since businesses tend to be more mobile than homeowners (in other words, they are more responsive to tax changes), efficiency arguments dictate that non-residential property should be taxed more lightly than residential property. Differentially higher taxation distorts land use decisions favouring residential use over commercial and industrial use (Maurer and Paugam, 2000).

"Since businesses tend to be more mobile than homeowners, efficiency arguments dictate that non-residential property should be taxed more lightly than residential property"

Non-residential property taxes at the local level can also result in tax exporting whereby the tax on commercial and industrial properties is shifted on to consumers and owners of capital who may not live in the taxing jurisdiction. Although non-residents who are commuters or visitors to the taxing jurisdiction use some services and therefore should pay some tax, there is a tendency to tax them more than the cost of those services.

Tax exporting is inequitable because the same benefits of local expenditures require different tax prices in different jurisdictions depending on the degree of exporting. It is inefficient because a jurisdiction that can export taxes can provide greater net benefits (expenditures minus taxes) and will be able to attract development. When an area exports its tax burdens, citizens will demand more services than they themselves are willing to pay for through their taxes. The result is an oversupply of public services. It is not accountable because those bearing the burden of the tax are not the same as those enjoying the benefits thus reducing democratic accountability.

Notwithstanding the efficiency arguments against tax exporting, "politicians have a strong political bias toward exporting tax burdens" (Brunori, 2003, p. 43). Political leaders "prefer to meet constituent service demands without incurring the risk of placing the burden of paying for those services on those constituents" (Brunori, 2003, p. 38).

"When an area exports its tax burdens, citizens will demand more services than they themselves are willing to pay for through their taxes"

4. Property Taxes are Not Widely Levied in OECD Countries

Notwithstanding the strong justifications, at least for the residential property tax at the local level, an overview of property taxes in selected OECD countries suggests that the tax is not widely used. Table I shows property taxes relative to GDP for selected years from 1965 to 2008 for some federal and unitary countries. The real property tax refers only to recurrent taxes on property (residential and non-residential) and not other property-related taxes such as land transfer taxes (stamp duties), charges on developers, and other non-recurrent taxes on property. Property taxes relative to GDP are over 3 percent in the UK, close to 3 percent in the US and Canada, and just over 2 percent in France, Japan, and New Zealand. In the remaining OECD countries in Table I, the property tax represents an even smaller proportion of GDP. With few exceptions, the property tax has not been increasing as a proportion of GDP over the last 40 years.

"Property taxes vary across jurisdictions, according to the expenditure responsibilities assigned to local governments and the other revenues available to them"

Reliance on the property tax as a source of local government revenue does not seem to vary according to whether the country is federal or unitary. Property taxes do vary across jurisdictions, however, according to the expenditure responsibilities assigned to local governments and the other revenues available to them (such as other taxes, intergovernmental transfers, and user fees). Table 2 provides a breakdown of local expenditures and shows that, for those countries in which local governments have a significant responsibility for redistributive services such as social protection and health (Austria, Denmark, Finland, and Germany), dependence on the property tax is low.⁶ Local income taxes are more widely used in each of these countries. In other words, it appears that the

⁶ The data source for Tables I and 2 is different so not all countries appear in both tables.

	1965	1975	1985	1995	2005	2007	2008
Federal Countries	.,,,,	.,,,	1700	.,,,,	2005	200.	
Australia	1.42	1.36	1.32	1.35	1.37	1.37	
Austria	0.51	0.34	0.30	0.26	0.25	0.23	0.21
Belgium	0.01	0.23	0.29	0.38	0.41	0.39	
Canada	3.05	2.70	2.63	3.20	2.71	2.72	2.77
Germany	0.46	0.39	0.38	0.38	0.46	0.44	0.43
Mexico			0.05	0.20	0.18	0.17	
Spain	0.08	0.07	0.62	0.63	0.70	0.66	0.66
Switzerland	0.12	0.16	0.14	0.16	0.18	0.17	0.17
United States	3.39	3.17	2.48	2.82	2.86	2.89	2.90
Unitary Countries:							
Czech R.				0.26	0.17	0.15	0.14
Denmark	1.47	1.55	0.86	1.01	1.13	1.12	1.24
Finland			0.09	0.46	0.46	0.47	0.48
France	0.67	1.14	1.50	1.97	2.14	2.16	2.19
Greece	0.00	0.07	0.06	0.17	0.10	0.11	
Hungary				0.11	0.27	0.28	0.31
Iceland		0.90	0.88	1.26	1.36	1.58	1.67
Ireland	3.90	2.20	0.90	0.80	0.65	0.66	0.75
Italy	0.44	0.05		0.79	0.82	0.83	0.64
Japan	0.94	1.21	1.56	2.07	2.01	1.93	2.03
Korea		0.42	0.45	0.66	0.58	0.94	0.96
Luxembourg	0.40	0.20	0.19	0.11	0.09	0.08	
Netherlands	0.34	0.30	0.76	0.77	0.83		
New Zealand	2.10	2.00	1.99	1.73	1.78	1.85	2.01
Norway	0.18	0.16	0.19	0.30	0.23	0.28	0.31
Poland				1.01	1.29	1.17	
Portugal			·	0.36	0.56	0.63	0.66
Slovak R.					0.46	0.40	0.37
Sweden	0.01	0.00	0.42	0.84	0.92	0.85	0.76
Turkey					0.18	0.17	0.15
United Kingdom	3.41	3.76	3.85	2.96	3.27	3.21	3.27

Source: OECD, Revenue Statistics 1965-2008, OECD 2009.

Table 2. Distribution of Local Government Expenditures, Selected OECD Countries, 2006 (%)										
	General	Public	Economic	Env'l	Housing	Health	Recreation	Education	Social	Total
		order and		Protection	and		and		protection	expenditures
	services	safety	(mainly		community		culture			
F. J			transport)		amenities					
Federal Countries	0.1.1		0.47							
Australia	24.4	2.6	26.7	9.5	13.7	1.2	15.7	0.4	5.8	100.0
Austria	16.9	2.1	14.2	2.6	2.8	16.3	7.1	16.7	21.3	100.0
Canada	8.7	9.2	13.2	5.9	7.8	1.5	6.9	41.2	5.5	100.0
Germany	17.4	5.4	13.5	6.8	7.7	2.3		7.2	39.7	100.0
Spain	33.4	7.8	14.5	10.0	9.6	1.2	10.9	4.5	8.1	100.0
Switzerland	14.3	4.7	8.7	5.3	2.5	20.5	5.6	21.7	16.2	100.0
Unitary Countries:										
Czech R.	14.5	1.7	21.4	7.3	9.1	2.2	7.5	27.5	8.7	100.0
Denmark	6.1	0.3	4.7	0.9	0.4	20.4	2.7	12.9	51.5	100.0
Finland	14.0	2.1	6.1	0.7	0.4	28.4	4.6	20.5	23.3	100.0
France	19.2	2.8	13.1	6.9	15.2	0.6	10.2	16.2	15.8	100.0
Hungary	19.3	1.2	5.7	3.9	6.9	15.4	4.8	29.9	12.8	100.0
Iceland	10.2	0.9	11.7	2.4	4.5	0.8	17.3	37.2	15.0	100.0
Ireland	11.4	3.2	23.8	8.7	22.7	0.0	4.1	20.7	5.4	100.0
Italy	14.6	1.5	14.8	4.6	4.7	43.9	3.0	8.3	4.5	100.0
Luxembourg	20.9	1.7	15.9	12.1	7.6	0.3	13.1	24.6	3.9	100.0
New Zealand	18.3	0.5	35.0	21.3	7.3	0.0	12.1	0.0	5.5	100.0
Norway	10.7	1.0	6.5	3.6	4.2	15.2	4.8	28.4	25.6	100.0
Portugal	9.4	1.8	14.8	4.0	5.6	15.3	5.2	29.6	14.2	100.0
Slovak R.	17.5	1.0	15.9	6.2	9.9	0.3	7.1	35.4	6.6	100.0

Source: International Monetary Fund, Government Finance Statistics, Yearbook, 2007, Table 7.

	Taxes on income, profits, and capital gains	Taxes on payroll and workforce	Real property taxes	Other property-related taxes	Taxes on goods and services	Other taxes	Total tax revenue
Federal Countries	gains						
Australia	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Austria	31.2	20.7	5.1	5.9	32.4	4.7	100.0
Belgium	71.4	0.0	16.5	0.0	11.8	0.3	100.0
Canada	0.0	0.0	86.8	7.6	2.2	3.4	100.0
Germany	80.0	0.0	14.6	0.0	5.3	0.1	100.0
Mexico	0.0	0.2	52.2	36.4	1.5	9.8	100.0
Spain	22.8	0.0	21.0	8.0	44.3	3.9	100.0
Switzerland	84.6	0.0	2.5	12.7	0.2	0.0	100.0
United States	5.8	0.0	70.9	0.0	23.3	0.0	100.0
Unitary Countries:							
Czech R.	55.7	0.0	2.6	0.0	41.7	0.0	100.0
Denmark	90.4	0.0	9.5	0.0	0.1	0.0	100.0
Finland	94.7	0.0	5.2	0.0	0.0	0.1	100.0
France	0.0	6.8	40.4	10.5	18.4	23.9	100.0
Greece	0.0	0.0	26.1	30.3	43.6	0.0	100.0
Hungary	0.0	0.2	11.5	9.0	79.2	0.0	100.0
Iceland	73.6	0.0	15.4	0.0	10.9	0.0	100.0
Ireland	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Italy	21.5	0.0	11.7	1.4	29.5	36.0	100.0
Japan	55.5	0.0	24.7	1.2	17.7	0.9	100.0
Korea	17.0	1.4	14.5	33.3	21.8	11.9	100.0
Luxembourg	90.1	0.0	4.5	3.2	1.5	0.7	100.0
Netherlands	0.0	0.0	55.6	0.0	44.4	0.0	100.0
New Zealand	0.0	0.0	88.7	0.0	11.3	0.0	100.0
Norway	87.5	0.0	4.5	6.3	1.7	0.0	100.0
Poland	62.0	0.0	25.0	0.6	7.4	5.0	100.0
Portugal	21.6	0.0	28.5	26.0	23.1	0.9	100.0
Slovak R.	73.0	0.0	12.4	0.0	14.6	0.0	100.0
Sweden	100.0	0.0	0.0	0.0	0.0	0.0	100.0
Turkey	31.4	0.0	8.5	3.5	41.6	15.0	100.0
United Kingdom	0.0	0.0	100.0	0.0	0.0	0.0	100.0

Note: Data for the Netherlands are for 2005.

Source: OECD, Revenue Statistics 1965-2008, 2009, Tables 139-168 and OECD, Revenue Statistics 1965-2006, 2007, Table 157.

property tax is used to pay for "property-related" services and not "people-related" services. Table 3 shows that local governments that rely relatively heavily on the property tax have limited or no access to other taxes (for example, Australia, Canada, and the UK).

Dependence on the property tax also depends on the degree of freedom local governments have with respect to property taxation (for example, the authority they have with respect to setting the tax rates), the size and growth of the property tax base, and their willingness and ability to enforce such taxes. The next section considers some of these factors in more detail.

5. Problems with the Property Tax... In Practice

This section looks at the reasons why the property tax is underutilized: the unpopularity of the tax, the inelasticity of the tax base, the erosion of the tax base through exemptions and limits, and inadequate administration.

5.1 Unpopularity

The property tax is often regarded as the "most hated" tax (Brunori, 2003, p. 7). It is disliked by taxpayers, in part because it is a visible tax. As noted earlier, property taxes are not withheld at source and they finance very visible services such as roads, policing, and garbage collection. Visibility makes governments accountable for the tax and the services it provides ("I paid \$3,000 in taxes and my garbage was not picked up!") but it makes the tax difficult to sell politically and even more difficult to increase or reform relative to other taxes.

Unpopularity also stems from the potential for volatility and unpredictability of a tax that is based on market value (Sheffrin, 2010). Suppose a local government collects a fixed amount of property tax revenue to provide services. If the size of the tax base in the municipality increases, the tax rate will fall to maintain the same amount of total revenue. But revenue neutrality for the municipality does not mean that an individual taxpayer's property taxes will not increase (or decrease). If

the relative share of a homeowner's property value in the community increases, the property tax will increase even if the tax is revenue neutral. In some years, the tax could go up; in other years, it could go down.

"Property tax is often regarded as the most hated tax of all. It is an inelastic tax: that is to say, the base does not increase automatically over time, because property values respond more slowly to annual changes in economic activity than incomes"

Why would a property value increase more than average? Additions and renovations increase the value of property but so do changes in the neighbourhood that are beyond the direct control of individual taxpayers. For example, the location of a new (and desirable) business may make the neighbourhood more attractive and increase the value of houses in the vicinity. With market value assessment, there is the risk of potentially large annual swings in the distribution of the property tax burden in times when property values are rising rapidly and not uniformly (Haveman and Sexton, 2008). Different neighbourhoods will be "hot" in different years.⁷

Although the market value system provides a uniform and clear standard for distributing property taxes among taxpayers, uniformity may be at the expense of tax volatility. Anderson argues that homeowners consider it unfair that property tax bills can change with potentially no change in the value of their house or the services they receive. These events are one of the reasons for the demand for assessment and tax limitations. Taxpayers regard assessment limits as insurance against large property tax increases (Anderson, 2006). Another consequence of this unpopularity is low tax rates — tax rates tend to range from only 0.5 percent to 1.0 percent of market value.

5.2 Inelasticity

The property tax is an inelastic tax -- the base of the tax does not increase automatically over time, because property values respond more slowly to annual changes in economic activity than incomes. Furthermore, very few jurisdictions around the world update property

values for taxation purposes on an annual basis. The result of lagging assessed values is that, to maintain property tax revenues in real terms or to raise property tax revenues, jurisdictions have to increase the rate of the tax. As with visibility, inelasticity leads to greater accountability (taxing authorities have to increase the tax rate to increase tax revenues), but it also leads to greater taxpayer resistance. The resulting imposition of assessment limitations, tax rate limits, and exemptions have further diminished its elasticity ... and the horizontal equity of the tax (Bahl, Martinez-Vazquez, and Youngman, 2010, p. 5).

5.3 Tax Base Erosion

The property tax base is declining in some jurisdictions because of explicit policy decisions to limit the use of property taxes by local governments through exemptions, tax and expenditure limits, and tax incentives (to attract business). Narrowing the property tax base means that tax rates have to be higher to collect the same amount of revenue. Higher tax rates increase the excess burden of the property tax and make the tax even more unpopular.

In every country, some properties are excluded from the property tax base (Bird and Slack, 2004). Although there is great diversity in the use of exemptions, some properties are exempt in most jurisdictions -- government properties, educational institutions, churches and cemeteries, public hospitals, charitable institutions, public roads, parks, libraries, foreign embassies, and property owned by international organizations. In some countries, agricultural land and principal residences are also tax exempt.

"The property tax base is declining in some jurisdictions because of explicit policy decisions to limit the use of property taxes by local governments, through exemptions, tax and expenditure limits, and tax incentives"

Exemptions reduce the size of the tax base and either result in higher taxes on the remaining taxpayers or a reduction in the level of local services. Exemptions also are inequitable and inefficient. Differential tax treatment means that owners/managers in taxed properties face higher costs than owners/managers of exempt properties. This differential will have implications for economic competition among businesses and between businesses and government (Kitchen and Vaillancourt, 1990). To the extent that people working in tax exempt buildings use municipal services just as workers do in other buildings, they should be taxed (Bahl

⁷ The problem of increasing market values is exacerbated for those who argue that the increased wealth is not realized until the asset is sold so that property taxes are increasing without additional income to pay them (Fisher, Bristle, & Prasad, 2010, p. 196). The holdings of other forms of property (e.g. stocks or other financial assets) are taxed upon realization.

and Linn, 1992, p. 100). Differential tax treatment also affects location decisions, choices about what activities to undertake, and other economic decisions. Finally, since the proportion of taxexempt properties varies by municipality, disproportionate tax burdens are created across communities. This result is especially troublesome when higher-level governments determine what is exempt from local taxation.

> "Tax incentives can lead to unfair competition between businesses and can lead to a situation where no major investments occur without them. Tax competition can result in inefficiently low taxes and public services"

Tax and expenditure limits limit the ability of local governments to raise property taxes by capping increases in assessment, tax rates, tax revenues, or expenditures. Limits are widely used in the US most states impose them on local governments – but property tax ceilings and caps are used in European countries as well (Brown and Hepworth, 2002). The greater the increase in property values and the lower the assessment increase permitted, the greater will be the erosion of the property tax base.

Although popular with taxpayers, tax and expenditure limits have severely constrained the growth in property tax revenue in US local jurisdictions and resulted in limited spending on local public schools and lowered educational outcomes (Yuan and Cordes, 2009). Moreover, they are probably the least effective, equitable, and efficient strategies for providing property tax relief (Sexton, 2009). Assessment limits are inequitable because properties with similar market values may not be paying the same taxes. Assessment limits shift the property tax burden from those properties whose values are increasing rapidly to those properties whose values are stagnant (Slack, 2010). Assessment limits until time of sale shift the property tax burden from those who have owned property for a long time to recent buyers (Winters, 2008).

Assessment limits also complicate the administration of the property tax and create confusion among taxpayers because the taxes paid are no longer calculated simply as a tax rate multiplied by the tax base. Moreover, there is less incentive to review one's assessment if it is not being used to calculate taxes. If one of the reasons for the volatility has to do with assessment errors, these errors will never be corrected. And, it is very difficult to remove a freeze: "once a freeze is imposed, the process of thawing may be too painful to bear". (Youngman, 1999a).

Property tax incentives designed to stimulate economic growth are also used widely in the U.S. A study of property tax incentives in the U.S. indicates that over 40 states allowed for these incentives in 2007 (Wassmer, 2007). The goal set out for most of these incentives is to increase employment and/or income generated in the jurisdiction and, in many cases, to increase the property tax base of the jurisdiction and property tax revenues.

It is not clear how effective these incentives are nor how equitable. Some authors believe that tax incentives are justified because the firms that receive them provide benefits to the community that exceed the costs to the municipality both for business services and environmental degradation caused by the businesses (Glaeser, 2002) (Garcia-Mila and Mc Guire, 2002). Others believe that property tax incentives can result in a zero-sum game whereby development at one location is at the expense of development at another location and incentives are wasted on firms that would have located there anyway (Wassmer, 2007). Moreover, tax incentives can lead to unfair competition among businesses and can lead to a situation where no major investments occur without them. Tax competition can result in inefficiently low taxes and public services. A number of studies argue that lowering non-residential property taxes for all businesses in the municipality is preferable to tax concessions to any specific business (Wasylenko, 1997). In any event, tax incentives reduce the size of the tax base and necessitate tax rate increases to maintain tax revenues.

5.4 Poor Administration

How well land and property taxes are administered not only impacts how much revenue is collected but also affects the equity and efficiency of the tax. Three key steps are involved in the process of taxing real property: (1) identification of the properties being taxed, (2) preparation of a tax roll (which contains a description of the property and the amount of assessment) and responding to assessment appeals, and (3) issuing tax bills, collecting taxes, and dealing with arrears.8

> "Fair and productive property taxes require periodic revaluation to reflect changes in value in order to maintain the legitimacy of the tax and reduce the risk of sudden, dramatic shifts in tax burdens due to large increases in assessed values"

For the costs of local government to be shared fairly among taxpayers, property taxes have to be based on assessments that are uniform within each jurisdiction. Although based on manuals, property

⁸ For more details on the administration of the property tax, see (Bird & Slack, 2004).

Country	Tax	Taxable item			Basis of Valuation			Revaluations
		Land	Buildings	Plant	Rental	Capital	Area	
Austria	Real estate tax	X	X			X		Values are indexed
Belgium	Revenu cadastral	X	X	X	X			10 years; postponed
Denmark	County real estate tax Municipal real	X				X		4 years; annual indexation
	estate tax Tax on comm'l bldgs.	X	×			×		
Finland	Real property tax	X	X			×		Annual
France	Property tax Property and land tax Business tax	X	× × ×	×	× × ×			3 years but revaluations have been postponed; annual indexation
Germany	Real estate tax	X	X			X		6 years but no revaluation since 1964
Ireland	Rates	X	X	X	×			5-10 year rolling revaluations
Italy	Communal real estate tax	X	X		×			Not specified
Netherlands	Onroerend- Goedbelasting	X	X			X		4-year rolling revaluation
	Waterschap levy	X	X			X		
Portugal	Immovable property tax	X	X	×				Annual indexation
Spain	Local property tax	X	X			×		Annual indexation
Sweden	Real estate tax		X			X		4-year rolling revaluations
Switzerland	Municipal business tax	×	×		X			Annual –based on rent and profit
England and Wales	Non-domestic rates Council tax	X	×	X	X	X		5 years Not specified
Scotland	Non-domestic rates Council tax	X	×	×	X	X		5 years Not specified

Source: (Brown and Hepworth, 2002), (Almy, 2001).

assessment is inherently an arbitrary process. People do not perceive the assessment system to be uniform or fair. As Bahl and Martinez-Vazquez note, "a proposed increase in the tax rate on a base that is determined in uncertain or even mysterious ways is bound to provoke negative reactions" (Bahl and Martinez-Vazquez, 2008, p. 43). Fair and productive property taxes require not only a good initial assessment but also periodic revaluation to reflect changes in value. Frequent valuations maintain the legitimacy of the tax and reduce the risk of sudden, dramatic shifts in tax burdens from large increases in assessed values. For these reasons, the valuation cycle needs to be fairly short.

Table 4 compares the characteristics of the property tax in several European countries. In most of these countries, both land and buildings (or "improvements) are taxed. In some countries, machinery (or "tangible business assets") is also taxed. In all of these countries,

properties are assessed on the basis of market value or rental value. Area-based assessment (where the assessment is based on the size of the land and building) is not used in Western Europe, although it is widely used in Eastern Europe. Table 4 highlights the great diversity across countries with respect to the frequency of reassessment ranging from annual to infrequent. The general range is from 3 to ten years. Of course, the time periods mentioned in the table are those specified in legislation and, in many instances, the pace of revaluation in reality is much more ad hoc.

Many countries have no provision for regular revaluations of the tax base or have postponed revaluations. In Austria, for example, the assessed value is only between 10 and 20 percent of the market value.

⁹ See (Bird & Slack, 2004) for a more information on the advantages and disadvantages of value-based versus area-based taxation.

As a result, assessed values bear little relationship to market value or annual rental value (Brown and Hepworth, 2002, p. 40). Indexing (e.g. by the rate of inflation) is common in continental Europe but it is not as good as a full-scale reassessment because property values change at a different rate in different neighbourhoods and for different property characteristics. Fairness is not achieved when property assessments are merely increased by a common factor on an annual basis and the lack of regular revaluations undermines the confidence of taxpayers in the property tax system.

Why are assessments so out of date in so many countries? One possibility is the cost associated with regular reassessments, which includes computer software and support, training and availability of in house staff, and training and availability of local contract appraisers (Dornfest, 2010). It should not be surprising that the process of obtaining valuations that are close to market value on a regular basis is expensive. Indeed, to administer a property tax at the same level of fairness as most other major taxes is a relatively costly operation (Bird and Slack, 2006). Another reason is that opposition from taxpayers who benefit from entrenched inequities encourages legislative neglect (Almy, 2001). There is a science to the assessment of property but there is also a resistance to follow good assessment practices (Bahl, Martinez-Vazquez and Youngman, 2010, p. 5).

6. Can the Property Tax be Reformed?

The residential property tax is a good tax for local governments, yet it is not a major source of revenue for local governments in many countries. Political pressure to keep property taxes down and to favour certain types of properties over others (with exemptions or lower tax rates) has resulted in low tax revenues. Added to low tax rates and tax base erosion are poor assessment practices that have reduced many of the potential benefits of the property tax. Taxpayers have to have confidence in the assessment system so efforts need to be devoted to doing it right... and frequently.

Property tax reform, in countries that have tried it, has been difficult, however (Bird and Slack, 2004). 10 The reason is that, no matter how economically desirable the long run outcome of property tax reform may be in terms of the equity and efficiency of the tax, its transitional effects may be sufficiently undesirable in political terms to kill it. In short, there will always be winners and losers from tax reform: those who were relatively over-taxed before the reform was implemented will pay less taxes; those who were relatively under-taxed before the reform will pay more taxes. The losers from a change in policy tend to be very vocal (even if they are the minority) because they value their losses more than the winners (even if they are the majority) value their gains. Furthermore, where the losses are concentrated and the gains are dispersed, as is often the case with tax reform, negatively affected interests will be motivated to spend time and resources in

"Property tax reform has been difficult. No matter how economically desirable the long run outcome of property tax reform may be in terms of the tax's equity and efficiency, its transitional effects may be highly undesirable in political terms"

political action that can result in permanent, institutionalized groups (for example, office towers, hotels, seniors, waterfront properties) in opposition to reform.

Another problem with tax reform is that there is widespread suspicion that any change in tax policy will be used by governments to raise the aggregate level of taxes so that the number of losers and the magnitude of the losses outweigh the number of gainers and the magnitude of the gains. In short, the public perception is that tax reform is not revenue neutral - a perception which, at least in the cases where the goal of reform is to increase revenues, is often correct.

The success of property tax reform will depend on public education --- taxpayers need to understand how their assessments are calculated. They need to know what will happen if their assessment increases. Will property taxes automatically increase or does it depend on what happened to other assessments in the city? Will tax rates decrease if assessment increases? What services are funded by the property tax?

If property tax reform is expected to result in major tax shifts among taxpayers, the success of the reform will also depend on the introduction of some form of phase-in mechanism. Phase-ins are almost invariably politically necessary to cushion the impact of reform. Some form of relief is also needed for low-income taxpayers. Property tax credits (or circuit-breakers) that relate property taxes to income are best at designing relief to low-income taxpayers. For elderly taxpayers who have seen their property values increase but their incomes remain fixed, some form of tax deferral would be appropriate.

The property tax, at least the residential property tax, is a good tax for local government but there is room to improve the tax and increase the revenues collected. Property taxes are difficult to reform, however, because politics generally outweighs economics in this very visible tax and the losers from tax reform tend to be more vocal than the winners. In any event, the property tax will never be able to do the whole job, especially for local governments that are doing more than providing propertyrelated services and where a mix of taxes is appropriate. It can, however, be utilized more heavily in most countries than it is at the present time.

¹⁰ For a discussion of property tax reform in one Canadian province, see (Slack, 2002)

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Local Equalization Grants: Purpose, Efficiency Effects, and Design¹

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I. Introduction

Public services like education, health, welfare, and infrastructure are important for poverty relief, for providing equal opportunities, and for long term economic growth. In many countries around the world the bulk of these services are provided by subnational governments. In federal countries these tasks are typically assigned to states or provinces, while in many unitary countries they are assigned to local governments (municipalities or counties).

Several justifications can be made for decentralized service provision. States and local governments may be better informed about benefits and costs of policy programs, and decentralized provision may therefore promote allocative efficiency. This is the essence of the so-called "decentralization theorem" developed by Oates (1972). Mobility between local governments (Tiebout 1956) may further increase allocative efficiency by making communities more homogeneous.

Moreover, decentralization may promote cost efficiency by giving voters opportunity to move out of inefficient communities and through yardstick competition.

A main challenge with decentralization is that it will bring about variation in fiscal capacity and thereby variation in service provision. Variation in service provision may in turn lead to inequality of opportunity and more regional variation in long term economic growth. The

role of equalization grants is to limit the variation in fiscal capacity and contribute to more equalized service provision throughout the country.

This paper discusses equalization grants to state and local governments. It starts out in section 2 by reviewing the arguments for equalization grants. Although the main argument for equalization grants is equalization, it is emphasized that they also may be efficiency enhancing. This does not imply that the usual trade-off between

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equity and efficiency does not apply to equalization grants. Possible efficiency problems related to equalization grants are discussed in sections 3 (tax equalization) and 4 (spending needs equalization). Section 5 is devoted to the design of equalization grants. The key issue is whether they should be paid out as general grants or earmarked grants, and how this assessment depends on the regulatory setting. Finally, section 6 provides some concluding remarks.

In the rest of the paper I use the term national government for the grantor upper level government and local government for the recipient lower level government. I acknowledge that this choice of terms may delude some readers to think that the context is a unitary state. However, that is certainly not the case. The discussion also applies to federations and the relationship between federal and state governments, as well as the relationship between state and local governments.

2. The Purpose of Equalization Grants

The principle of horizontal equity (Buchanan, 1952) is the natural starting point for a discussion of equalization grants. This principle states that identical households should not be treated differently depending on their place of residence. This means that two identical households that pay the same amount of taxes should receive the same level of public services wherever they reside. It is an obvious conflict between fiscal decentralization and horizontal equity because the ability to provide a given level of services for the same tax rate will vary across local governments. The revenue-raising capacity will differ because of variation in per capita tax bases, and the per capita costs of providing a given service level will differ because of variation in needs and unit costs. The role of tax and spending needs equalization is to put local governments on more equal footing by equalizing the ability to provide a given level of services for the same tax rate.

The principle of horizontal equity does not distinguish between different types of publicly provided goods, but in practice the type of goods provided by subnational governments is of importance. Equalization grants are more widespread and more ambitious when subnational governments have substantial responsibilities for services like education, health, and welfare. These goods are not local public goods in the traditional sense, but redistributive services that serve equity purposes (Boadway 2006, p. 357). From a national perspective comparable provision of such services throughout the country is often an important policy objective, and

"The role of tax and spending needs equalization is to put local governments on a more equal footing by equalizing the ability to provide a given level of services for the same tax rate"

fiscal equalization can be understood as a mean to achieve that objective. This line of reasoning is similar to Musgrave's (1959, p. 183) "entirely different view" on federalism where "fiscal federalism is interpreted to be an assurance to each citizen of the federation that special social needs such as elementary education will be provided adequately in all states."

"The primary objective of equalization grants is to achieve horizontal equity, but they may also reduce unproductive competition between local governments and intensify productive yardstick-competition"

Although the primary objective of equalization grants is equalization, either to achieve a degree of horizontal equity or more narrowly to achieve more similar provision of welfare services, they may also promote efficiency. A first argument is that if decentralized service provision is considered to be more efficient than centralized provision (for example for the reasons stated in the introduction), equalization grants make it possible to reap efficiency gains without incurring large costs in terms of reduced equity.

Second, equalization grants may reduce unproductive competition between local governments. Consider a community with wealthy individuals that is able to provide good services even with low taxes. This community will clearly be an attractive place of residence, but in the absence of equalization grants, inmigration of poor and costly individuals will erode the tax base and the good services. Consequently, local governments may engage in a competition to avoid inmigration of such people. From a national perspective this competition is largely unproductive – the poor and costly have to reside somewhere.

Third, yardstick competition may be more effective with equalization grants. Yardstick competition means that voters compare the performance of their government with the performance of neighboring governments. In the absence of equalization grants, such comparison may be difficult. It is hard to tell to what extent

good services and/or low taxes are the result of governmental efficiency and to what extent they are the result of high fiscal capacity. Equalization creates a "level playing field" that can make yardstick competition more efficient since good services and/or low taxes to larger extent signals governmental efficiency.²

So far one may get the impression that usual trade-off between equity and efficiency does not apply to equalization grants. It rather seems to be a double dividend – equity and efficiency can both be achieved at the same time. This is however, not the case. But in order to discuss distortive effects of equalization grants, it is useful to discuss tax and spending needs equalization in greater detail.

3. Tax Equalization

Variation in per capita tax base is an important source of variation in fiscal capacity. Two local governments using the same tax rate may end up with very different tax revenues per capita if the difference in per capita tax base is large. Moreover, a local government with a low per capita tax base may have relatively low per capita tax revenues even with a high tax rate. And a local government with a high per capita tax base may have relatively high per capita tax revenues even with a low tax rate. The role of tax equalization is to make per capita tax revenues more comparable for local governments using the same tax rate.

Tax equalization may be designed in different ways. A rather general formula is the following

$$TE^{j} = a \cdot t^{*} \cdot (TB^{R} - TB^{j}), t^{*} = t^{j}, t^{R}$$

where TE^j is the tax equalization grant to local government j, TB^j is it's per capita tax base, TB^R is the reference tax base, t^* is a tax rate, and a the rate of compensation. The reference tax base is typically defined as the average tax base or a fraction thereof. The tax rate t^* could either be the local government's own tax rate (t^i) or a standardized or reference tax rate (t^R) determined by the national government. The rate of compensation determines the fraction of the difference in (calculated) tax revenues that are equalized.

A first alternative is to lift the bottom by providing grants to local governments with per capita tax base below the reference level and to set the tax equalization grant equal to zero for those with tax base above. The tax equalization is asymmetric in the sense that equation [1] only applies to local governments with per capita tax base below the reference level. Another alternative is a more symmetric tax equalization scheme where equation [1] applies to

 $^{^{2}}$ Kotsogiannis and Schwager (2008) provide a formal analysis and also identify a counteracting effect.

 $^{^{3}}$ The standardized tax rate could for example be the average tax rate in the country.

all local government. Local governments with per capita tax base above the reference level will then be contributors, i.e. they receive negative grants. For a given rate of compensation, a symmetric equalization will be more ambitious than an asymmetric one.

"The role of tax equalization is to make per capita tax revenues more comparable for local governments using the same tax rate"

It is important to emphasize that tax equalization requires a degree of national coordination of local taxes. Tax equalization cannot be carried out in a meaningful way if local governments rely on very different taxes (property, income, wealth, etc) or if they define the tax base in very different ways (e.g. different assessment practice). It makes little sense to provide tax equalization to a local government that has a low property tax base simply because the assessed property value is very low compared to the market value. The most streamlined tax equalization would be based on a national tax system where the tax base is defined and calculated by national authorities, and where the local tax simply is a piggy-back on the national tax base.

"Tax equalization raises several efficiency problems: the weakening of incentives for local development policy and the distortion of the tax level and the tax structure when it is based on the local government's own tax rate"

Tax equalization raises several efficiency problems that may distort efficiency. The first, and perhaps most obvious problem, is that tax equalization weakens the incentives for local development policy by weakening relationship between the local tax base and local government revenue. It is easily seen from equation [I] that the national government will "punish" a successful development policy⁵ by reducing the tax equalization grant. Similar arguments can be made with respect to incentives for tax collection and tax assessment.

In addition to equalization of tax revenues, tax equalization also provides insurance. A negative shock to the local tax base is (partly) compensated by grants from the national government. The quantitative importance of the insurance mechanism can be illustrated by utilizing equation [1] to calculate the sum of tax revenues (TRI) and equalization grants:

$$TR^{j} + TE^{j} = t^{j} [(I-a) TB^{j} + aTB^{R}]$$
 [2]

It is evident from equation [2] that the effective tax base under tax equalization is a weighted average of the local government's own tax base (*TB*) and the reference tax base (*TB*^R). The insurance towards shocks to the local tax base is higher the higher the rate of compensation. If the rate of compensation is high the tax equalization scheme in effect creates a national insurance pool. The revenues of an individual local government are first and foremost affected by the national tax base, while the development of its own tax base only plays a minor role.

When the national government provides insurance through the tax equalization scheme, the need for precautionary actions by local governments is reduced. In particular the incentives to build up rainy-day-funds to handle periods of low tax revenues are reduced.

Finally, tax equalization may distort the tax level and the tax structure when it based on the local government's own tax rate. It is then evident from equation [I] that the tax equalization grant is higher the higher the local tax rate. Tax equalization can be interpreted as a subsidy on local tax increases that may lead to too high tax rates. Moreover, if the equalization does not apply to all local taxes, the local government can increase their tax equalization grant by shifting tax revenues towards the taxes that are equalized. In other word, local governments have incentives to over-utilize taxes that are equalized and to under-utilize taxes (and other revenue sources) that are not equalized. These distortive effects for tax level and tax structure can be avoided by basing the tax equalization on a standardized tax rate instead of the local government's own tax rate.

The fact that tax equalization grants may be distortive does not imply that they should be abolished all together. We are rather back to the familiar case with a trade-off between equity and efficiency, and where the optimal rate of compensation is less than 100 percent.

4. Spending Needs Equalization

The motivation for spending needs equalization is that equalization of per capita revenues (achieved through tax equalization) is insufficient to equalize service provision. The reason is that per capita costs of providing a given service level

⁴ When there is little national coordination of local tax bases, the so called macro approach (Boadway and Shah, 2007) is a possible way out. The approach would use indicators such as consumption or household income to measure the potential fiscal capacity of local governments. However, available indicators would be imperfect measures of the ability of local governments to raise revenues.

⁵ A successful development policy is a policy that increases the per capita tax base (TEj).

 $^{^6}$ For simplicity it is assumed that the tax rate t* in equation [1] is the local government's own tax rate.

will differ because of variation in demand and unit costs. The role of spending needs equalization is to compensate for cost and demand factors. Empirical analyses are used to identify relevant cost and demand factors and to quantify their (relative) importance. It is a standard requirement that the compensating factors should be objective criteria that cannot be directly affected by the local governments.

"The role of spending needs equalization is to compensate for costs and demand factors. The criteria used can be divided into three groups: age composition, social factors, and cost factors"

The criteria that are used in spending needs equalization can broadly be divided into three groups; (i) age composition, (ii) social factors, and (iii) cost factors. The age composition of the population affects the demand for public services, in particular when the local governments are responsible for services like child care, education, and care for the elderly that are directed towards specific age groups. Health care is also a service where age is an important demand factors. Social factors are other variables than age affecting the demand for services. Social factors include unemployment, poverty, divorce rate among others, and will typically affect the demand for transfers and social services. Cost factors are criteria that affect the unit cost of public services. A prime example is that small and sparsely populated communities may have cost disadvantages due to diseconomies of scale. Regional labor market conditions affecting the public sector wage is also a relevant cost factor:

Should we be concerned about any efficiency problems related to spending needs equalization? The answer to this question depends on the type of criteria. The concern is least for the age composition of the population, in which case it rather can be argued that spending needs equalization promotes efficiency. In the absence of spending needs equalization, local governments have incentives to reduce service standards to avoid inmigration of age groups that are high demanders of public services. But as argued above, this competition among local governments is unproductive from a social perspective since the "expensive" age groups have to reside somewhere. Compensation for an "expensive" age composition should be regarded as a necessary condition for decentralization of welfare services such as child care, education, health, and care for the elderly.

The competition argument can also be applied to the social factors, but this case is more complicated. The reason is that providing social services and transfers to the poor and the unemployed is not the only task of the local governments. It will also be their responsibility to reduce poverty and unemployment. So if they are compensated

for higher expenses related to social factors, the incentives to prevent poverty and unemployment are reduced.

Compensation for cost factors is the most problematic from an efficiency perspective. Several arguments come into play here. First, it is not necessarily socially optimal to provide the same level of services in high-cost communities as in low-cost communities. Even from a social perspective it makes sense to provide most services in the areas where the unit cost is the lowest. Second, it can be questioned whether the cost factors are objective. Population size can be affected through voluntary amalgamations and the settlement pattern through land-use regulation (an important local government responsibility in most countries). As a consequence, compensation for such cost factors may obstruct the development of a more efficient local government structure and settlement pattern.

The efficiency problems do not imply that spending needs equalization should be abolished. As for tax equalization, the efficiency problems related to social factors and cost factors call for less than full compensation. Age composition however, should be fully compensated.

5. Design of Equalization Grants

Intergovernmental grants come in different types. It is usual to distinguish between general grants, categorical block grants, and matching grants. General grants and categorical block grants are similar in the sense that they are based on objective criteria, but they impose different requirements on the recipient government. General grants have no strings attached, while categorical block grants must be spent on a specified service or activity. Matching grants differ from general grants and categorical block grants by being directly related to spending or service provision, either as a percentage of total spending in a particular spending category or as a specific amount per service provided.

How should equalization grants be designed, as general grants, categorical block grants, or matching grants? A first answer to this question departs from the observation that equalization grants are for equalization, not for affecting local priorities. This observation rules out categorical block grants and matching grants, of which both are intended to affect local priorities, and leaves us with the guideline that equalization grants should be designed as general grants. In the following this recommendation is denoted the textbook design.

The working of the textbook design is that the national government puts the local governments on a more equal footing by the use of equalization grants. The equalization grants are distributed as general grants that the local governments are free to spend as they like. This means that the national government has no control over local priorities. Should that be a concern for the central government? It depends both on the type of services provided by local governments and the degree of preference variation.

Table 1. Alternative designs of equalization grants					
	Textbook	Nordic	Model A	Model B	Model C
Equalization grants	General	General	Categorical block grants	Categorical block grants	Matching grants
Direct regulation	No	Substantial	Limited	Limited	Limited
Role of local taxation	Substantial	Substantial	Substantial	Limited	Substantial

Source: Own elaboration.

"Intergovernmental grants come in different types: general (with no strings attached), categorical block (which must be spent on a specified service or activity) and matching grants (directly related to spending in a particular category or service provision)"

In the textbook design local governments provide local public goods. Then there is little need for the national government to be concerned about local priorities. But if the local governments are heavily engaged in provision of redistributive services like education, health, and welfare, it is more of a concern. For such services a common national standard may be warranted. Then the textbook design may generate too large variation in provision of individual services even if local governments' fiscal capacities are equalized. This problem is most severe if there is large variation in preferences across local governments. And even if there is little variation in preferences across local governments, it may be a problem that local priorities differ from the national policy objectives.

Throughout the 1980s and 1990s the Nordic countries adopted the textbook design by implementing major block grant reforms. The reforms implied that a large number of earmarked grants were replaced by general grants. It is fair to say that the textbook design has worked pretty well. Although the block grant systems are criticized from time to time, very few want to turn back the clock to the more complicated and less transparent grant systems that were in place before the reform.

The local governments in the Nordic countries are responsible for most redistributive services within education, health, and social services. Moreover, it is widely agreed that there should not be too large variation in provision of these services. So, why does the textbook design work? Based on the above discussion, the answer is that there is little variation in preferences, both across local governments and between the national and the local level. It is certainly true that the Nordic countries are among the most homogeneous countries in the world, and that the textbook design therefore fits the Nordic context particularly well. Still, this is only

a partial answer that misses another important point, regulation of the services through national legislation. National laws are in place for the main services provided by local governments, i.e. there are laws on child care, education, health care, social services, etc. These laws specify responsibilities for local governments and what the inhabitants can expect in terms of services. The laws are accompanied by more detailed administrative regulations worked out by the corresponding ministries. A more complete answer is therefore that the textbook design works both because of little variation in preferences and because of extensive legal regulation.

With the Nordic case as a background, I now turn to a discussion of possible alternatives designs. The alternative models are to be understood as different ways of affecting local priorities in cases where direct regulation is limited or absent. The three alternative models are displayed in table I (along with the textbook design and the Nordic model), and differ with respect to the design of equalization grants. In addition to grant design and regulation, I have added a row for the role of local taxation. The reasons are that local taxation usually is considered to be an important element of fiscal federalism that underscores the autonomy and accountability of local governments, and that the alternative models offer different room for local taxation. In the Nordic countries equalization through general grant and direct regulation of services is combined with substantial tax financing.

The first alternative is model A with substantial tax financing and little regulation, and where equalization is designed as categorical block grants to affect local priorities. A main weakness by this model is that the earmarking is too weak given the substantial tax financing. The local governments can easily neutralize any attempt by the national government to affect local priorities. Consider a situation where the national government aims at increasing spending on health care at the expense of education. To achieve this goal it increases the health care grant and reduces the grant for education. However, the local governments can completely undo the effect of the new grant policy by reallocating tax revenues from health care to education. This means that in model A categorical block grant work as general grants, and the only difference compared to the Nordic model is that direct regulation is lost as a tool to affect local priorities.

⁷ The relationship between legal regulation and grant design is also discussed by Blom-Hansen (2009).

⁸ This view is challenged by McGuire (2001).

Model B is similar to model A in the sense that equalization is done through categorical block grants and that there is little regulation of the services. The difference is that model B has less tax financing. If the share of taxes in local revenues is sufficiently low, the local governments are unable to completely undo changes in the composition of the categorical block grants. Compared to model A, the influence over local priorities is to some extent shifted over to the national government.

"Since equalization grants are for equalization and not for affecting local priorities, they should be designed as general grants. However, it may be legitimate for the national government to have some control over local priorities, particularly when local governments provide redistributive services"

In model C the national government uses matching grants to affect local priorities. Since matching grants affect relative prices, they will have an impact on local priorities even with substantial tax financing. However, the system of matching grants needs to be quite complicated, as the matching rates must be differentiated both across services (to affect local priorities)9 and across local governments (to achieve equalization). The matching rates should on average be highest for services that the local governments give the least priority relatively to the national policy objective. And the matching rates should be higher for local governments with high spending needs and a low tax base than for local governments with low spending needs and a high tax base. Variation in local preferences would complicate things further by producing a second argument for differentiation of matching rates across local governments. The reason is that a uniform matching policy (across local governments) cannot achieve the same national objective in all local governments when there is variation in preferences across local governments.

Given that some control over local priorities is warranted, the remaining candidates are the Nordic model and models B and C. All three models give the national government some influence over local priorities, but in each case that comes at a cost. First, the cost associated with the Nordic model is that local flexibility may be severely reduced if the regulations become too detailed.

In practice it is often easier to regulate inputs than outputs, and as a consequence, the emphasis of the policy making may be shifted from outputs to inputs. Second, the main problem with model B is the limited tax financing that may reduce autonomy and accountability of local governments. Third, with model C the grant system becomes complicated and less transparent as the matching rates must be differentiated across services and across local governments. Moreover, the computation of optimal matching rates requires detailed information on how local governments respond to changes in matching rates.

It is not straightforward to rank the competing models on the basis of these qualitatively very different costs. However, it could be argued that the limited tax financing associated with model B is a fundamental blow to local autonomy and local democracy. If one accepts this argument, we are left with the Nordic model and model C. Personally I would then pick the Nordic model for two reasons; the grant system will be much simpler and more transparent, and also more robust to variation in local preferences that are difficult to observe. The strength of the Nordic model is that national policy objectives are expressed through regulations that impose an adequate level of services in all local governments.

6. Concluding Remarks

The paper has discussed purpose, efficiency effects, and design of local equalization grants. The main purpose of equalization grants is to equalize the fiscal capacity across local governments and thereby contribute to comparable provision of public services throughout the country. The case for equalization grants is particularly strong when local governments are assigned responsibility for redistributive services where equalized service provision is a national policy objective. Equalization grants may also be efficiency enhancing by facilitating decentralization, by reducing unproductive competition to get rid of poor and costly individuals, and to intensify productive yardstick competition.

"Equalization grants may be designed as categorical block grants or matching grants in cases where direct regulation is limited or absent"

However, the standard trade-off between equity and efficiency also applies to equalization grants. Tax equalization reduces the incentives to develop the local tax base and to build up rainy-day-funds, and it may also distort the tax structure and the level of taxation. The case for spending needs equalization is strongest for criteria capturing the age composition of the population,

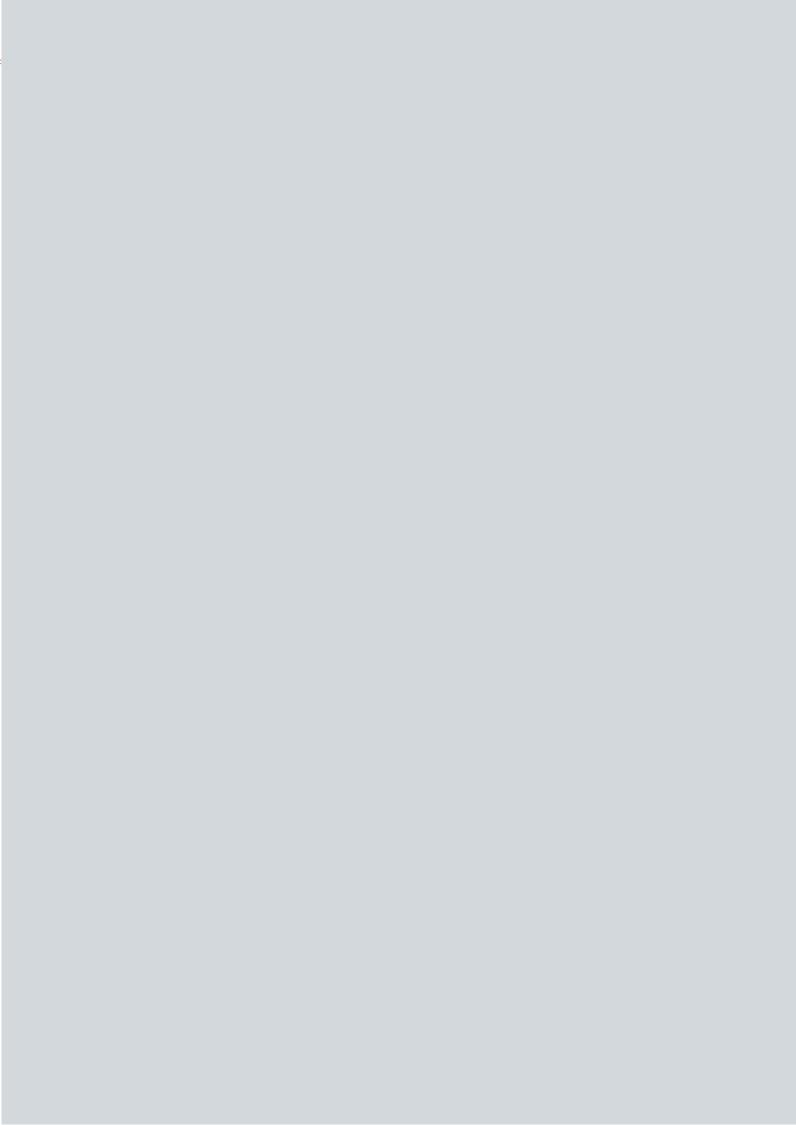
⁹ Uniform matching rates across services would only affect the relative price between public and private consumption. This would be sufficient if the local governments only provide one service (e.g. independent US school districts) or if the disagreement between the national and the local level only relates to the priorities between public and private goods.

while compensation for other factors may be more problematic. Compensation for social factors may reduce the incentives to prevent social problems, and compensation for cost factors may obstruct the development of a more efficient local government structure and settlement pattern.

Since equalization grants are for equalization and not for affecting local priorities, they should, as a first principle, be designed as general grants. However, given that local governments are heavily engaged in provision of redistributive services, it may be legitimate for the national government to have some control over local priorities. National policy objectives can be achieved through direct regulation, categorical block grants, or matching grants, but in each case national control comes at a cost. It is argued that the Nordic model with direct regulation may be preferable since it facilitates substantial tax financing and a simple and transparent grant system, and is robust to variations in local preferences.

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Policies of Earmarking Grants to Sub-National Governments

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I. Introduction

It is a widely held view that earmarking of grants to sub-national governments restricts local freedom in undesirable ways and should be avoided. However, data from the OECD as well as from the Council of Europe seem to suggest that earmarking is widespread and has increased in many countries. The perceived negative effects apparently have had limited measurable effects on national policies

of grants to sub national governments. Though there are doubts what the international statistics really tells us they leave little doubt that the use of earmarking is widespread. This paper discusses the value of statistics, the policies, and the framework for analysis of fiscal federalism.

2. Earmarking, Arguable
Un-Desirable but Much

Earmarking of grants³ to subnational governments has for long been criticised. The arguments (in particular against conditional grants) have been that they distort local allocations in unforeseen ways, they prevent coordination and flexibility at the local level, they present administrative problems of control, they weaken central expenditure control relative to the influence of the specific ministries, they go to the rich municipalities who can afford to pay their



- ² Jorgen.lotz@lite.dk Consultant to the Council of Europe. The views expressed in the paper are not necessarily shared by the CoE. I am grateful for useful comments from Junghun Kim.
- ³ National legislations may also allow for earmarked local tax revenues. This paper deals only with earmarking of grants to sub-national governments but many of the considerations on grants also apply to the relationships between legislator and the sub-national governments allowed only to spend certain local tax revenues for earmarked purposes.

Box I. The European Charter on grants policies.

The guidelines of the Council of Europe on local finances were adopted and signed by the member governments in the "Charter on Local Government Self-determination" (Council of Europe, 1985) and have as such become not only an economic but also a political and legal issue.

The Charter advises against the practice of earmarking grants to sub-national governments, and the ministerial guidelines as revised in 1996 (CoE, 1996) now read: "A substantial part of state assistance in funding local authorities' current expenditure should take the form of block grants to be used freely by local authorities; earmarked state grants should be confined to significant capital expenditure and certain current expenditure".

share of the co-funding, and they may promote local spending on institutions for treatment instead of prevention.

In the Council of Europe ministers have in 1985 agreed on the European Charter of Local Self-Government that advised against the practice of earmarking grants to sub-national governments.

What have been the effects of these quite critical views on earmarking? Several recent studies have attempted to describe the status and developments in grants to sub-national governments.

"Earmarking of grants to sub-national governments has long been criticised.

The criticisms include the charge that they prevent coordination and flexibility at the local level and present problems of control"

A recent OECD study (Bloechliger and Vammelle, 2010) finds, based on a sample of 20 countries who had reported data to the OECD, that as much as 60 per cent of the grants to subnational governments in 2006 were earmarked. The study also includes data (16 countries) for the development in the share of earmarking out of total grants to sub-national governments during 2000-2006 but no clear trend was revealed. The share

"The use of earmarking of grants to local governments plays a key role in nearly all countries, and the use of earmarking in many countries has increased"

had increased in 8 countries and declined in the other 8. Noting the wide variation in country experiences the study did not identify drivers of earmarking but concluded that there is "some path-dependency of the intergovernmental transfer system".

The Council of Europe (Lotz, 2008a) analysed, based on a smaller sample of 13 volunteering European countries, the development of earmarked grants as a share of total tax financed resources (the sum of local taxes and grants revenues) during the period 1994-2004. It was found that the share of earmarked grants had declined in 5 countries and increased in 7 countries. The major explanation for the increases offered by member countries was that they needed to earmark new grants in order to compensate local governments for the costs of new decentralised competences.

Both studies confirm that the use of earmarking of grants to local governments play a dominant role in nearly all countries, and that the use of earmarking in many countries has increased. The perceived negative effects and the policy guidelines apparently have had limited measurable effects on national policies of grants to sub-national governments. But does this mean that local freedom has been restricted?

3. On the Statistical Measures of "Earmarked Grants"

3.1 What is Earmarking of Grants?

This chapter examines the weaknesses of the international grants statistics. An internationally agreed classification of grants is needed if a comparison of grants policies across countries or states is attempted.

The established international system of national accounts does not distinguish between earmarked and general purpose grants to other levels of government.

To improve on this status has not been easy. One observer remarks: "And so it goes: in almost every jurisdiction, the world of intergovernmental grants turn out to be a complex and convoluted confusion of labels, intentions, and realities" (Smart and Bird, 2010). But it has, after years of work, been possible to agree on some international typology of grants. In 1986 one was developed by the Council of Europe (CoE) (Lotz, 1986). Later the OECD, building on

the CoE classification, developed the presently used classification (Bergvall et al, 2006). These classifications have been used to organise international data collections but any reader of the fiscal federalism literature will have noted that, in spite of the difficult and time-consuming committee-work in the OECD, the international definitions are not widely used by experts.

The two classifications are basically quite similar, both aim to describe the degrees of restrictions of sub-national government freedom and distinguish between grants that are earmarked and those that are non-earmarked (the two classifications are described and compared in the appendix).

The OECD classification seems on the surface to be reasonably clear in describing what is an earmarked grant and what is not. It is based on whether or not they are "grants given under the condition that they can only be used for a specific purpose" (Bergvall et al.).

3.2 Grants Policies Cannot Be Seen in Isolation

But statistics on the role of earmarking do not tell the whole story of the effects of grant policies for local freedom.

It has been argued that there is in politics a causal relationship so that governments, when they switch from earmarked to general purpose grants, tend to introduce legal regulation to replace the control function performed before by the earmarking. Blom-Hansen (2010) finds such a relationship in the development of Danish regulation of primary schools and shows that "the question [of earmarked or general grants] disappears to be a minor detail in a larger regulatory complex" and he concludes that "it would be highly misleading to conclude from the abolishment of conditional school grants [] that this is an area where local autonomy has been on the rise".

"Statistics on the role of earmarking do not tell the whole story of the effects of grant policies for local freedom"

3.3 Block Grants, the Grey Zone

There are many other reasons than this why the simplicity of the definitions in the statistical manuals does not necessarily mean that the statistics become comparable. The experience from many meetings in international organisations has been that countries

often find that the international statistics fail to describe differences in policies in a clear, comparable and fair way.

The main problem is that there are many degrees and forms of control, both with and without real earmarking. The OECD attempts to reflect this problem by the inclusion of the item *block grants* in their typology of grants. A recent textbook describes the concept of block grants as follows: "General purpose transfers are termed block transfers when they are used to provide broad support in a general area of sub-national expenditure, while allowing recipients discretion in allocating the funds among specific uses. Block grants are a vaguely defined concept. They fall in the grey area between general-purpose and specific-purpose transfers, as they provide budget support with no strings attached in a broad but specific area of sub-national expenditures." (Boadway and Shah, 2009 307)

"The OECD classification of earmarking rests on whether the use of the grant is controlled or supplemented with direct regulation. This highlights a difference between block and matching grants"

Such a "vaguely defined concept" seems well suited to appeal to the political concerns of member countries in international organisations, but it is not easy to use as basis for an international statistical definition. The OECD guideline for this classification clearly demonstrates this: "block grants are given by the grantor for specific purposes. However, since the grant is not earmarked, the grantee's actual use of the grant is not controlled. Instead, the output could be regulated through, for example, a set minimum standard that the sub-national government would have to provide" (Bergval et al. 118).

So the OECD classification of earmarking rests on the question whether the use of the grant is controlled, or it is supplemented with direct regulation. This highlights an interesting difference between these block grants and matching grants. For a matching grant there is a feed-back to the grantor. It makes it easier for the grantor to monitor what the sub-national governments do. For block grants there is no such feed back. But it is difficult to see how this difference can serve as the statistical distinction between matching and block grants. Would all countries use the same criteria to decide when the use of a grant is controlled directly or perhaps controlled ad hoc when auditing is demanded ex post? I shall come back to the Danish experience suggesting that this is not easy.

The failure to reach a uniform application of the criteria for "block grants" is reflected in the actual OECD statistics. The initiators among

OECD member countries of this classification seem to be Finland and Norway as both countries have classified a large part of their general grants this way. But Bergvall et al presents several examples of what they call block grants in similar countries (Denmark and the Netherlands) for whom the statistics include no block grants at all⁴.

In conclusion, the inclusion of this classification in an international questionnaire is from a statistical point of view not very satisfactory. But when "block grants" is not a useable statistical concept we are left without a measure of the grey zone which the block grant-definition was intended to measure. Countries try in different ways to encourage sub-national governments to allocate some general grants for particular functions, but the relative intensity of these encouragements is lost when all is classified as either general or earmarked grants. And even if the attempts by the centre to influence local allocations are not successful (because of leakages that could be large for block grants) the governments may for politic al reasons still prefer to see the statistics demonstrate how they have acted to influence local government allocations in the desired way.

In real life earmarking can be more or less broadly defined. In a recent discussion of this issue in the CoE the observation was cited of "a perceived growing international tendency over recent decades towards greater freedom within earmarked grants. Traditional statistics fail to register the increases in local spending freedom resulting from reductions in the degree of detail of earmarking, or from the introduction of more broad-based earmarked grants." (Lotz, 2008a).

3.4 Result-Based Earmarked Grants

The CoE 1986-classification distinguished between conditional grants based on standard costs and on actual costs. The standard cost version caps the costs per unit eligible for refund (for instance a maximum for the refundable cost per student in primary schools) while the actual cost version allows for refund of the full sub-national expenditure.

"The standard cost version of conditional grants caps the cost per unit eligible for refund, while the actual cost version allows for refund of the full sub-national expenditure"

Apparently there was little interest in these capped grants –now known as result-based grants— in the OECD when it designed its classification, but it has been much discussed elsewhere. It has

In the Nordic countries the term "block grants" has historically been used for general grants.

been argued that with the increasing availability of data on inputs and outputs of local activities a more widespread use of result-based conditional earmarked grants has become possible. There seems now to be a new awareness of the possible benefits of using result-based conditional earmarked grants linking grant finance with service delivery, and it is held that "they respect local autonomy and budgetary flexibility while providing incentives and accountability mechanisms to improve service delivery performance" (Boadway and Shah, 2010, 314, see also Shah, 2010 and Smart and Bird, 2010).

The use of result-based grants may potentially result in another definitional problem in the classification of matching grants: If the law defines the grant per unit (client) the total size of the grant only depends on how many units qualify. And if the number is non-variable (for instance as the number of children of a certain age) there can be no incentive effects and the grant becomes a lump sum grant. This is wrongly in the statistics described as a matching grant. In other words, in cases of capped grants the definition of "matching" rests on the room for sub-national governments to make their own visitation⁵. This leads to the question of agent functions, see below.

"The use of result-based grants may lead to another definitional problem in the classification of matching grants: if the law defines the grant per unit, the size of the grant only depends on how many units qualify"

Another kind of result-based grants is incremental matching grants where increases in the grant depend on increases in the local spending over the level of the preceding year. Such grants have the advantage of reducing leakages compared to simple matching grants, the central government can be sure that the increase in grants results in increased spending on the subsidised function⁶. Such grants have been used for Danish hospital grants and for some Norwegian grants (Borge, 2009).

3.5 Agent Functions: Grants-Financed or Misclassified Central Expenditures?

With the term agent functions is understood functions performed by a sub-national level where the service is described in all details by the law so that there is no discretion left for the sub national level. Normally,

when services are of this type, the financing is a 100% matching grant that is implicitly close-ended because of the strict description of the service. But it could be argued that the central financing of such services should not be seen as a grant for a local function at all, instead the whole function should be reclassified as central government expenditure as recommended by the CoE (Lotz, 1986). In other words, differences in the treatment of the spending on and financing of agent functions may distort statistics on the distribution of revenues and expenditures between levels of government.

In the functional classification of the SNA manual defines whether a function is central or is to be described as local. The distinction relates primarily to the administrative placement of the function and not to the degree of local freedom. An example to illustrate this is the Danish national old age pension⁷. Many years ago it was seen as a local service with some, though limited, local discretion. But today both the amount of the pension and the criteria for receiving it are described in details in the law, and though the old age pension is for administrative reasons handled by the local authorities the expenditure on pensions no longer appear in the local budgets.

However, according to the SNA, the expenditure must be recorded as a local expenditure and the financing classified as earmarked matching grant to sub national governments. The result is a major difference in international statistics on public finances. The OECD, following the SNA, finds that only 30 per cent of Danish grants are general purpose (Bergvall et al.), while the CoE - following the present day Danish budget practice - finds that the proportion is 54 per cent (Lotz, 2008a). The statistics on central/local expenditure mirror this error:

3.6 Incorrect Information

And there are other problems with statistics on grants. Data may for political reasons be reported in ways that do not describe the real situation. In Italy a constitutional ban of conditional grants in 2001 created several problems for the central government. Some agencies were unhappy to give up earmarking, but, "being on the borderline of legality", they have to be "kept almost hidden in the budgets of the paying and recipient governments" (Brosio, 2009).

4. The Drivers of Earmarking Policies8

The drivers for earmarking policies are in the following sections identified as two main groups: better allocation (spill-overs, merit

⁵ This point was made to me by Junghun Kim, the chairman of the statistical group under the OECD Network on Fiscal Relations across Levels of Government.

⁶ However, a leakage may result if the local level had planned and made resources available for the service in question before the grant was made available.

⁷ Another example of such agent functions are the education grants in Korea

This paper is in several cases based on the presentations for the 2009 Copenhagen workshop on general grants vs. earmarked grants (see Kim et al., 2010). This is in particular the case for this chapter.

wants, and efficiency in sub national production), and better local government equalization.

4.1 Earmarking for Better Allocation. Spill-Overs

In the traditional economic literature earmarking is needed when local governments activity generates spill-overs for other local governments. Positive spill-overs exist when residents of neighbouring jurisdictions gain from policies of a given authority. Such spill-overs can be internalised in different ways, either by negotiations between the concerned authorities, or by subsidisation or taxation by a higher level authority. Subsidisation can take the form of matching grants to encourage the sub-national government to take these into account. If the spill-overs are not so much a question of the amount of the activity but of project design non-matching earmarked grants (what the OECD would call block grants) could be used. In this case the full payment of grant can be conditioned on certain design features being implemented (Boadway and Shah, 37).

"In the traditional economic literature, earmarking is needed when local government activity generates spill-overs for other local governments"

But though important in traditional theory, spill-overs are not in contemporary theory seen as a major driver of earmarking policies (except for cases of economies of scale of local investment expenditures, Solé-Ollé, 2010, see below). There seems to be general agreement that concerns about spill-overs far from explain the widespread present day use of earmarking⁹.

Merit Type Wants

Musgrave (1959) offered what seems a much more powerful explanation for the use of earmarking in present day policies. To him the argument for using earmarking follows what he terms "an entirely different view" described as a situation where "fiscal federalism is interpreted to be an assurance to each citizen of the federation that special social needs such as elementary education will be provided for adequately in all states". These social needs "may include social wants belonging to the [sub-national government] but recognized as merit wants at the national level. Here we have the rationale for earmarked grants and for matching grants". And he concludes that in

such cases "the choice is not a matter of fiscal analysis but a matter of how to interpret the nature of the federation, thus involving political no less than economic considerations." Musgrave's little recognised "entirely different view" has over the years become part of the literature and has recently been re-recognised. Some examples of this are:

- Bird (2009) recognised, citing Musgrave, that the solution depends on the view of federalism we wish to take, and that one view of this is that the central government assumes responsibility for ensuring that all citizens are provided with with a given minimum of public services.
- Boadway and Shah (2009, 327) finds -fifty years after Musgravemerit wants to be "one of the most important reasons for federal-state transfers, and one that has been less recognized in the fiscal federalism literature". But they add that there may also be Pigouvian arguments for these merit type wants as "uniform expenditure programs will contribute to the free flow of goods and services, labour and capital".
- It is generally accepted dimension of decentralisation that the merit type argument is justified on equity grounds which also explains local government equalisation (Kim, 2010).
- (Rattso, 2002) develops and expands the Musgrave alternative view into a contemporary "European model of administrative federalism".
- Smart and Bird (2010) offers another merit type argument describing earmarking as a result of central governments' fear that "recipient government officials are insufficiently accountable to local voters." They refer, in support of such mistrust, to the evidence of the existence of flypaper effects.
- There may also be a need for earmarking when sub-national authorities do not all deliver the same bundle of services, or when the functional domains of different layers of government are not clearly delineated (services are delivered in other authorities but financed by higher level authorities) (Solé and Ollé, 2010).
- Rational self-interest maximisation. For example, politicians may want earmarked grants if they believe that public employees' jobs depend on the existence of such grants (Blom-Hansen, 2010).

"These social needs may include social wants belonging to the sub-national government but recognized as merit wants at the national level. Here we have the rationale for earmarked grants and for matching grants."

⁹ Kim (2010), Bloechliger (2010), Boadway and Shah (2010), Smart and Bird (2010).

Musgrave, 1959. pg. 183. The text is from under his headline "Assurance of Minimum Level of Public Services" as distinct from the following headline "Pure Federalism".

This motive extends to central government agencies and to NGOs and operates also among employees of local authorities seen as fighting for earmarked matching grants.

Efficiency in Production - Result-Based Grants

The lack of a statistical definition in the OECD terminology that identifies "result-based matching grants" has been mentioned above. In contrast to the simple matching grants this type of earmarking is seen as an instrument to promote efficient supply of local services (Shah, 2010).

Traditional matching grants are signals to sub-national governments to increase spending on the subsidised function. Result-based grants reach towards the production of services in the sense that only if the individual local institutions produce more, grants will follow. Result based grants invites the councils to introduce internal budget procedures that give incentives to the managers of service production to produce more, and perhaps to let salaries for management and further down depend on productivity. The systems can be designed so that expected and demanded annual improvements in efficiency are incorporated by annual reductions in the grant per unit produced (Mau, 2010).

But the possibilities for the use of result-based conditional grants depend on the availability of indicators to measure the results.

Firstly, objective, trustworthy data must be published without too long delays because "central governments generally feel the need to link the monitoring of performance to the grant allocation process (which is part of the annual budget cycle). A close linkage is often considered necessary to make sure that funds are used as intended and that central governments can be made accountable for the results obtained" (Bergvall et al.).

Secondly, it has been argued that political visibility needs to be considered. A study of three examples of Danish grant policies (Lotz, 2005) describes the problems that may arise for the government that desires to introduce a type of result-based grant when the performance is difficult to measure, or if too much time elapses between the decision to give the grants and the appearance of the documentation of its' effects. These problems were in Denmark overcome in the case of a result-based grant to hospitals where it could be based on readily available data for production as measured in diagnosis related groupings (DRG) values. This made it possible to adjust the grant during the year if production differs from the expected, and for the politicians to boast of the success of the grant.

The difficulties of introducing result-based grants when visibility is low were demonstrated by the experiences of two other Danish grants, both earmarked in the vague sense of "block grants" for local old age care. In the field of care for the elderly no good performance indicators are available so it was not possible to design result-based grants. Instead it was decided to supplement

increases in the general grants with an agreement with the local government association that the local authorities would spend the increase in grants for old age care. This way the increase in the general grants was changed into what OECD calls a blockgrant. But when the budget year was over the opposition in Parliament challenged the government to provide evidence that the grant had been use the way the government had "promised". Such documentation was, at considerable costs, produced the best possible way and the result was after long and for the government politically troublesome debate accepted by the opposition. However, lack of visibility may be a stone in the shoe but, as it turned out, not bad enough to remove the stone. In spite of the problems of documentation the Danish government repeated such negotiated types of "block grants" in later years in order to be seen as fighting for better old age care. I

All in all. If designed the right way result-based grants are effective instruments for improving efficiency. And if they are designed poorly they may - in a "block grant" way - still serve political purposes and demonstrate political engagement, an observation that "appear to provide a better explanation of grants than is to be found in the traditional fiscal federalism literature" (Smart/Bird, 2010, Borge, 2010).

Does Earmarking Change Local Behaviour, and How Much?

The measure of success of a program of matching grants intended to neutralise spill-overs may not be so much how the allocation is changed as whether the local decisions are made with all costs correctly internalised (allowing in principle for compensation of the losers). But when it comes to measure the success of earmarking for merit wants success must be measured simply by the change it makes in allocation. And it is much debated whether they do that.

Merit type grants may be matching or kinds of "block grants", in both cases their effects depend on whether they are designed in ways that prevent that they are used to finance local spending that the sub-national government would have undertaken anyway.

"Effects of merit-type grants depend on whether they are designed in ways that prevent their use to finance local spending that the sub-national government would have undertaken anyway"

Several attempts were made to improve on the effects of the grants. For example, there was one year introduced an administratively burdensome program of prior approval of projects.

If it is not possible to prevent this part of the earmarked grant becomes available for spending for other purposes (Borge, 2010). Even result-based earmarked grants have income effects and, even if they are designed so that they apply mainly to incremental activity there may also for these be a leakage-problem.

The literature gives many examples of very different evaluations of the effects of earmarking for local grantee behaviour. Efforts need to be made that the grants are designed in ways that limit the income effect and strengthen the price effect, or very restrictive conditions should be attached.

4.2 Earmarking for Better Local Government Equalization

Earmarking as Substitute for Expenditure Needs.

Another argument for earmarking is identified by countries who have set minimum standards for certain services delivered by the local authorities and have a high priority for horizontal equity among the citizens. They need to find ways to subsidise the local authorities who have difficulties to finance the minimum standards and to equalize differences in spending needs.

But information on differences in local spending needs is sometimes difficult to find. And if there are no objective statistical indicators of needs to allocate the equalising grants it is not possible to design a satisfactory equalisation. One solution may in such cases be to use matching grants, allocated according to actual spending, rather than to spending needs (Smart and Bird, 2010, Mau, 2010). But this solution requires a trade off between efficient allocation and equity, and many efforts are made to find ways to avoid matching grants that result in excessive spending. 12

An example of this is the Danish reforms in the 1970ies replacing a number of open-ended matching grants with general purpose grants. This shift caused considerable economic stress for the city-authorities who needed to spend relatively much because of their high concentration of socially deprived citizens. After the reform they lost out on the allocation of the general grants that were made depending on simple available variables for size and age distribution of the local population. This resulted in a search for indicators that made Denmark among the first countries to use regression analysis to identify so-called umbrella indicators of social needs (such indicators were introduced in legislation for 1984).

Another example of such technical problems is the allocation of grants for investments of sub-national governments. Economies of

¹² Smart and Bird argues that "In the presence of imperfect information about cost drivers - the real and necessary unit costs of governments services at the local level – it may be difficult for the centre to design a lump sum (block) grant" and as a second best solution they suggest that matching grants can be an alternative.

scale may create spill-overs (Solé-Ollé, 2010) and investment outlays may often be too large to finance without grants. It is most often impossible to find objective indicators of such needs, and earmarking is the most common kind of grants for financing of capital spending. Such earmarked capital grants are close-ended in the sense that they are usually granted only after prior higher level examination and approval of projects (Solé-Ollé). But he adds that this discretionary element has resulted in some rent-seeking and "clientilism". ¹³

Earmarked Grants as Compensation for New Local Competences, the CoE Study.

The apparent widespread and often increasing use of policies of earmarking grants to sub-national governments caused some concern in the Council of Europe because it suggested that its guidelines were apparently not followed by the member countries.

But several CoE member countries defended the use of earmarking and argued "that it is a result of the increasing decentralisation [and that] earmarked conditional grants have been needed to finance new local expenditure caused by decentralisation of functions." (Lotz, 2008b). So, it was argued, the increasing use of earmarking was a result of more decentralisation and hence in praiseworthy conformity, and not in conflict, with the spirit of the Charter of Local Self-Government. The CoE initiated an analysis of this question and the results were published in 2008 (Lotz, 2008b).

The survey shows that negotiated compensations for new local competences are used by nearly all European countries, and in most cases the compensation is made with matching grants. Here the equalisation motive plays a role, earmarked matching grants allocate better than general grants the money to those authorities who bear the burden of carrying out the new competences.

"Several CoE member countries defended the use of earmarking and argued that it is a result of the increasing decentralisation and that earmarked grants have been needed to finance new local expenditure"

The report argues that such compensations contribute to accountability because the responsibility of financing is placed at the same level of government as the one that makes the decision on extra spending. The report points at several other, sometimes overlapping motives for compensation. In some

¹³ The Council of Europe guidelines accept earmarking in these cases, see Lotz (2008b).

Box 2.The Council of Europe 2008-survey of compensation for new local competences.

The study covered 27 countries¹ and the answers revealed that: 24 out of 27 countries compensate "nearly always" or "often" local authorities for new competences.

The compensation is by grants (though at least one country compensated by permission for local authorities to collect new fees or taxes, see also Lilleschulstad, 2009).

- 8 countries use earmarked grants, 12 use a mixture of earmarked and general grants², and 7 countries use general grants for compensation.
- About half of the countries use "matching grants" and the other half used non-matching earmarked grants (mainly for capital spending).³
- 14 countries "always" negotiate the size and the allocation of the compensation with the local authority associations and 10 "usually" negotiate. In 22 countries these negotiations resulted always or usually in agreement with the local government side.
- ¹ The original CoE survey (Lotz, 2008b) includes answers from 23 countries. During the 2009 Workshop in Copenhagen delegates from 4 more countries volunteered to answer. The following includes these raising the number to 27 participating countries.
- ² Probably cases where matching grants were used initially, but to be changed into general grants after some years.
- ³ So Bergvall et. al. are perhaps exaggerating when they say (pg 132) that "new obligations are often financed by block grants for reasons of transparency".

cases the motive of the higher level government has been to have some control over the way the services are delivered. Matching grants may also result in better local acceptance of the new competences, and may therefore facilitate a smooth starting up of the new local function.

5. Some Concluding Remarks

5. I The Different Views on the Framework for Fiscal Federalism Policies.

Summing up it seems that earmarking is used widely by national governments as instruments of control over sub-national governments. In some cases they are used for equalizing purposes but also this motive aims at influencing local government behaviour. The explanation of this so common practice of earmarking is not seen as the traditional Pigouvian economics of spill-overs, but rather as the Musgrave view of a "different nature" of the federation. This point has been developed by Rattsoe arguing that "Rather than the result of the local population organising a club to solve common problems, local governments are established as part of a national "public sector" (Rattsoe, 2002 pg279). It is about a framework for sub-central governments to deliver similar services to the citizens no matter where they live. Seen this way

earmarking of grants serves a purpose that need to be seen together with other instruments of regulation. It is therefore that an international classification of earmarking of grants based on the degree of local freedom is such a difficult exercise, and there is a need for this to be considered in a broader framework.

This is all related to the difference in analytical emphasis between the traditional Oates/Tiebout model and the thinking expressed by Rattsoe in his sharp essay on these differences between US and European thinking on fiscal federalism, the latter he describes as a "European model of administrative federalism" (Rattsø, 2002 pp277-90). His is a model where decentralisation of redistributive expenditure functions combined with mandated and centralised financing is seen more as an administrative convenience than an instrument for better allocation, and where the public sector is organised in a more corporative way than is usually assumed by economic theory.

Oates dismisses this as an un-interesting case and describes it as cases "where regional and local governments are largely agencies that respond to central directives [] much of the electoral and fiscal autonomy that we usually associate with decentralized finance under a federal system seems outside the scope of this kind of model." (Oates, 2005). But he seems to exaggerate (see Richard Bird in this volume). Also in the Rattsø world there is a role for the development of new local ways to do things, local experimentation, and competition for lower taxes through improvements in efficiency.

"Earmarking is used by national governments as an instrument of control over sub-national governments. Sometimes they are used for equalizing purposes but also this motive aims at influencing local government behaviour"

The many references to merit wants cited in this paper paint a picture of the Musgrave "alternative view" as a dominant explanation for earmarking. The US and Switzerland both have truly decentralised public sectors, are there many more? But there are quite a number of countries who have delegated politically sensitive redistributive welfare services to sub-national governments so that "regional and local governments are largely agencies that respond to central directives". The most striking examples of administrative federalism are seen in the Northern Europe. And this shift in emphasis may not only be relevant in Europe, Japan and Korea are countries that comes to mind, and Slack (2010) describes also the role of local governments in Canada in quite a similar way (suggesting that the issue is also relevant in federal countries): "In

"There are quite a number of countries who have delegated politically sensitive redistributive welfare services to sub-national governments"

essence, local governments in Canada, to a considerable extent, are acting as agents of provincial governments spending provincial dollars on provincially-designated activities."

5.2 The Answers on Earmarking

Is earmarking on the rise so that sub-national freedom is being restricted? We are not sure. And how are we to advise our politicians, is earmarking to be avoided? Not always, for many countries – depending on "the nature of the federation" - there is a need for control of sub-central government behaviour and for equalization. Earmarking is the right choice if the alternative options of control are in terms of efficiency inferior solutions.

Appendix

International Typologies for Grants to Sub-national Governments.

The international systems of national accounts know of only one kind of grants to other levels of government. This leaves a need for statistics that throws a better light and help to a better understanding of the role of earmarking, and new typologies of grants have been established distinguishing between different types of grants depending on their effects for the freedom of sub-national governments. First, one was developed by the Council of Europe (CoE) (Lotz,1986), then a newer one, has been developed by the OECD building on the CoE classification (Bergvall et al, 2006). The two classifications are compared in the following table, in broad terms they are quite similar classifying grants to local governments as either earmarked or non-earmarked.

The differences between the two classifications of particular interest are, firstly, that the CoE distinguished between matching grants related to actual costs and those related to standard costs (the so-called result-based conditional grants), the OECD does not make such a distinction. Secondly the OECD distinguished between general purpose grants and block grants, the CoE does not make this distinction.

Council of Europe	OECD
A.I Specific	B.I Earmarked
A.I.I Conditional:	
A.I.I.I At standard costs	B.I.I Mandatory matching
A.I.I.2 At actual costs	
A.I.2 Not conditional	B.1.2 Mandatory non-matchir B.1.3 Discretionary B.1.3.1 Current
A.I.3 Capital	B.1.3.2 Capital
A.2 General purpose	B.2 Not earmarked
A.2.1. Objective criteria: A.2.1.1 with own tax effort A.2.1.2 without own tax effort	B.2.1 Mandatory: B.2.1.1 General purpose
	B.2.1.2. Block grants
A.2.2 Discretionary	B.2.2 Discretionary

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Local Debt: From Budget Responsibility to Fiscal Discipline

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I. Introduction

According to article 9 paragraph 8 of the European Charter of Local Self-Government (Council of Europe, 1985), "for the purpose of borrowing for capital investment, local authorities shall have access to the national capital market within the limits of the law". The subsequent explanatory Report (Council of Europe, 1998) does not give policy guidance as to how this paragraph was interpreted. Thus we can infer that (i) loan finance should be reserved for capital investment, (ii) local authorities should have direct access to the capital market, and (iii) the higher government layer can restrict local borrowing by law. At this time, the literature on subnational balanced budget and debt control was academic and not really framed for the preoccupations of policy-makers (Rossi and Dafflon, 2002). It described either institutional restrictions on borrowing (rules of balance and for local borrowing, accounting requirements, administrative control, rating), or the consequences of excessive debt and sanctions (bailout, sanctions, sustainability).

Twenty years after the Charter, the political economy of balancing the budget and controlling debt at the local level were not adequately perceived. Thus the Committee of Ministers at the CoE gave recommendations on financial planning and the budget process at the local level for the funding of investment expenditures through credit and loans (CoE, 2004, Rec 24 and 71; CoE, 2005, Rec 73 to 76). More recently, the Centre of Expertise for Local Government Reform (CoE, 2009) added several prescriptions on local debt finance.

Referring to these documents, we look at the issues in terms of policy implementation.

Section 2 recalls the differences between budget responsibility and fiscal discipline.

Section 3 revisits the "golden rule" of balancing the budget by adding the "pay-as-

you-use" principle for investment financing. Since the reformulated golden rule does not tell whether the local debt is too important with regard to the financial capacity of the commune, section 4 selects ratios that a local government can introduce for its own debt management and control. Section 5 observes how rules of fiscal discipline have been implemented, their content and success. Section 6 concludes.

2. Budget Responsibility Versus Fiscal Discipline

In the past thirty years, most European local governments have been granted access to borrowing. Rules include limitations of the amount of borrowing and/or debt service, restrictions on the purpose of debt and on credits from foreign institutions and/or from the central bank. Comparative analyses on the control of subnational borrowing practices and sanctions constitute the thrust of several academic studies. One can debate almost endlessly upon the "best" design and the economic underpinnings of a "good" budget constraint. What are the ingredients that make it work efficiently? Fiscal discipline is not a simple question of having or not rules limiting deficits and debt. From "soft" to "hard" budget constraints, there are various degrees of severity. Dafflon (1995, 1996) proposed a catalogue of ten key issues that might help local policymakers examine their budget management practices upon whether they promote budget responsibility or not. The catalogue also permits to qualify the budget constraint from "soft" to "hard"

> "In the past thirty years, most European local governments have been granted access to borrowing: there are limitations on the amount of borrowing and debt service and restrictions on debts and credits"

whether it is self-imposed or imposed top-down. These issues were extensively studied for the twenty-six Swiss cantons in Novaresi (2001). Originally, the catalogue was conceived to facilitate comparison between ten selected West European countries (Dafflon, ed. 2002). Swianiewicz (2004) adopted this catalogue for

¹ Austria, Belgium, Denmark, England, France, Germany, Italy, Norway, Switzerland and Spain.

Central and East European countries.² Parallel, a major inspiration was provided by Ter-Minassian and Craig (1997) for 53 countries worldwide. They distinguished four models: reliance on market discipline, co-operative approach, rules-based approaches and direct (administrative) control. The most frequently used approaches are rules-based control and direct control, sometimes accompanied by sanctions for the case of non-compliance.

Although a minimum of regulation is necessary in order to prevent massive defaults of subnational units with serious repercussions on the national economy, both rules-based control and administrative control have their limitations. Rules-based approaches generally lack flexibility and incite local governments to get around the rules, as has occurred in a couple of countries (Ter-Minassian and Craig, 1997; and Rattsø, 2002). The instruments of administrative (direct, preventive) control make subnational governments excessively dependent on the support by central authorities and induce moral hazard problems insofar as they impose a moral commitment on the latter to provide a bailout in the case of local government default (Rossi and Dafflon, 2002: 36-37).

"A minimum level of regulation is necessary in order to prevent massive defaults of sub-national units, with serious repercussions for the national economy"

While top-down rules and sanctions may be efficient in preventing local governments from excessive borrowing and thus in protecting the central government from fiscal imbalances that the local public sector can potentially induce, they cannot guide local decision-makers on what to do in order to fully benefit from the advantages of debt finance without running the risk of insolvency. By nature, rules are ex ante restrictions that local governments must respect before taking any decision on borrowing, whereas sanctions are ex post reactions to situations of excessive indebtedness. In the existing literature, rules and sanction place the centre of gravity on the central government and treats local performance as a dependent variable that has to adapt. From this point of view, we consider budget discipline as a negative approach to obtaining a balanced budget at decentralised levels. The positive approach is then viewing the balanced budget as a result of a prudent and proactive budget policy through which local governments adjust their investment policy to their real fiscal capacity and assess costs and benefits of each capital programmes in advance, in order to avoid excessive debt. We call this approach budget responsibility (or self-discipline).

Shifting the emphasis from budget discipline towards budget responsibility does not imply that a regulatory framework is unnecessary or that credit rating does not count for borrowers' discipline. Rather, sound financial management requires that similar rules and sanctions be established in the interior of the local government organisation as well, upon the rational deliberation and voluntary decision of local policymakers. This already exists in federal countries where regional and local governments can voluntarily introduce self-made rules and sanctions in their own legislation. In unitary systems, by contrast, the central government has been so far the only authority to impose rules and administrative procedures concerning borrowing and debt. Obviously, leaving the decision about control mechanisms to the discretion of local governments can work only if the latter are subject to a hard budget constraint, no bailout by the centre (CoE 2005: Rec 76) and have a strong sense of responsibility for the welfare of their constituency.

3. The "Golden Rule" Revisited

The classical golden rule of public finance is that the budget should be balanced for reason of equity as well as efficiency (Novaresi, 2001; Rossi and Dafflon, 2002, fully develop the pros and cons – which are not referred here). The efficiency argument is that elected members of parliament (or resident citizens in direct democracy) should assume the consequences of their policy decisions. Taxes are the right price-signal. Yet, implemented at the local level, the golden rule of a balanced budget is too restrictive for financing investment expenditures. The rule is suitable only with large regular and repeated annual outlays in capital expenditures, a condition which is more easily respected at the national than at the local level. This inconvenient can be circumvented when taking into consideration the pay-as-youuse principle of investment financing.3 This also corresponds to the equity argument that the generation who benefits from the services should pay for them (CoE, 2005: Rec 73). In Buchanan's view, the golden rule has the additional virtue of limiting the size of the State (Buchanan and Wagner, 1978).

> "The classical golden rule of public finance is that the budget should be balanced for reason of equity as well as efficiency"

² Czech Republic, Estonia, Hungary, Poland, Rumania, Russia, Slovakia.

³ Note that the question whether investments should ideally be financed on a pay-as-you-use (debt) or pay-as-you-go (current revenues) basis has long been a subject of scientific debate. The controversy is summarised in Dafflon and Beer-Tóth (2009).

The combination of the golden rule and the pay-as-you-use principle requires in practice that the current and the capital budgets be clearly distinguished. As a consequence, one important precondition to an effective implementation of the reformulated golden rule is the adequate definition of key terms such as "investment", "debt service", or "amortisation", in addition to the separation of current and capital budgets. Another much debated issue is the definition and extent of the amortisation versus the concept of depreciation, and therefore the equivalence between the amount of amortisation / depreciation written in the books and the effective debt repayment (Dafflon, 1998; Novaresi, 2001; Rossi and Dafflon, 2002).

In short, the golden rule revisited prescribes that: [1] current expenditure must be paid by current resources, mainly taxation and user charges (borrowing for current expenditures is prohibited (CoE, 2004: Rec 24; 2005: Rec 74); [2] investment expenditures can be financed through loan (CoE, 2005: Rec 73); [3] interest and amortisation of the debt should be repaid out of current resources, since they are recurrent costs of new projects financed by loans (CoE, 2004: Rec 71). It can be expressed by a set of budget equations that give the flavour of the argument. The formulas are not intended to lay the grounds of a mathematical model but simply to draw the attention to certain key issues.

The current budget is given by:

$$T-G=S$$

where T = current revenue from taxation;

G = current public expenditure;

S = net savings on the current account ¹⁴

For additional investment, the result needs to be S \geq (T-G). An additional investment programme can finance from a mix of resources:

$$\Delta I = \Delta B + F$$
 [2]

where $\Delta I =$ additional investment;

 ΔB = additional borrowing;

F = other funding sources related to the planned investment programme (e.g. taxes and fees, domestic and foreign grants-in-aid, donations).

The maximum amount the local government can borrow is given by the following general formula:

$$\Delta B = \frac{S-[(M+E)-(R+O)]}{i+d}$$
 [3]

where M = maintenance costs in a given year, related

to the new asset created by Δl ;

E = current costs in a given year, related to the local public service that Δl allows to offer;

R = revenues from the operation of the asset (e.g. user charges, sponsoring);

 e operating grants received from other government entities for the planned investment;

 $i = interest rate for \Delta B (\%)$:

d = depreciation rate of Δl . It corresponds to the amortisation rate of ΔB (%), according to the pay-as-you-use principle. If the useful life of the investment is 20 years, then d = 0.05.

From [2] and [3], the additional investment can be calculated as:

$$\Delta I = \frac{S-[(M+E)-(R+O)]}{i+d} + F$$
 [4]

The message of this equation is the following.

First, the equation starts with S, the net saving: the costs incurred by past investments cannot be left out of account. The local government can initiate new investment expenditures only insofar as the current account produces a sufficient amount of net saving.

"The golden rule revisited prescribes that current expenditure must be paid by current resources; investment can be financed through loan and interest and amortisation should be repaid out of current resources"

Second, the future operating costs (M) and (E) must be taken into consideration. There is no point in embarking upon a new investment if the budget capacity does not allow the local government to pay for the future costs provoked by ΔI . The statement is trivial but, in practice, one can find many cases where new investments have been initiated without any consideration of the related costs to bear in the following periods (CoE, 2004: Rec 71). On the other hand, possible additional revenues (R and O) are counted.

Third, equation [3] shows that ΔB brings about additional financial costs (i + d) that must be included in the future current account. The shortcut usual formula that ΔB is equal to S / (i + d) is not adequate since it leaves out $\,$ M, E, R and O.

4. Ratios of Indebtedness

Scrupulously respected, the revisited golden rule does not indicate a limit to borrowing and public indebtedness. As long as the current budget can support the debt service and amortisation, further investments and borrowing are possible (with respect to equation 4 above). A local government could thus ends and not "ends" up in a situation where a too large amount of taxes and current revenues would be paid into the banks rather than serve for local public

⁴ In adopting the separation between current and capital accounts, we have to "transpose" the words of the European System of National and Regional Accounts [ESA 95) in order to respect the same definitions. The ESA 95 does not distinguish between these two budgets. Thus, primary balance is the result of the current account prior to interest payment and amortisation of the debt. Gross savings is the primary balance minus interest payments, and net savings is gross savings minus amortisation (with the "golden rule": amortisation = economic depreciation = actual debt repayment).

services. Note that respecting the comprehensive rule given above, this danger is more theoretical than real since the opportunity cost of an additional investment versus the actual provision of local public policies will restrain loan finance. Nevertheless, there is a demand at the political level that economists deliver formulas for limiting deficits and debts to "acceptable" levels.

There are several possible ratios which serve as benchmarks for indebtedness at the local level. The net debt per inhabitant, the net debt/cash flow ratio, the net debt/own revenues ratio, the burden of

"There are several ratios which serve as benchmarks for indebtedness at the local level. The most commonly uses and useful are the net debt/cash flow ratio, the net debt/own revenue ratio and the burden of debt service"

debt service are the most common⁵. The CoE gives two indications thereabout. Rec20 says "The assessment of financial risk should comprise prior monitoring and warning mechanisms (such as tables presenting the evolution of ... indebtedness and interest rates, ...) as well as intervention and supervisory procedures..." and Rec24. "... The level of debt could be established in relation to the volume of the authority's own resources, their extent, stability and foreseeable development" (Council of Europe, 2009: 230). One can elaborate on these recommendations taking into consideration the ratio: debt service in relation to own local revenues. The general formulas can be:

burden of debt service =
$$\frac{i \times DEBT}{T}$$
 [5]

$$ACAD = \frac{i \times \Delta B}{\Delta T} < (one)$$
 [6]

$$RCAD = \frac{\frac{i \times \Delta B}{i+B}}{\frac{\Delta T}{T}} < (one)$$
 [7]

where ACAD Absolute Coefficient of an Additional Debt RCAD Relative Coefficient of an Additional Debt

AT additional current revenue from taxation;

Equation [5] is the usual ratio measuring how much passive interest must be paid to the bank for the local debt in proportion to local own resources. As such, this ratio does not give any indication of how much interest payment is too much? For this purpose it is necessary to compare the result with an external benchmark table. It is not an in-built ratio as for equations [6] and [7]. Its analytical value depends entirely on the relevance of the external table — which in turn is not founded on economic analysis but on past observations and experiences of what is feasible without leading to financial difficulties or even bankruptcy.⁶ As we develop below, the theoretical interest of the approach from the point of view of political economy is the potential explicative value of the arguments behind formula [5].

Equation [6] compares the interest payment for a new debt with the increased amount of tax yield at disposition. A ratio superior to one indicates that the interest payment will absorb an amount that is larger than the foreseeable increase in tax yield. To respect the balance, a commune would have to count on an increase of its tax base. If this is not realised, the command variables are either an increment in the annual tax coefficient or the reduction of other local public expenditures. Note that if the new debt finances a new investment, the excess of revenues over current expenditures should be sufficient not only for the interest payment, but also for repayment of the debt (amortisation of the investment), M the maintenance cost and E the current cost related to the new or additional public service (equation 4).

Equation [7] gives the same information, but in relative terms. It compares the relative rate of growth of the additional interest payment to total interest paid with the relative rate of growth of an additional tax yield to total taxation. A ratio higher than one indicates that the nominal growth path of the interest payment is faster than the nominal growth of tax resources, a situation which might creates problem in the near future. Thus recommendation 20 (CoE, 2005) is to have warning mechanisms on the evolution of indebtedness and interest rates and payments. Both equations [6] and [7] are in-built and dynamic in the sense that the benchmark value is unity, which fixes the threshold between an acceptable position (<one) and a situation (>one) which could endanger the medium and long terms financial balance of the commune. Note that these benchmarks are rather reductive in that they only consider interest payment, but not the other recurrent costs of an additional investment. Thus more caution is needed than the formal result in the two equations.

Let us analyse equation [5] from the point of view of political economy. For the numerator, the given value is [interest rate $\mathbf x$ gross DEBT]. But for the formula to be neutral vis-à-vis the possible

⁵ Swiss local government, the Harmonised Accounting System 2008 proposes the following ratios: (i) the net rate of indebtedness = external loans minus savings in proportion to tax revenues; (ii) the burden of the debt service = (interest of loans minus interest of saving) + amortisation in proportion to current revenues; (iii) the same, but without amortisation; (iv) the net debt per capita. See CDCF, 2008: 92-106.

⁶ In the Swiss harmonised accounting system for commune MCH2, the reference is that a ratio between 0 and 4% is "good", 4 and 9% is satisfactory and above 10% is "bad". The ratio of debt burden is the proportion of net interest (interest of loans minus interest of savings) to current revenues that includes taxes, user charges, revenues from licence and concessions, grants and financial transfers and revenue sharing – this is the large definition of "current" revenues. See CDCF, 2008: 105.

combination of debt and capital savings or even the patrimonial assets of a commune, the numerator could also be $[(i \times debt)-(r \times debt)]$ x capital)], the net payment of interest. This necessitates to further scrutinise the nature of "i", between short term floating debt and long term consolidated debt, the nature of "r" the net interest from capital savings, and also to distinguish the formal rate from the real interest rate due to possible inflation. Debt is the amount of borrowing owed by the commune to external lending institutions - not the credits that are internal to the commune. "Capital" is a generic term that needs to be detailed: do we consider in the calculation movable capital and immovable properties and for the latter the distinction between administrative properties and financial properties (Dafflon, 2006)? For administrative immovable properties, is it opportune to distinguish between loans corresponding to investment items that are financed through the general budget, and loans for investments that are financed through user charges? Rec73 (CoE, 2005) says that: "As future generations do not have a say in the choice of the projects to be financed, financing through borrowing is mainly suitable for services for which loan will be repaid by means of charges to users." But hence which denominator is reasonable?

For denominator, the usual given value is T for taxation. Yet, the denominator should correspond to the choice of the numerator insofar that one distinguishes between rented financial properties, those financed from the general budget and those financed though user charges. Also, for taxation, it is important to consider local taxes which have a regular yield under normal macroeconomic circumstances from taxes that are irregular due to the specific definition of the base (in small communes, inheritance and gift taxation or taxation on the selling of private immovable properties can present very irregular yields from one year to the other). Also, if communes have partial tax sovereignty (piggyback taxes), indication must be given on whether the ratio is calculated on the basis of the effective tax yield or on the commune's tax potential at 100%.

"The quality of the benchmark is important: it must be transparent, stable, fair and objective. Its values are to be considered as provisional evaluations: they should be subjected to adjustment"

The quality of the benchmark is important: transparent, stable, fair and objective. Benchmark values are to be considered as provisional evaluation: they should be subject to adjustment at regular intervals (CoE, 2004, Rec14; 2009: 229). It is not the same to admit that the burden of debt service is "reasonable" if it absorbs

"Fiscal discipline is characterised through a constitutional or legal rule that requires balancing the budget and prescribes the conditionality for new loans"

less than 6% of tax potential when the average interest rate for loans to the commune is around 5 per cent, than when this rate falls down to 2,5% as it is now the case for Swiss communes.⁷

These questions are not raised simply to exemplify analytical difficulties in computing debt ratios or to cast doubt on their utility in debt management. But one must be very cautious in using debt ratios for benchmarking: within a commune, the time series of comparison must be coherent with the same measurement method through the years; between communes, it is important to compare what is comparable. Looking at benchmarking practice reveals that this is far from being routine considerations.

5. Fiscal Discipline

The next step in controlling deficits and limiting local indebtedness is fiscal discipline. Fiscal discipline is characterised through a constitutional or legal rule that requires balancing the budget and prescribes the conditionality for new loans. The pros and cons of fiscal discipline have been largely debated elsewhere (Ter-Minassian and Craig, 1997; Novaresi, 2001; Dafflon, 2002; Swianiewicz, 2004). Whether rules of fiscal discipline are founded in economic theory or not is not the issue here. They exist for various reasons (Council of Europe, 2009: 270, Rec75). We can be pragmatic, using "process learning" through scrutinizing successful practices in order to understand the policy process and, when possible, to contextualise it to new national circumstances (Blindenbacher and Watts, 2003: 16-20). What institutional economics analyses here is the design of the legal measures applied for controlling deficit and debt.

Rules of control can be imposed top-down on communes by the next government level (Province, Region, canton, Land) or the Centre. In the view of the Council of Europe, "restrictions should be fair and discussed with local authorities" (CoE, 2009: 270, Rec75). But, as it is the case in Swiss cantons, it can also be self-decided by the canton's electorate in order to contain the inclination of parliamentary politicians to spend more and more and engage in logrolling in order to please their own clientele. In other words, at one point of time, citizens are responsible and wise

⁷ The average nominal annual rate of interest for loan to the communes in Switzerland increased from 5.35% in 1989 to 7% in 1992, then regularly fall down to 5.5% in 1995, 4.12% in 2000, 3.21% in 2005 and 2.5% in 2010. For the last 20 years, its nominal average value has been 4.75%.

enough to respect the golden rule revisited, but they fear that this could not be the case in the future. And therefore they decide themselves to fix rules for the future management of their finance in the form of a hard budget constraint. In the Swiss cantons, this is normally coupled with legal rules concerning the financial referendum (Novaresi, 2001). There are two additional points that desserve attention:

(i) In a federal system, it important that with top-down fiscal discipline, the government layer which imposes a hard budget constraint and debt limits on its sub-level entities also respect the same rules for itself. Vertical accountability cannot be that a constraint is imposed on one government layer, but relaxed for the others. For example, in the Euro zone, the

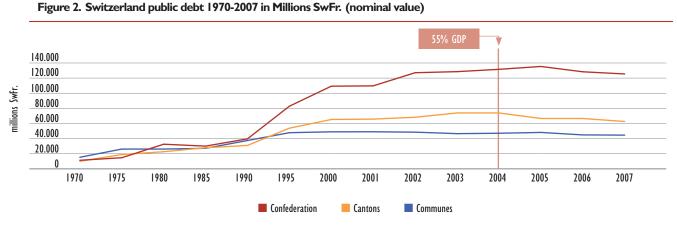
distribution of the Maastricht criteria limits between the national government, the regions and the communes, was not discussed in the early years (Dafflon ed., 2002) and is far from being explicitly fixed nowadays. It is a real problem not simply from the point of view of national macroeconomic policies, but also for the respect of local budget autonomy and accountability.

(ii) Rule of fiscal discipline must contain a penalty clause in case of non respect and an absolute clause of no bailout. For the Council of Europe: "In order to make decision-makers more accountable, the central authority should not offer guarantees for loans raised by local authorities, save in exceptional circumstances (CoE, 2005; Rec76).

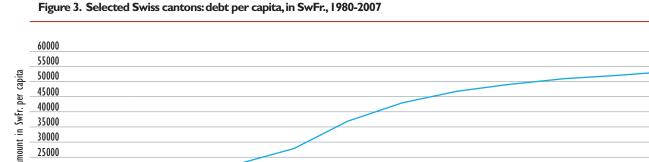
6,000 5,000 4,000 or deficit (-) 3,000 2,000 1,000 £ -1,000 -2,000 -3,000 -4,000 -5,000 1970 1975 1980 1985 1990 1995 2000 2001 2002 2003 2004 2005 2006 2007 Confederation Cantons Communes

Figure 1. Switzerland: annual result 1970-2000 in Millions SwFr. (nominal value)

Source: Finances publiques en Suisse, Federal Department of Finances, Bern, Swiss Statistics Series 18, reference years; own calculation.



Source: Finances publiques en Suisse, Federal Department of Finances, Bern, Swiss Statistics Series 18, reference years; own calculation.



5 St. Gallen Fribourg Zurich Vaud Genève Graubunden Source: Finances publiques en Suisse, Federal Department of Finances, Bern, Swiss Statistics Series 18, reference years; own calculation.

In the present economic circumstances of heavy public deficits and indebtedness in many OCDE countries, Switzerland is the prominent exception with an overall deficit of the three government layers and the social security below the Maastricht 3 percent GDP criteria and a total debt also lower that the 60% GDP limit. Figures 1 and 2 cast the general budgetary and accounting environment for the three government layers. Figure 1 illustrates the situation for the annual accounts for the period 1970-2007. It is remarkable to note that since the end of the 1990s, the communes in general have recovered healthy position in their public finances with no annual deficit since 2000. Years 2003 and (1995) were exceptions: the total public deficit was -5.996 (-7.270) millions SwFr. which corresponded to -1.14% (-1.95%) GDP.

Figure 2 gives the debt position of the three government layers. 2004 was the record year with a total debt of 246.389 millions SwFr. or 55% of GDP. Note again the remarkable position of the local government layer: its total debt has been slowly increasing in nominal terms from 1970 to 1995, but has stabilised thereafter. In the face value of these annual results, cantons and communes have in general a good command over their budgets and indebtedness. However, the individual positions of the cantons, and the incidence of the cantonal position on the communes, differ with regard to the design of their budget constraint and the financial referendum process (Novaresi, 2001). What is the story behind these results?

In 2001 (December 2), the federal electorate voted the introduction of a limit to federal deficits and debt; it has been fully implemented since 2007. Figure 2 shows that the progressive introduction of the "brake to federal deficit and debt" first slowed down the rapidly growing trend registered between 1990 and 2002, then managed since 2006 to reverse the tendency.

The cantons, for themselves and the communes have a longer tradition of budget constraint. With many different designs in their deficit and debt brakes, the Swiss cantons are an ideal laboratory for observations. Pioneer, Fribourg introduced a legal rule limiting deficits in 1960 already; the cantonal parliament updated and reinforced the rule in 1994 and 2005. Graubünden followed in 1971. In 1987, nineteen cantons had introduced rules of deficit and debt limitation; most of them reinforced the rules during the 1998-2008 period. The cantons of Valais (2002), Vaud (2003), Neuchâtel (2005) and Jura (2009) were the last to adopt deficit and debt brakes. Today, the twenty-six cantons have introduced more or less soft-to-hard budget constraints for balancing the budget and controlling debt. Figure 3 illustrates the situation for six selected cantons.8 The described hard budget constraint is that of Fribourg - which is by large the same for the cantonal and the communal layers.9

10

Average

П

12

In Fribourg, 10 the budget system distinguishes between current and capital accounts; and also between real monetary outlays and revenues from pure accounting charges and entries. The current

⁸ The cantons were selected on the basis of two criteria. First, the year of introduction of the budget constraint: Fribourg is the pioneer, followed by Graubünden; Zurich introduced it in 2001 in a period where the public debt had exploded. Vaud was among the last to introduce a brake to deficit. The second criteria stems from Novaresi's research (2001). He considered five arguments to measure the "soft-to-hard" quality of the cantons' budget constraints and gave them a classification from 0 (soft) to 100 (hard). Graubünden, with 87 points, St-Gallen 77 points and Fribourg 75 points are ahead; Vaud (46) and Zurich (44) are in the average bracket and Geneva, with 28, has the poorest result. The selection offers a good comparison of the cantonal situations. There is no such a study at the local level. But the general rule which applies is that the cantonal requirement for the communes is the mirror of the cantonal constraint. A canton cannot be severe at the local level if it is lax for its own regard.

 $^{^{\}rm 9}$ The hard budget constraint of St-Gallen, the other successful story in the Swiss context, is given in Kirchgässner (2009: 59-86).

¹⁰ The legal references for the canton of Fribourg are: the law of November 25, 1994 on the State finance RS 610.1 and its application law of March 12, 1996 RS 610.11; for the commune: the law of September 25, 1980 on the communes RS 140.1.

budget is annual. There is a budget procedure for ordinary times and one for exceptional economic situations. "Exceptional" is clearly defined and explicitly limited in access and time. The budget constraint adapts to the two procedures in different ways and sanctions.

In "normal" times, the current budget must be annually balanced (art. 40a of the state finance law). Current expenditures (net of accounting charges) cannot exceed current revenues (net of pure accounting entries) by more than 2%. If this threshold is over passed, then the coefficient 12 of the direct taxes is increased automatically so as to recover the balance. No referendum can be demanded. If the resulting account of the same reference year presents a deficit, it has to be compensated within the immediate next five years: that is, compensation of at least one-fifth of the deficit must be written in the following budgets which in turn must be balanced. Again, if the 2% clause is not respected, the tax coefficient is adjusted.¹³ The financial law is symmetric in the sense that it also regulates "especially important" good results. If the account presents an excess of revenues compared to what was foreseen in the budget, then the result must be (partly) used to reduce direct taxation. The tax reduction must be addressed in priority to relieve the tax burden of families with children. "Specially important" is defined when two conditions are fulfilled: (1) the direct tax yield in the account must correspond to at least 106% of the corresponding amount in the budget, that is a 6% net increase in nominal terms; (2) the excess of revenue must exceed current public expenditures by at least 4%.

"Exceptional situations" are strictly codified in the law: "economic downturn", and "exceptional financial needs". Economic downturn is recognised when one of the three following conditions is fulfilled: (a) the variation in GDP is negative for two consecutive trimesters; (b) the unemployment rate is higher than 5%; (c) the annual variations of both

wages and fiscal revenues are negative. In this case, the rule of a balanced budget can be softened through an authorised deficit limit of 2% over the current revenues (net of pure accounting entries). Note that the text of the law is not coherent in two articles (40b and 41). Article 40b recognises a 2% deficit limit within a qualified situation (economic downturn); article 41 accepts a 2% deficit limit without specification.

Circumstances of exceptional financial needs are natural catastrophes or unique circumstances which are at the same time out of control of the cantonal authorities, of major impact on the population of the canton, unforeseeable and for which no financial provision has been made. In addition, the resulting costs of the damage must correspond to more that 1% of the current revenues (net of pure accounting entries). When these cumulative conditions are met, the cantonal Parliament may increase the deficit limit (2% + the damage costs) and extend the compensation period from 5 to 7 years. The parliamentary decision must be approved by the absolute majority of its members – not by simple majority vote.

The budget constraint is matched by the referendum rules for financial maters. Any decision of the cantonal Parliament which corresponds to a new public expenditure is submitted to the compulsory referendum if its amount is greater than 1% of the total current expenditures (net of pure accounting charges) as written in the last published official annual account of the state. The referendum is facultative for expenditure between $\frac{1}{4}$ % and $\frac{1}{4}$ %.

"The budget constraint is matched by the referendum rules for financial matters. Any decision is submitted to compulsory referendum if its amount is greater than 1% of the total current expenditures"

The facultative referendum can be demanded by 6000 citizens¹⁴ or one-fourth of the elected members of the cantonal parliament. At the local level, the deficit limit is 5% of total revenue (net of pure accounting entries) instead of 2%. If [expenditures > revenue] by 5% or more, the communal coefficient of direct taxation must be increased. Contrary to the canton, the increase must be decided by vote in the local legislative assembly – but this is rather formal since the communes are under the supervision of the cantonal authorities. In case of refusal, the budget has to be modified and passed a second time in the legislative assembly within 60 days. The options are: reduction of expenditures, approval of the tax coefficient increase, a mix of both. In case of a second refusal, the cantonal authorities fix the tax coefficient so as to balance the budget.

Readers with special interest in the details of the deficit and debt brake in Fribourg can obtain the long version of this paper on www.unifr.ch/ finpub under entries "publications" and "working papers".

 $^{^{12}}$ The general formulation of the tax system is T = t × [B – Dj] x K, where t is the tax rate schedule, B the tax base and D tax expenditures, K the tax coefficient. At the cantonal level, t, B and D are written in the cantonal tax law and cannot be changed within the budget process. K is the tax coefficient which is the control variable to obtain a balanced current budget. The reason why t, B and D cannot be changed in the budget process is that the communes also use the same tax system, but are not allowed to change the legal variables. Communes can only proceed by adapting their own coefficient K (piggyback system) to balance their own current budget. If the canton changes t, B or D, it would create tax externalities on the communes and a domino effect on the tax yield in the municipal budgets. This is neither efficient nor acceptable.

In 2007, the Fribourg the gross cantonal public debt was 710 millions SwFr., that is around 6% of GDP (12.211 millions SwFr.). A 2% deficit of the current account would correspond to 0.02 2.625 millions SwFr. = 53 millions SwFr. that is 0.4% of GDP. At the local level, the legal limit is 5% of the communes' current accounts, that is 5% of 1.248 millions = 62 millions SwFr. or 0.5% GDP. It means that the sum of the cantonal and communal deficits authorised within the hard budget constraints corresponds to 0.9% of the cantonal GDP. Compared to the Maastricht criteria, this would leave the federal layer with a residual deficit limit of 2.1% of GDP in the canton. The same calculation should be repeated for the 25 others cantons.

¹⁴ For 181'079 electors in March 2010.Thus 6000 = 3,3% of the electorate. This is a soft requirement in Swiss comparison.

The debt limit is supervised differently: each investment that is financed by loan must be decided separately by the legislative assembly on the base of a report that contains (i) a description of the project, (ii) the total investment cost and possible participations or grant-in-aid from the canton or/ and the Confederation, (iii) the service of the debt, amortisation and repayment. If one of the information is missing, the decision can be disputed within 30 days by any resident citizen; the Prefect will have to annul the decision. The loan has to be authorised by the canton, which keeps a register. The canton controls annually that the amortisations in the book correspond to the pay-as-you-use principle and that debt repayments for the corresponding amounts are effective. In case of non respect of the rule, the commune has to present a recovery plan (normally in three years) within a balanced current budget. If necessary, the tax coefficient must be adapted.

In the communes with a general council (legislative elected assembly), investment expenditures, the tax coefficients and user charges are submitted to facultative referendum. In commune with a regime of assembly of the citizens or Landsgemeinde, there is no referendum since citizens have direct decision over the budget items.

6. Conclusion

The political economy of controlling deficit and debt in local finance follows a sequence of reasoning which can be represented in line such as:

Balanced budget No deficit I	Golden rule revisited 2	Debt ratios 3	Hard budget constraint 4

How much economic content, and how much normative value judgement in each box vary sensibly from one to the other. Obviously, a strict classical rule of balancing the budget corresponds to a "no deficit no debt" position. It would be very hard on local government since it would probably much reduce its investment capacity — unless investments are financed by financial transfers from the higher layer, which then creates a problem of autonomy. The only own way would be to pre-financed investment. But this would not respect equity in the sense of a judicious distribution over the years of the benefits of investment and its cost.

The second box elegantly solves this dilemma. The golden rule of a balanced budget is applied to the current budget only. Investments are financed by loans on a pay-as-you-use basis. Equations (1) to (4) fix the rules of the game. The economic logic is respected: first, the current account must finance the debt service of the present debt of a commune and support the charge of the economic amortisation of the actual investment items. New investments financed by loan are possible as far as interest, amortisation, maintenance costs and service costs are foreseen in the current budget, which has to be balanced. Equation (4) secures the efficiency of the decision to allocate funds to the new investment; pay-as-you-use finance guarantees the intergenerational equity. It is sound local public finance when respected.

Debt ratios, if carefully chosen, are complementary to and not substitute for the golden rule revisited. The golden rule revisited gives a limit through procedure, not proportion. It stipulate that i, d, M and E in equation (4) must be paid out of current resources, and thus how much debt service is possible, but it does not say a word about how much debt service is acceptable. Debt ratios in Box 3 do this job. There are two problems: one is to select the correct and significant ratios that will be useful for budget and debt management. The second is that ratios do not deliver the information. The information depends on the benchmark which serves as a reference. But benchmarks are not founded on economic theory. They simply represent "best practices". How best these practices are depends on the context of their application and the institutional setting. "Cut and copy" solutions are not advisable. Recommendations are always possible, but the result finally depends on a trial-and-error process.

Consider finally box 4. There is no theory of budget constraint that gives the keys for practical policy implementation. Deficit and debt limits are "soft" or "hard" according to the detailed architecture of the constraint. We gave elsewhere ten questions to qualify the budget constraint, but these are guidelines, not a ready-made theory. The success of a budget constraint also depends from the other surrounding legal rules. Is the moderate indebtedness of certain cantons the result of the budget constraint, or the more or less easy access to the financial referendum? What are the respective merits of the one and the other? And in canton with a long tradition of budget constraint, like in Fribourg, is the good financial position of the cantonal and local public finances due to the actual voters' preferences for sound finance or is it the

"Benchmarks are not founded on economic theory; they represent 'best practices'. How good these practices are depends on the context of their application and the institutional setting"

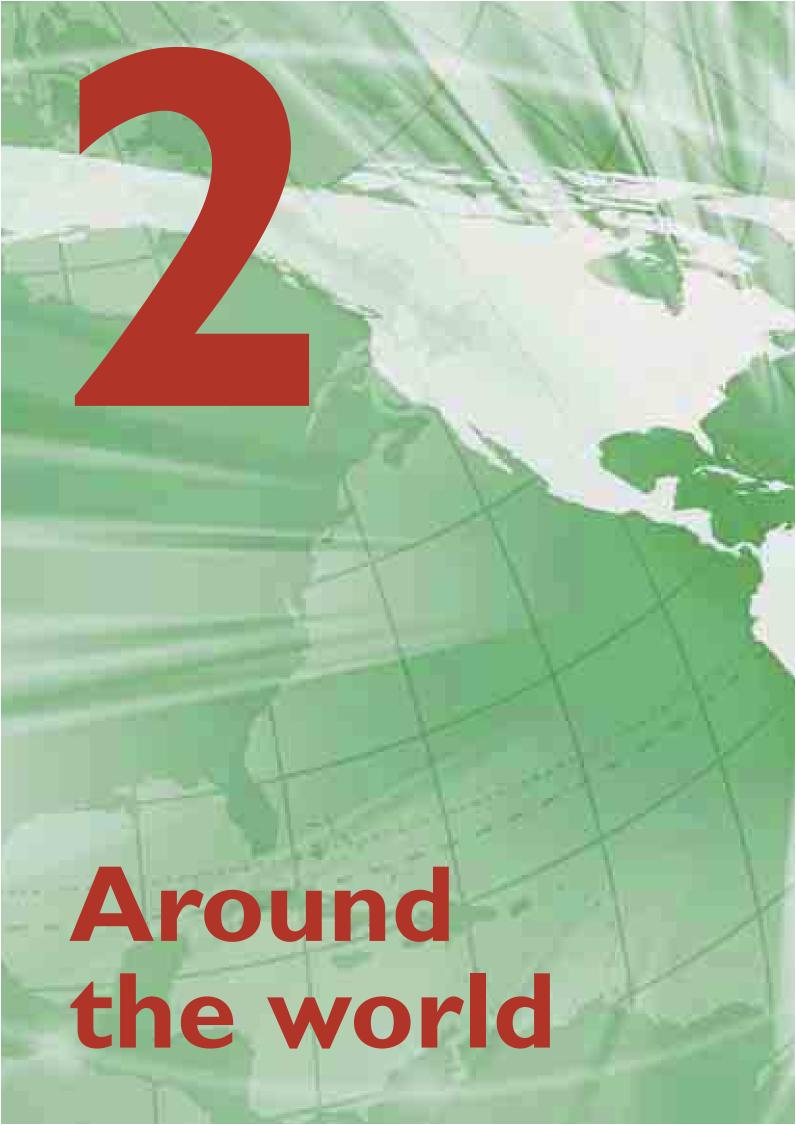
The law on the communes contains the principle of pay-as-you use amortisation. Article 53 of the application law fixes the rates of linear amortisation according to the categories of investment. For example: 50 years or 2% for water reservoir, 33 years or 3% for school building, 25 years or 4% for water distribution network, sewage, waste water purification plant, and so on.

result of the hard budget constraint — or a combination — or are the preferences somehow moulded by the existing rules so that voters have "internalised" the rules without noticing it? Confronted with these normative questions, we have taken the simplest way: compare processes and results, select the most efficient ones and scrutinize best practices. There is still much to be studied by academics and a long way for "university in the city".

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Financing European Local Governments

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I. Introduction

Europe has a long tradition of decentralised service delivery. Conditions vary across countries, but European local governments face a common challenge of having to meet growing demands for local services —especially in relation to population ageing and

immigration— in a particularly constraining, post-global crisis fiscal environment. At the same time, there is considerable diversity in financing arrangements for European local governments, depending on the expenditure mandates and revenue sources assigned to local jurisdictions. Provisions for intergovernmental transfers and revenue sharing, which typically account for the bulk of local government financing typically, are also diverse across countries. Local government borrowing is constrained by fiscal rules and/or prudential regulations on local government exposure to debt.

This paper provides an overview of local government finances, including expenditure, revenue and intergovernmental transfers and grants, and discusses the main common challenges facing local authorities in Europe.

2. An Overview of European Local Governments

There is considerable diversity in the internal organisation of European governments. Local authorities enjoy broad legislative, financial and policymaking autonomy in the federations (Austria, Belgium, Germany and Switzerland) and quasifederations (Italy and Spain). Even among the unitary States, there are countries with a long tradition of decentralised fiscal and financial management, such as the Nordic countries. The number of administrative layers also varies across countries and includes middle-tier jurisdictions in some cases, in addition to the local authorities, such as municipalities, communes, local councils or districts, and provinces in some countries (Table I). Financing arrangements are far from immutable, and often reflect changes in the administrative structure of sub-national

governments. Several European countries have reshaped their internal jurisdictional boundaries through amalgamations of local or middle-tier authorities and/or by eliminating administrative layers (Austria, Sweden, Denmark, Belgium, Finland, Greece, Latvia, Lithuania and the Netherlands). Reforms are under way in England, Finland, France, Iceland and Luxembourg. Regional governments are being strengthened in Greece, Latvia, Lithuania, Norway, Poland, Romania and Sweden.

3. Local Government Finances

3.1 Expenditure

The assignment of expenditure functions to local governments follows the "general competence" principle, which is enshrined in the European Charter of Local Self-Government. Accordingly, services that contribute most closely to the satisfaction of local preferences and needs tend to be under the purview of local governments. This includes in most countries responsibility for the provision of primary education, urban amenities, waste collection and treatment, transport and water/sanitation services. In some cases, social benefits (unemployment benefits, etc.), health care, and law and order are also under the responsibility of local budgets. Taken together, local government outlays account for about one-quarter of general government expenditure in Europe, or about 11.5% of GDP (Figure 1). Compensation for employees take up about one-third of local government spending on average, whereas investment (gross fixed capital formation) accounts for about 13% of local government outlays.

European local governments face the common challenge of having to meet multiple local demands in a fiscally constraining environment. Two main policy considerations therefore emerge:

- To contain unit delivery costs. Experience suggests that interjurisdictional cost sharing (such as cross-border compensation for the costs of health care in Denmark and Sweden) and joint service delivery (as in the case of intermunicipal consortia in many countries) can do much to reduce unit delivery costs in many areas. Local governments can also reduce unit delivery costs by seeking economies of scale, including by closing underutilised facilities and amalgamating small jurisdictions.
- To deal with structural shifts in demand. Demand for local services

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	Population (millions, 1st January 2009)	GDP (billions of current euros in PPP terms, 2008)	GDP per capita (thousands of current euros in PPP terms, 2008)	Structure of government (number of sub-national layers, 2009)	Average population of municipalities (2008-2009)
Austria	8.4	258.2	31.0	Federal (2)	3,540
Belgium	10.8	309.1	28.9	Federal (3)	18,180
Bulgaria	7.6	78.8	10.4	Unitary (1)	29,015
Cyprus	0.8	19.1	24.0	Unitary (1)	1,510
Czech Rep.	10.5	210.2	20.2	Unitary (2)	1,670
Denmark	5.5	165.4	30.1	Unitary (2)	56,040
Estonia	1.3	22.6	16.9	Unitary (1)	5,910
Finland	5.3	155.7	29.3	Unitary (1)	15,265
France	64.4	I 735.8	27.1	Unitary (3)	1,750
Germany	82.0	2 380.4	29.0	Federal (3)	6,655
Greece	11.3	265.6	23.6	Unitary (2)	10,870
Hungary	10.0	162.0	16.1	Unitary (2)	3,160
Ireland	4.5	150.8	33.9	Unitary (2)	38,975
Italy	60.0	I 526.9	25.5	Unitary (3)	7,395
Latvia	2.3	32.6	14.4	Unitary (1)	19,205
Lithuania	3.3	52.1	15.5	Unitary (1)	55,965
Luxembourg	0.5	33.9	69.3	Unitary (1)	4,215
Malta	0.4	7.9	19.1	Unitary (1)	6,060
Netherlands	16.5	552.3	33.6	Unitary (2)	37,280
Poland	38.1	539.3	14.1	Unitary (3)	15,380
Portugal	10.6	202.4	19.1	Unitary (2)	34,485
Romania	21.5	259.0		Unitary (2)	6,760
Slovak Rep.	5.4	97.9	18.1	Unitary (2)	1,870
Slovenia	2.0	46.1	22.8	Unitary (1)	9,630
Spain	45.8	l 173.3	25.7	Quasi-federal (3)	5,620
Sweden	9.3	278.6	30.1	Unitary (2)	31,790
United Kingdom	61.6	I 788.7	29.1	Unitary (3)	151,110
EU 27	499.7	12 501.7	25.1		
Iceland	0.3	9.7	30.3	Unitary (1)	4,150
Norway	4.8	228.6	47.9	Unitary (2)	11,020
Switzerland	7.7	269.9	35.3	Federal (2)	2,950

Sources: Eurostat, World Bank and Dexia.

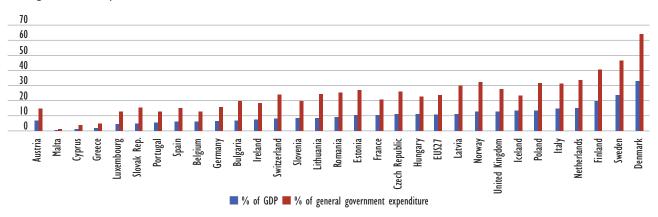
changes over time because of population ageing (especially where local governments are important providers of health care and social protection services) and immigration (particularly where local authorities play a leading role in the provision and financing of housing, employment and related social assistance services),

which are in high demand among immigrants². To meet these demands, arrangements will need to be put in place to grant local governments new revenue sources or share provision costs across the different levels of administration.

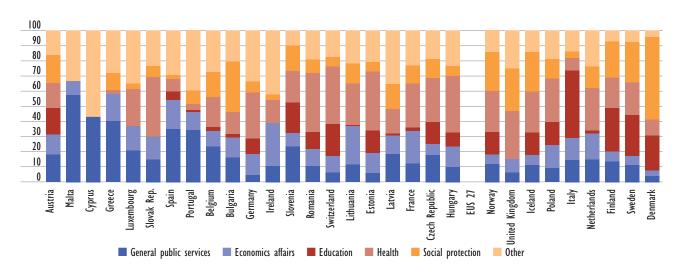
² The United Nations projects the old-age dependency ratio to nearly double to 46% of the European population during 2010-50. Demographic trends are particularly testing in Southern Europe and the transition economies of Central and Eastern Europe. The proportion of foreign-born individuals in the population of Greece and Spain, for example, is already close to 10%.

Figure I. Local government expenditure

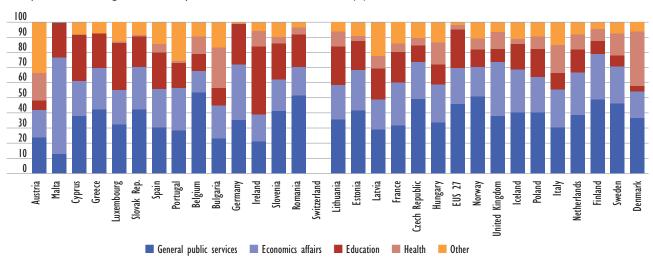
Local government expenditure



Composition of local government expenditure: Functional classification (%)



Composition of local government expenditure: Economic classification (%)



3.2 Revenue

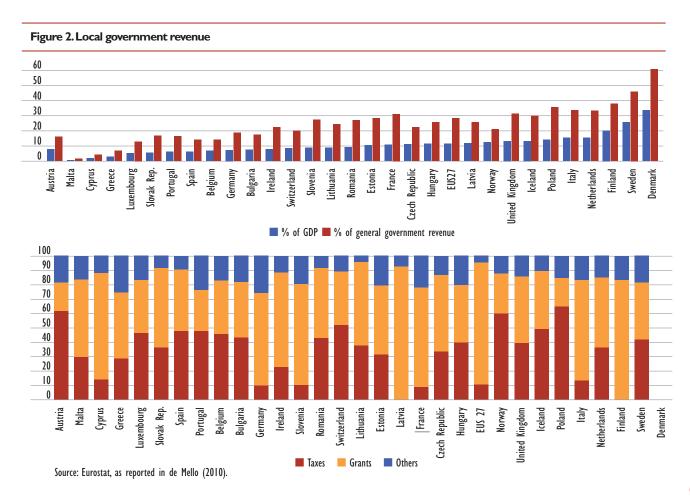
Local government rely on different sources of revenue. Grants and transfers account for nearly one-half of local government revenue on average in the 27 member countries of the European Union, followed by taxes, at over one-third of local revenue (Figure 2). Non-tax instruments, such as user charges and fees for services, make up a small share of revenue in most countries.

In many countries, arrangements for intergovernmental transfers include equalisation provisions. While they ensure that service delivery is not constrained by local jurisdictions' own revenue mobilisation capacity, equalisation is not without problems. For example, most countries use actual, rather than estimated revenue and normative costs per unit of service delivered in their equalisation formulas. If service delivery is inefficient, historical budgeting perpetuates deficiencies, and if local tax bases are underexploited, actual collections overestimate the need for equalisation and create disincentives for local tax effort. At the same time, transfers tend to be formula-based. While favouring transparency and predictability, allocation formulas tend to rely on parameters, such as the size of the resident population, which assume that delivery costs rise monotonically with population. As such, these arrangements may discourage local authorities from seeking economies of scale, unless they are free to allocate the associated cost savings to alternative uses.

As for tax revenue, the composition of the tax take varies significantly across countries, and so do the challenges facing local governments. In particular, two police issues emerge.

Local authorities will need to cope with permanent losses in revenue in some countries. This is the case of property tax revenue in countries, such as Ireland, Spain and the United Kingdom, which has declined due to the collapse of real estate prices and investment. The associated revenue loss is likely to be permanent, because it reflects deeper structural changes in the economy, in addition to the end of the pre-crisis real estate bubble. At the same time, local governments need to prepare for the phasing out of levies on business transactions, which is under way or planned in several countries, including Belgium, Germany, Spain and, more recently, France and Hungary.

Local governments often have limited room for smoothing cyclical fluctuations in the budget. This is especially the case in countries where the local authorities rely on taxes on personal and corporate income taxes (as in the Nordic countries) and value added (as in Germany), whose revenue fluctuates with the business cycle, and have limited financial room to borrow. Local budgets may therefore be more pro-cyclical than desirable from the viewpoint of countering the effects of business cycle on economic activity.

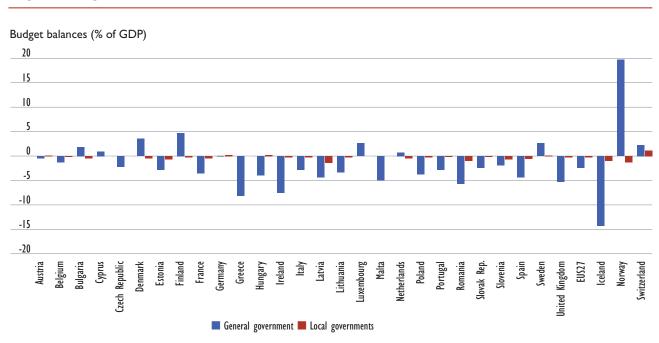


3.3 Financial Management

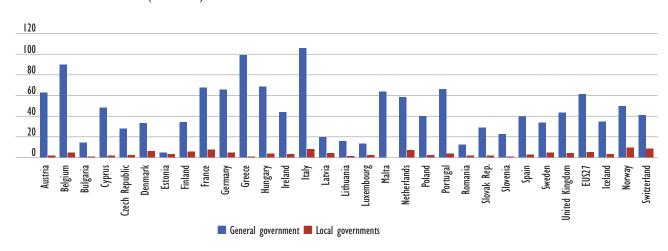
European local government debt is low on average in relation to GDP and in comparison with other levels of administration. Only in a few countries, such as Denmark, Ireland, Latvia and Portugal, does the stock of local government liabilities amount to close to or above 10% of GDP (Figure 3). But in these countries, with the exception of Latvia, local governments also hold sizeable assets and, as a result, their net debt positions are low.

To some extent, low indebtedness is a consequence of limited financial autonomy. Administrative controls tended to be pervasive in Europe but are now being replaced by prudential regulations based on debt service, loan repayment capacity and indebtedness. Nevertheless, local governments are still only allowed to borrow to finance investment (golden rule) in most countries. Unlike their North American counterparts, which typically turn to capital markets for longer-term financing, European local governments tend to rely on banks and have suffered from the effects of the global crisis, which have been particularly severe in specialised market segments and institutions.

Figure 3. Local government revenue



Government indebtedness (% of GDP)



Source: Eurostat, as reported in de Mello (2010).

4. Conclusions

Europe has a long tradition of decentralised fiscal management. Institutional arrangements and financial conditions vary across the continent, but European local governments face important common challenges, especially the need to cope with the effects on the public finances of population ageing and immigration, which pose pressures on local budgets. Local governments will also need to face challenges related to comprehensive fiscal consolidation, which is needed in most countries in response to a sharp increase in public indebtedness as a result of the global crisis and the ensuing recession.

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Tourism Taxes

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I. Introduction: Tourism and Taxes

One of the characteristics the tourism industry has displayed at the international level during the past decades, along with its remarkable economic relevance, is undoubtedly the increasing tax burden it supports. In fact, an analysis

of tourism taxes reveals a large range of charges that affect the industry as well as a tendency to broaden the affected bases.

According to the UNWTO's definition of tourism (1994) a tax can be defined as tourism-based when it affects an activity considered as tourism or tourists themselves. Transport, accommodation, food, shopping, leisure, culture and sports activities are viewed as characteristic of tourism. In this context, the taxes that affect tourism-based businesses (airlines, tourist accommodations, restaurants, attractions, etc.) and tourists directly can be described as tourism taxes. The table I presents several examples of the tourism tax instruments applied in practice.

Thus, as shown in the table I, these taxes can be integrated into the general tax system, introducing a differentiation in consumption taxes such as VAT, or can be newly created sector-specific taxes, such as entry taxes, air passenger duty or bed taxes.

2. Motivations for Tourism Taxes

The arguments supporting the relevance and evolution of taxes on the tourism sector are certainly varied. The main argument for the appearance and growth of such taxes is the industry's significant potential for raising revenue. The tourism industry's substantial economic importance in many developed and developing countries cannot be ignored, as recent statistics indicate. Tourism accounts for around 9% of the world's GDP and it is expected to grow 4.4% between 2010 and 2020, higher than expected for the world product (WTTC, 2010). These figures undoubtedly affirm a broad tax base for taxes levied on any of the industry's various representative activities. In fact, the UNWTO estimates that

the tourism industry provides between 10% and 25% of tourist countries' tax revenues (WTO, 1998).

The intense use of these taxes to raise revenue is further explained by two characteristics to consider in designing tourism taxes. First, the low elasticity of demand for some tourist services. The sensitivity of demand to price changes is low, which means that applying a tax can generate significant increases in revenue. Studies on the demand for tourist accommodation indicated very low elasticities in demand in most cases. Second, the large-scale exportability of the tax. The low elasticity of demand described above means that, in terms of tax effects, most of the tax burden is borne by tourists, which is a political advantage since tourists, by definition, do not vote. The achievement of additional income without a political cost for the responsible authorities is undoubtedly an appealing feature of implementing such taxes (Jensen and Wanhill, 2007).

Therefore, the additional income generated by the sector is the first reason put forward to defend levies on tourism. This argument is strengthened by the widespread perception that tourism is associated with the increased spending needed by the growing number of users of certain public services that is a result of tourism. In this case, the appearance of tourism taxes would be justified by the need to offset the net fiscal cost to local government (Hughes, 1981). In fact, tourist accommodation taxes, common in many tourist destinations, have flourished through such an argument. Taxes such as the French "taxe de sejour" or the US hotel occupancy tax are defined as taxes to ensure that tourists help finance the higher local costs caused by their stays (waste collection, security and cleaning, etc.).

Finally, in some cases, tourism taxes are conceived as a mechanism for incorporating the external costs the tourism industry generates in order to improve efficiency in the use of resources (Forsyth and Dwyer, 2002; Gooroochurn and Sinclair, 2005). The tourism boom has negative spillover effects, given that the development of tourism is associated with the overuse of a destination's resources, which leads to the appearance of problems related to environmental degradation and the congestion of nature areas (Briassoulis, 2002). Tax instruments aim to reflect the true monetary value of the attributes users employ, which means a greater efficiency in their provision.

Taxes related to the use of natural resources by tourism economies are framed within this context. The characterisation of taxes that

¹ Tourists are persons who are "travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited".

² See Fuji, Khaled and Mak, (1985) or Bonham, Fujii, Im and Mak (1992) for Hawaii's case or Aguiló, Riera and Rosselló (2005) for the Balearic Islands'.

Industry	Тах
AirTravel	Airline fuel tax Air passenger duty Air ticket tax
Airport	Departure tax Transit tax Passenger service tax
Accommodation	Turnover tax Payroll tax Hotel room tax Differential VAT rate Bed tax Occupancy tax
Road Transport	Fuel tax Toll charges
Coaches	Tourist transport tax
Visitor attractions	Visitor attractions VAT and sales tax
Restaurants	Liquor tax Differential VAT rate
Car rental	Municipal tax Purchase duty
Entry/Exit taxes	Visa/Travel permit

Source: World Tourism Organization, 1998.

aim to correct environmental externalities and the congestion associated with the use of nature areas is diverse. Thus, we find taxes on access to a nature space, general user taxes and other taxes related to visits (Font et al., 2004). Entry fees are collected at the point of access to protected nature areas, while the characteristics of non-exclusion from some natural areas may hinder the implementation of an entry price. In such situations, it is common to find taxes on other services related to the use of space, such as parking, diving or fishing, anchoring of boats, etc. (Eagles, et al., 2002; CFA, 2004), or other representative tourism activities not directly related to the access and use of natural resources, such as lodging, rental cars, etc. (Palmer and Riera, 2003, Palmer et al., 2007)

3. Some Final Thoughts on Tourism Taxes

To sum up, at this point it is worth analysing the veracity of the arguments put forward in favour of tourism taxes. First, the creation of taxes on the sector under the premise of demand elasticities - which entails high revenue associated together with exportable taxes – could be the object of review. Several meta-studies on the elasticity of international tourism demand show higher sensitivities

to price than originally envisaged (Crouch, 1995; Lim, 1999; Song, et al., 2010). In any case, the common result in all the studies is that elasticity of demand depends on the country of origin and destination analysed, substitute destinations, as well as the period of the sample. In short, it follows that levying taxes on the basis of low demand elasticities without studies to support this may have unintended consequences. At this point, we might add the desirability of including an analysis of the elasticity of supply in studies, since the combination of the two determines the true fiscal impact of a tax that is levied.

Second, the claim that tourists' impact on expenditure is greater than the income they bring in for the relevant authorities, which thus justifies the emergence of taxes to offset this net tax cost, can be doubted. The need for compensation is based on the characteristics of the financing system of sub-central governments and the degree of linkage between this system and tourism in sub-central governments (Costa, 2008).

Lastly, with respect to taxes that theoretically correct tourism's negative environmental externalities, a review of their design reveals objectives that revolve purely around collection. In fact,

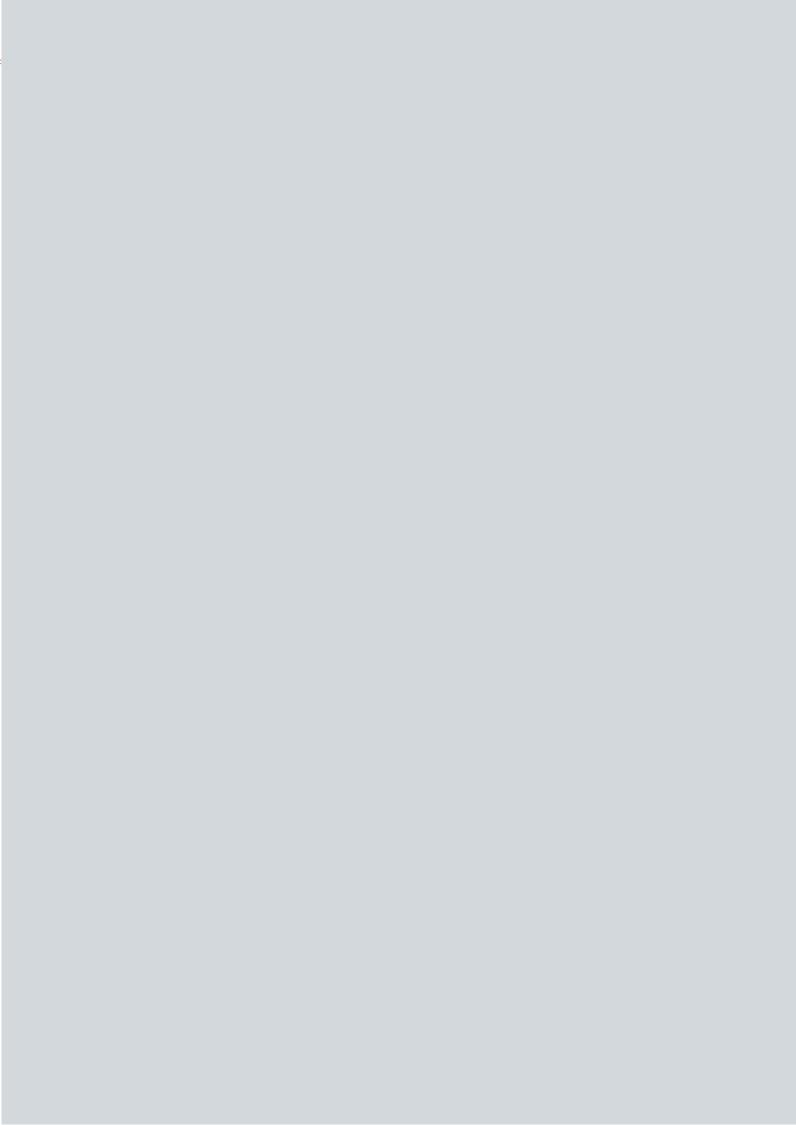
most taxes defined as environmental are created to contribute to a preservation and conservation fund in order to offset insufficient public funding for the authorities. Some of the best known examples are Belize's National Conservation Trust Fund (Hercowitz and Puig, 2003), the entry fees to the Galapagos National Park (Benítez, 2001) and the so-called Balearic 'eco-tax' (Palmer and Riera, 2003).

Given the budgetary constraints that exist in most public administrations and the need for additional income, establishing corrective taxes is a clearly recommendable option. The likelihood of the 'double dividend' derived from their application makes them an instrument with significant advantages over other tax instruments.³ However, in order to be considered an environmental instrument, destinations must not guide the design of their resources for environmental purposes but rather a tax base determined by the environmental problem to be palliated and an optimal tax rate equivalent to external costs. Only then can a tax be defined as unambiguously environmental.

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- ³ When the revenue derived from an environmental tax are used to decrease other taxes that cause inefficiencies or distortions, the possibility exists of an added benefit to environemental betterment, known as the 'second dividend' (Goulder, 1995).

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Filling Fiscal Gaps in Italy: a Challenging Task for the Federal Reform

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of own taxes, charges and expenditure across the country. Such an analysis shows that the aggregate (national) financial gap (current expenditure minus own taxes and charges) for Italy's Regions in 2008 was 1,268 euro per capita, while and the corresponding municipal financial gap was 266 euro per capita, 48% and 31% of current expenditure, respectively.

These gaps, which are characteristic of all federal nations, derive

from territorial differences in expenditure and revenue. In fact, the main taxes currently assigned to sub-national governments vary substantially (in per capita terms) from one area of the country to another, reflecting significant interregional economic disparities. Per capita expenditure, on the other hand, appears to be more uniformly distributed across the country. Figures 1 and 2 give a region-per-region picture of the differences between tax and expenditure distribution, for Regional and Municipal Governments respectively. If we look at the Regions (Fig. 1) we observe that per capita own taxes and charges range from 1,406 euro per capita in the North (Liguria, Emilia Romagna, Lombardia, Toscana, Piemonte and Veneto) to 616 euro per capita in the South (Molise, Campania, Calabria, Puglia and Basilicata); as regards current expenditure, average expenditure in the Northern Regions (2,235 euro per capita) is almost the same as that in the South (2,408 euro per capita). As a result, Italy's northern Regions raise 114%

Regional differences in the case of Italy's Municipalities are a little less striking, although there are larger territorial differences in terms of own resources than in terms of expenditure. It should be pointed out that the current expenditure of northern Municipalities is 887 euro per capita, while that of the southern Municipalities is 77 I euro per capita; on the other hand, the former collect 627 euro per capita of own taxes and charges, while the latter only collect 446 euro per capita. Hence, Municipalities in the North raise 40% more per capita revenue than those in the South, while spending only 15% more.

more resources per capita than its southern Regions, whereas both

spend roughly the same amount per capita.

However the relative uniformity in regional and municipal percapita expenditure among territories actually conceals substantial differences in the quantity and quality of the services provided at the decentralized level. The statistics available show that the South lags some way behind the rest of the country (Franco [2010]). A recent study (Pamolli and Salerno [2010]) estimating the efficient "frontier" of Regional health spending, paints a picture of a country split in two, with the northern-central Regions boasting much higher levels of efficiency and quality of expenditure than their southern counterparts.

1. The Ongoing Fiscal Federalism Reform: an **Update**

The enactment in May 2009 of the framework law providing for the reform of the system by which Italy's Regions and Municipalities are funded (Law 42/2009) marks a step forward towards the decentralization of public finances in Italy.\(^{1}\) However, the law only offers a number of very loose guidelines concerning future government decrees to be adopted over the subsequent two-year period, while providing for a further five-year transitional phase leading to full implementation of the reforms. Thus we are only at the very beginning of a lengthy, difficult reform made more difficult by substantially different points of departure of Italy's different regions, by the limited availability of resources, by technical difficulties and by considerable differences in the political stances of those involved in the implementation of reform.

Up until now (November 2010) only one decree has actually been enacted, and this only relates to a minor issue, namely the devolution to Italy's Regions and Municipalities of Central Government's real estate. Detailed plans for the main building blocks of the reform – tax assignment and the equalizing system for Regions and Municipalities – are yet to be finalised. Moreover, the government has still not provided any official estimates or simulations of the impact of the new financing arrangements on the level and the assignment of resources to local jurisdictions, or any general framework with which to evaluate how the various different aspects of the reform are actually to be coordinated.

2. The Current Scenario

In order to grasp the difficulties involved in implementing fiscal federalism in Italy, one really needs to analyse the current distribution

For an overview, see Pola (2009).

4000 3500 3000 2500 2000 1500 1000 500 0 Lombardia Marche Lazio Abruzzo Toscana Liguria Umbria Camapania Basilicata Calabria talia Emilia Romagna Veneto Molise Piemonte own per capita total taxes and charges per capita current expenditure

Figure 1. Per capita current expenditure and own taxes and charges of Italy's Regions (EUR 2008)

Special Statute Regions (Sicilia, Sardegna, Valle d'Aosta, Friuli Venezia Giulia and Trentino Alto Adige) are excluded. Source: Istat, Balance-sheet of the Municipalities.

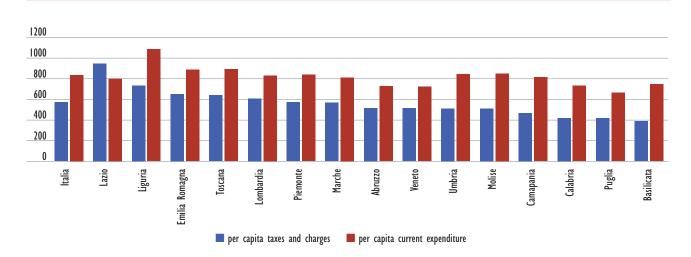


Figure 2. Per capita current expenditure and own taxes and charges of Italy's Municipalities (EUR 2008)

The "Special Statute Regions" (Sicilia, Sardegna, Valle d'Aosta, Friuli Venezia Giulia and Trentino Alto Adige) are excluded. Source: Istat, Balance-sheet of the Regions.

3. Open Issues

Given the stark differences in fiscal gaps across the country, it is clear that the debate over implementation of fiscal federalism is largely dominated by equalizing concerns: richer Regions complain of the inefficiency of poorer Regions in using the strong interregional flows they receive, whereas the poorer Regions complain about the inability of inadequate public resources to fully finance national

standards of decentralized expenditures, given these Regions' limited fiscal capacity.

This explains why the key issue of the ongoing reform is the design of expenditure needs equalization. The reform provides for a system of equalizing transfers for most of the Regions and Municipalities' expenditure programs (about 80% of their current expenditures): equalizing transfers from Central government

should fully fill the gap in each area between (centrally determined) national standards and local fiscal capacity (own taxes and charges). One merit of the reform is its pegging of equalization grants to standardized expenditure, thus overcoming the arbitrary criteria by which Central government's equalization funds are currently apportioned locally.

Central and sub-national governments are currently hotly debating about the question of the level of the aforesaid national standard and, above all, the method of assessing expenditure needs for spending responsibilities assigned to Regions and Municipalities. Generally speaking, sub-national levels of government argue that standard expenditure should be viewed as the amount of resources required in order to provide a standardized basket of decentralized services valued according to efficiency costs (the bottom-up approach). This approach does not guarantee that the expenditure needs calculated in this manner are going to be covered by the share of the national budget assigned to funding local public services. Conversely, Central government is in favour of a different approach that reflects overall public budget priorities and external constraints. This top-down approach firstly establishes an aggregate level of affordable local resources (similarly to what currently happens in the health-care sector, the main public sector currently assigned regional government), and then apportions this overall amount to sub-national governments, according to the main drivers of local needs (population size and composition by age, land area, population density, economic development, etc.). The advantage of this approach is the control it affords over public spending; the drawback is a possible gap between population needs and financial resources for local expenditure.

These two different visions of expenditure needs - on the one hand the guarantee of a standard level of public services (in qualitative-quantitative terms) throughout the country, and on the other hand the definition of a "financial" rule by which to apportion an exogenously determined equalization fund on the basis of variable territorial needs and costs - are both clearly present in the current fiscal federalism reform. The key issue of any future implementation of fiscal federalism in Italy is how these two dimensions are to be interrelated in order to avoid national standards requiring such high levels of expenditure that these standards become inoperable, on the one hand, and in order that Central government, in setting the size of equalizing funds for sub-national governments, does not unduly weaken the scope of interregional equalization, on the other.² The interrelation of the two could be achieved, for example, by:

• improving Central government's budget-setting process with the addition of information regarding the effects that financial decisions can have on local public service provision;

- further encouraging those sub-national governments that currently provide poor local services, in quantitative and qualitative terms, to improve their performance by conditioning the payout of equalizing transfers on actual progress toward national standards;
- enforcing a system of penalties not only against those local authorities that depart from fiscal requirements and standards (such as raising local taxes), but also against those that perform poorly when it comes to delivering public services, compared with similar units (by systematically monitoring outputs and outcomes, by supporting horizontal or vertical cooperation among governments in order to promote best practices, by subjecting local authorities to the supervision and control of a special commissioner, and by preventing ineffective local politicians from standing for further office).

However, the equalization of expenditure needs makes sense if transfers are directed towards territories endowed with appropriate infrastructures. In Italy, the distribution of infrastructures (transportation infrastructures and networks, schools, waterworks, information technology, nursery and long-term care facilities, etc.) varies enormously from one area to another, especially between the North and the South.³ Bridging this interregional infrastructural divide is one of the aims of the reform: a system of conditional equalizing transfers is being introduced in order to reduce, for each Region and Municipality, the gap between current infrastructure endowments and standard infrastructure expenditure needs. However, while the reduction in the interregional infrastructural divide is only a long-term goal, in the short-term there is the problem of how to coordinate local infrastructural endowments with the equalizing mechanism regarding current expenditure: differences in the facilities currently available to local authorities clearly affect local provision of public services, which gives rise to differing costs. If, when calculating standard expenditure needs and monitoring actual performance, no account is taken of these differences in infrastructural endowments, then there will be a serious danger of creating an unrealistic, unfeasible mechanism.

Lastly, the functioning of the equalizing mechanism is further complicated by the greater powers over the coordination of municipal finance entrusted to regional government by fiscal federalism. At present, central government grants go directly to both regional and local authorities, with only limited grants flowing to local authorities from their respective regional governments. The new reform partially modifies this institutional setting by introducing a "cascade" equalizing mechanism: financial resources are transferred from central government to Italy's Regions, and then from the Regions to the Municipalities. So each Region receives equalizing transfers based on the total gap between municipal expenditure needs and Municipalities' own resources

² For an evaluation of the possible effects of fiscal decentralization on the degree of interregional income redistribution accomplished by the Italian National Health Service, see Ferrario and Zanardi (2010).

³ For example, a detailed discussion of territorial differences with regard to health infrastructures can be found in CERM (2010).

evaluated at the regional level. Each Region may agree with its own Municipalities to apportion these funds to local authorities according to different criteria (as with the evaluation of local expenditure needs and local fiscal capacity) from those established by central government.⁴ However, this framework, whilst creating a certain scope for interregional differentiation in municipal equalization, is at present riddled with uncertainty. Will this new mechanism actually work? Will Regions succeed in overcoming the traditional hostility of Municipalities against Regions? Which collective decisional rule adopted at the regional level could facilitate the redistributive solution as opposed to the one established by central government?

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⁴ Some preliminary results about the potential conflict between municipal fiscal needs estimates (at regional level) and actual expenditure are in Rizzo, Ferraresi, Mastrorocco (2010).

Road Pricing and City Tolls

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I. Introduction

Allocation of scarce land resources and environment preservation have proved a major concern to economists, engineers and politicians. In dense urban areas, congestion and pollution have been tackled in a variety of ways, depending on morphological characteristics (in particular, on the scarcity of land), as well as on differences in the political prioritisation between the two (possibly conflicting) objectives.

Some land-abundant areas, such as North America, focused on addressing congestion, by reducing scarcity through an increase in overall road capacity. Other regions, usually space-constrained (e.g., London, Milan, Singapore), had to regulate road scarcity through a market-based system, by adopting various forms of road pricing. Road pricing schemes reduce the incentives to use a car, thereby lowering congestion and pollution simultaneously. Furthermore, they generate revenue for the institution that collects them. This note discusses the regulation mechanisms for a road network of a given capacity; we do not delve into the (albeit important) theme of optimal investment in road infrastructures aimed at relaxing congestion.

Whilst economists generally agree on the market-based approach to regulate congestion and pollution, they debate over the details of an efficient design of the road pricing scheme. On the empirical ground, the debate concerns the extent of the efficiency benefits from road pricing along with the circumstances under which such gains outweigh the costs. This note reviews the economics behind road pricing (section 2) and provides an assessment of some road pricing experiences (section 3).

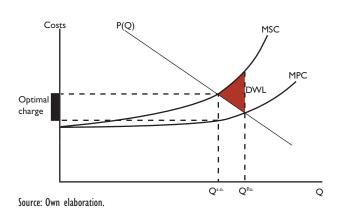
2. Economics Background

If roads are treated as public goods, and cars are allowed to transit free of charge, two negative externalities emerge: congestion and pollution. Externalities occur when an agent's action affects the well-being of some other individuals, who are not compensated for this. Each car pollutes the environment (generating a negative externality on the local population); furthermore, in a congested area, vehicles impose a negative externality by slowing down the others. The combination of the two effects may yield a road overutilisation. Figure I illustrates the workings of a market under a negative externality. It has to be remarked that the equilibrium output is reduced as the externality shrinks.

The literature on city tolls was pioneered by Vickrey (1959, 1963), who proposed a road pricing system based on electronic signals able to track cars' movements, and ultimately charge each driver with the external congestion cost it imposes to the system.

The debate following this original proposal revolved around the magnitude of the benefits accruing from the city tolls. Given the difficulties in properly estimating benefits from lower pollution, most of the studies focus on the benefits stemming from reduced congestion.

Figure 1. The welfare consequences of pollution and congestion1



In Figure 1, Q represents a measure of vehicles' use, with QSO. representing the socially optimal level and QPO the free market equilibrium under no road pricing. P(Q) is the inverse demand function, whilst MPC represents the Marginal Private Cost of using a vehicle and MSC is the corresponding Marginal Social Cost, which is equal to the sum of the MPC, plus the negative externality of pollution and that of congestion. DWL is the Deadweight Loss, that is, the loss of welfare due to a road utilisation that exceeds the social optimum. The Optimal Charge is the price on road usage that re-establishes the social optimum under free markets.

While the demand elasticity for peak-time traffic is known to be relatively low, although possibly increasing recently as a result of the more flexible work hours, the elasticity of both marginal private cost and marginal social cost are quite controversial (see Arnott et al., 2005). As a result, the magnitude of benefits from tolls is still debated.

The optimal design of city tolls sparked considerable attention. In particular, some authors (e.g., Arnott et al., 1990) claim that a coarse toll is sufficient to provide most of the benefits, whereas others (Tsekeris and Voß, 2008) insist on the need for more sophisticated mechanisms able to differentiate the amount of payment according to the time of the day, and to a number of other vehicle characteristics.

3. City Tolls in the Urban Policy Practice

Cordon Fees² were introduced in various cities, including London, Milan, Singapore and Stockholm. In general, though, voters tend to adverse road pricing schemes and this explains the usual political reluctance towards these measures, as well as the fact that a number of projects, after being discussed, have been withdrawn (e.g., Edinburgh, Manchester and New York).³

However, road pricing schemes may be more appealing for voters when they are primarily intended to reduce pollution, and therefore contingent on the cars' emission levels (e.g., Milan, see Rotaris et al, 2010). Also, support for projects aimed at de-congesting increases after an initial test period, in which voters may directly experience the benefits from the measure (e.g., Stockholm, see Hårsman and Quigley (2009)). Finally, prospects of a successful implementation improve if citizens not voting for the municipality bear a substantial proportion of its burden, as in the case of London.

Measuring the effectiveness of city tolls has proved a hard task, in spite of various attempts, both by local authorities, and by independent institutions.⁴ Whilst it is generally accepted that the

² A Cordon Fee is a fee charged for driving in a particular area.

³ See Hårsman and Quigley (2009) and Leape (2006).

Singapore experience is positive, as drivers' response has been in line with the proponents' expectations, and technological implementation costs have been reasonable, an assessment of the most recent programmes is more controversial.

This is also due to the fact that cordon fees are usually part of a broader package of measures, including but not limited to investments in public transport. Whilst changes in congestion are measured easily by the reduction in travel time, the identification of the specific effect of the toll is not. Other often coexisting factors, such as public transportation, parking and bike facilities, business cycle, or publicly funded campaigns aimed at reducing the cars use, are hard to disentangle. Pollution indicators also depend on several factors, including atmospheric conditions, and the vehicles' emission levels (following a downward trend, and affected by various other policies). The project's value depends crucially on the valuation attributed to the time saved, which is contingent to several exogenous factors (agents' activity, time of the day, outside opportunities, individual preferences, etc).⁵ A number of additional effects by the toll may be identified, including a decline in car collisions with respect to unrestricted zones (according to data by Transport for London, 2003, 2007, 2008), coupled with an increase in bike accidents. A further unintended consequence consists in the increase in plate stealing, documented in London.

The level of reduction in traffic congestion is highly controversial. In London, a short-term effect of congestion cutting has been followed by an increasing trend that partially offset the initial drop; in Stockholm, on the other hand, the long-run impact has only strengthened the positive short-run one. (Eliasson, 2009).⁶ Pre-tolls congestion trends (increasing in London, constant in Stockholm) may be responsible for such outcome. Furthermore, it has to be observed that the cordon fee may reallocate traffic, therefore pollution, and possibly congestion, outside the covered area.

Results comparison across cities is complicated by substantial differences in the implementation schemes, such as the size of the

⁶These and other related issues are discussed in Hensher and Goodwin (2004), Mackie (2005) and Santos and Bhakar (2006).

Table	I. Pollution and con	gestion comparison		
		Stockholm	London	Milan
	CO ₂ (Tolled area)	-14 (e); -40 (a)	-16 (a, e)	-14 (e)
age	CO ₂ (County)	-3 (a)	N/A	N/A
Percentage Variations	PM10	-10 to -14 (e)	-16 (e)	-18 (e)
Per var	NOx	-8.5 (e)	-13.4(e)	-17 (e)
	Congestion	-16 (b); -19(a); -22 (c)	-15 to -30 (a, d, e)	-12.3 (e)

⁴ Among others, PRIMA is a leading project of the European Union that studies the road pricing system in 8 cities, including Barcelona, Oslo, and Stockholm. Other projects (e.g., Curacao) have a more general approach.

⁵ For instance, in studying the London experience, Prud'homme and Bocarejo (2005) consider the average value of time to be 8.8€/hours, while the study made by Transport for London (2003) uses an average value of 36.1€/hours (Rotaris et al. (2010).

		Stockholm	London	Milan
	administrative		5	9,3
	operation	220	85	
	setup/depreciation		23	0,6
20	traffic management costs	64	20	
Costs	compliance cost		30	
	fuel tax loss	53		2,2
	correction for indirect tax	65		
	Total cost	402	163	12,1
	car users		110	6
	van users	599	35	9,3 0,6 2,2 12,1 6 0,3 5,6 -3,1 8,4 2 -1 18,2 6.1 Rotaris (201 2008 2-10 EUR
	taxis		40	- 0,3
ţ	public transports	138	42	5,6
penerits	deterred drivers	-74	-25	-3,1
0	increased safey	125	15	8,4
	environment	86	3	2
	Other	182	10	-
	Total benefit	1056	230	18,2
	Net benefit	654	67	6.1
	Reference	Eliasson (2009)	Leape (2006)	Rotaris (2010)
	Year prices	2005	2005	2008
	Toll value	10-20 SEK	5 GBP	2-10 EUR
	Currency	million SEK	million GBP	million EUR
_			·	

Source: Eliasson (2009) for Stockholm; Leape (2006) for London; Rotaris et al. (2010) for Milan.

restricted areas (for example, Singapore's is smaller than London's, Milan's five times smaller than Stockholm's), and the type of tariff (flat in London, contingent on the car emissions in Milan, depending on the hour, on the number of passengers in the car and on the city zone in Singapore, depending only on the hour in Stockholm).

Descriptive statistics show a decrease in pollution where city tolls were adopted. Albalate et al. (2009) shows that, after the cordon, carbon dioxide levels in London fell by 16%. Table 1 shows data on the trend of various types of pollutants in the different areas subject to city tolls.

The economic value of tolls depends mainly on three factors: i) the size of the city, along with the initial level of congestion: the closer to social optimum the level of initial congestion, the lower the proceeds from an efficient toll. ii) The implementation costs, depending on the type of technology being used. Among the several possible options, the optical plate recognition systems (via close circuit TV) guarantees reduced user inconvenience, price flexibility, medium operating costs, and no disturbance to the traffic flow, but entails elevated fixed costs. The more efficient GPS systems were discarded in many countries out of privacy

reasons.⁷ iii) The managing costs, including the ability to prevent/punish frauds and to collect fines, especially from foreigner vehicles. In London, for instance, about 26% of the fines remain unpaid (Transport for London (2008)). Table 2⁸ proposes a summary of the costs and benefits of introducing city tolls in London, Milan and Stockholm.

The design of road pricing schemes is continuously evolving. One of the most recent projects, proposed in 2008 by the Dutch government, very much resembles the original Vickrey's proposal. The vehicle taxes currently in place will be replaced by a perkilometre tax, which depends on the vehicle level of emissions and on its use during peak hours. The plan, which, differently from standard city tolls, will be implemented at a national level, will be

⁷ In some cases (e.g., Milan) optical vehicle recognition cameras had already been installed for other reasons, thus reducing the implementation fixed costs.

⁸ Car and van users', taxis' and public transports' benefits include the value of saved time and, in the case of taxis and public transports, it also includes the change in profits generated by the introduction of the toll. The environmental benefits are an estimation of the value for society of the improved quality of the environment.

fully effective by 2018, and will be based on a GPS technology able to track each car's route. The funds will be invested in the public transportation system and in road maintenance.

4. Conclusions

Car drivers respond to incentives, and this guarantees that tolls help reducing congestion and pollution. The relevant question is whether road pricing schemes are the optimal solution, - that is, if their benefits outweigh their costs -, and whether or not alternative measures could be more effective.

The benefits side of a road pricing scheme is affected by the opportunity cost of time and the availability of alternative modes of transportation, whereas the cost side depends, among others, on the technology being used and on the ability to collect fine proceeds. Even when economically sound, road pricing schemes may face strong opposition by the local population. The political issue can be softened if tolls are tailored primarily to pollution, or if the burden is borne by individuals that do not vote for the city council.

An alternative measure, for a fixed road capacity, consists in excises on fuel. While excises can be effective in increasing public proceeds and in reducing pollution, they are ineffective in encouraging an efficient substitution from peak to off-peak travels. Other more radical measures, such as selective access restrictions, would lead to suboptimal space utilisation, therefore to a decline in social welfare.

City tolls are a particularly effective instrument for reducing congestion in land-scarce regions, where infrastructural enhancement is severely constrained. Bundling city tolls with investments in public transports and in the enhancement of the existing road network may reduce political frictions; furthermore, the combination of these measures may generate a greater benefit than the sum of the two stand-alone effects.

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Competition for Firms: Zero-Sum or Positive-Sum Game?

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I. Introduction

National and regional governments everywhere compete over footloose firms by devoting considerable resources to investment promotion. Such policies range from advertising campaigns and information dissemination all the way to subsidies and tax breaks.

To the extent that new firms generate positive local externalities, such policies can be efficient from the viewpoint of individual governments. What may be efficient for individual governments, however, could be inefficient for the aggregate (national or world) economy.

If governments compete over mobile productive resources which exist in a fixed overall amount, that competition adds nothing to aggregate output: they amount to a zero-sum or even negative-sum game. Conversely, those same policies will represent a positive-sum game if they increase aggregate output, either by stimulating economic activity that would otherwise not exist or by attracting productive resources from outside the territory considered. Thus, for example, it is critical from a national point of view whether interregional competition for mobile firms merely determines where among those regions an exogenously fixed number of firms will locate, or whether it will increase the overall number of firms created in the country by attracting them from abroad or by stimulating home-grown corporate ventures.

The empirical literature on firm location has so far largely overlooked this simple but essential distinction. The emphasis to date has been on quantifying the importance of manifold determinants of firm location—an important and challenging identification task in itself. In this, the conventional estimation approach has been to rely on McFadden's conditional logit model, which offers a formally rigorous way to derive an estimable empirical model from the objective function of a representative location-seeking firm. A

similarly popular empirical approach has been to use Poisson count estimation. It has recently been demonstrated that, with purely location-specific locational determinants or with determinants that are specific to locations and to groups of firms, the two estimators return identical parameter estimates. In that sense, the two estimators are equivalent.

In earlier work (Schmidheiny and Brülhart, 2011), we have shown that the identical coefficient estimates resulting from the two estimation strategies in fact have fundamentally different economic implications. The implicit premise of the conditional logit model is that the aggregate number of firms is fixed and that intergovernmental competition affects only the distribution of those firms across locations. In the Poisson model, however, the aggregate number of firms is a function of locational determinants, such that an additional firm attracted to one jurisdiction has no impact on the number of firms in the remaining jurisdictions and thus raises the aggregate number of firms by one. We show that intermediate cases between these two extremes can be represented by a nested logit model featuring a generic "outside option".

Here, we point out a new way of discriminating among the competing location models empirically. We show how panel data can allow us to identify the degree of "rivalness" of local policies designed to attract economic activities—through a parameter in a nested-logit model. We take this methodology to data for inward foreign direct investment in the United States, using state-level statistics from the Bureau of Economic Analysis for 1977 to 2006 and exploiting policy variation measured through the user cost of capital. Preliminary results suggests that state-level competition for FDI is largely zero-sum: the total amount of investment is not significantly affected by differences in tax rates across states, but tax incentives have a significant influence on the distribution of investment across states.

2. Literature Review

The application of the conditional logit model to the estimation of the determinants of firms' location choices was pioneered by Carlton (1983).² The Poisson count model was first used in this

The relevant data are obtained from Daniel Wilson (San Francisco Fed).
 Prominent subsequent applications include Bartik (1985), Head, Ries and Swenson (1995, 1999), Guimaraes, Figueiredo and Woodward (2000), Figueiredo, Guimaraes and Woodward (2002), Crozet, Mayer and Mucchielli (2004), Head and Mayer (2004), Devereux, Griffith and Simpson (2007), and Strauss-Kahn and Vives (2009).

context by Papke (1991).³ Guimaraes et al. (2003) then showed that the two approaches yield identical estimates for models that do not feature firm-specific regressors. In the words of Guimaraes et al. (2003), they demonstrated "that the coefficients of the conditional logit model can be equivalently estimated using a Poisson regression" (p. 203), and "that the coefficients of the Poisson model can be given an economic interpretation compatible with the framework of random utility (profit) maximization" (p. 204). While their equivalence result is correct and useful in terms of estimation, we point out in Schmidheiny and Brülhart (2011) that the two models are not equivalent because they imply different economic interpretations.

The Guimaraes et al. (2003) equivalence result has become a popular motivation for using Poisson estimation of equations that are derived from conditional logit models. The original area of application, firms' location choices, remains central: Arzaghi and Henderson (2008) have used the Poisson estimator in a study of the location of advertising agencies in Manhattan; Davis and Henderson (2008) used it to identify the determinants of headquarter location across US counties; and Duranton, Gobillon and Overman (2011) used it to estimate the locational determinants of firm entry in England. We have invoked the equivalence result in a study of the interplay of industry-level differences in agglomeration intensities and regional differences in tax rates as determinants of firm births in Switzerland (Brülhart, Jametti and Schmidheiny, 2007). Jofre-Monseny and Solé-Ollé (2007) provide a related analysis, based on data for Catalonia and also using the equivalence of the Poisson with the conditional logit. The equivalence of conditional logit and Poisson estimation is proving useful also in other areas of investigation. For instance, Coeurdacier, De Santis and Aviat (2009) have used it as the basis for Poisson estimation of a model of crossborder mergers and acquisitions.4

Empirical research on competition over mobile firms has mainly focused on the elasticity of firm location (or employment, output or value added) in a particular region with respect to that region's own policy - with corporate taxes being the policy instrument that has been afforded greatest attention. This literature generally confirms that, other things equal, mobile firms seek out low-tax locations.⁵

The aggregate implications of uncoordinated policies aimed at attracting mobile firms, however, have remained comparatively underresearched. To the best of our knowledge, all existing empirical studies of this issue are based on competition among US states, and they all conclude that such competition is essentially zero-sum.

³ Prominent subsequent applications include Becker and Henderson (2000), List (2001), Guimaraes, Figueiredo and Woodward (2004), and Holl (2004).

Head, Ries and Swenson (1999), based on a model of location choices by Japanese subsidiaries in the United States, concluded that the provision of foreign trade zones served to reallocate Japanese plants across states but did not alter the total number of Japanese investments in the US. Their simulations were based on a conditional logit model, which in fact implies the zero-sum prediction. Goolsbee and Maydew (2000) explored how revisions in profit apportionment rules by US state governments towards formulae that do not penalize employment creation have affected state-level and aggregate employment growth. They found that such reforms indeed boosted own-state employment, but that they reduced aggregate out-of-state employment by almost exactly the same amount. Chirinko and Wilson (2008) and Wilson (2009) have analyzed the own-state and neighbouring out-of-state effects of US state-level R&D tax credits, concluding that the two effects almost exactly offset each other.

3.A New Method for Identifying the Rivalness of Tax Bases

In Schmidheiny and Brülhart (2011), we show that the three standard location choice models – conditional logit, nested logit and Poisson – are observationally equivalent in terms of cross-section estimation yet imply starkly different predictions. Take a corporate tax cut in a particular region. Provided that this is perceived by firms as making that region more attractive, all three models imply that the region itself will see an increase in its number of firms. We show that the magnitude of the implied increase differs: it is largest if the world is properly represented by the Poisson model, smallest if the world conforms with the conditional logit, and somewhere inbetween if the world is nested logit. In a Poisson world, the tax cut will have no impact on firm counts in any other of regions within the data set. It will, however, pull firms away from other regions in the conditional logit and the nested logit cases. As the total number of firms is fixed in the conditional logit, the sum of the firms pulled away from the other regions is the same as the increase in the number of firms in the tax-cutting region itself. The nested logit again represents an intermediate case, with some of the attracted firms relocating from elsewhere within the data set, implying that regional corporate tax bases are "rival"; and some firms appearing from outside that set, implying a "non-rival" tax base. The same logic can be applied to residential choices of private households with respect, for instance, to changes in local property tax rates.

This analysis has two practical implications. First, empirical researchers should be aware of the interpretational ambiguity affecting estimated parameters in standard location choice models, particularly if some of the locations distinguished in the data are relatively large. It can therefore be useful to report both conditional logit and Poisson elasticity estimates as bounds on the effects implied by the estimated parameters.

⁴ Following Silva and Tenreyro (2006), the Poisson approach has also become popular for the estimation of gravity models of international trade (e.g. Magee, 2008) and investment (e.g. Head and Ries, 2007).

⁵ For a survey of this literature, see Hines (1999).

Table 1. Effect of Tax Reduction in Single U.S. State on Inward FDI (in terms of 2006 manufacturing employment)

	Large S	State	Small State	:	
	Califor	rnia	Rhode Island		
	Cond. Logit	Poisson	Cond. Logit	Poisson	
Own Elasticity	13.08%	14.65%	14.59%	14.65%	
Cross Elasticity	-1.56%	0%	-0.06%	0%	
Aggregate Elasticity	0%	1.56%	0%	0.06%	

Source: Results from Poisson regression of new employment from foreign direct investment (FDI) in 49 U.S. states on user cost of capital (tax) and state population. Effect of a one standard deviation reduction in user costs. Own elasticity is the percentage effect on FDI employment in state which reduced tax. Cross elasticity is the percentage effect on FDI employment in other states. Aggregate elasticity is the percentage effect on total FDI employment in all states. FDI employment data from Bureau of Economic Analysis (BEA), tax data from Chirinko and Wilson (2008).

Second, the linear connection of the conditional logit and Poisson models through the nested logit offers an elegant way of quantifying the rivalness of tax bases. In fact, the nested logit model implies a simple parameter that can take any value between zero and one, and which can be interpreted as a "rivalness" parameter. If the economy is purely zero-sum, such that one region's gain is some other region's equivalent loss, then the world corresponds to the conditional logit assumptions and the rivalness parameter is equal to one. Conversely, if the economy is purely positive-sum, such that one region's gain is no other region's loss, then the world corresponds to the Poisson assumptions and the rivalness parameter is zero. All intermediate cases are evidently possible as well.

While the rivalness parameter has evident policy relevance and offers a rigorous link to the theory, it cannot be estimated in crosssection data. After all, the Guimaraes et al. (2003) equivalence result implies that the models are observationally equivalent if estimated at one point in time. In the presence of panel data, however, where tax burdens and tax bases are recorded across regions for more than one point in time, the rivalness parameter can in principle be identified. The intuition is that in a pure zero-sum world (i.e. where the rivalness parameter takes its maximum value of one), a change in tax rates in some regions will leave the aggregate size of the tax base across all relevant regions unchanged. This aggregate tax base, however, will grow if the world is positive-sum and some regions cut their tax rates. Hence, the degree of rivalness across regions can be inferred from changes in the aggregate tax base relative to a weighted average of the changes in tax burdens across regions. We derive how the correct weights for this average can be calculated from the nested logit model.

4. Elasticity Bounds

We show in Schmidheiny and Brülhart (2011) that estimation of the conditional logit, nested logit and Poisson models will yield identical parameter estimates, and that it is impossible to discriminate formally between these three model based on cross-section data. And yet, the implied elasticities differ substantially. In previous research, reported elasticities were based either on the conditional logit model or the Poisson model, without justification of the particular choice made or, mistakenly in this respect, by referring to the equivalence of the two models as established by GFW.

What can researchers do if they are not willing to make this choice by assumption but rely on cross-sectional data? We propose in this situation that one calculate the elasticities of both the conditional logit and the Poisson model and report these predictions as bounds for the true effects.

Such bounds are illustrated above. We take the example of inward foreign direct investment (FDI) across 49 U.S. states (excluding Alaska). From the Bureau of Economic Analysis, we have data on the employment level of foreign-owned plants for eleven industries over the period 1977-2006. In a first step, we regress inward FDI for 2006 on state population and on the "user cost of capital", a carefully constructed measure of the effective corporate tax burden by Chirinko and Wilson (2008). By way of an illustration, we compute the implied coefficients (which could equivalently be obtained via Poisson or conditional logit estimation) for California, a large state, and for Rhode Island, a small state.

The first row of Table 1 shows the predicted percentage change in inward FDI attracted by a given state if that state's corporate tax burden were lowered by one standard deviation, everything else unchanged. As expected, these elasticities are positive: lower taxes attract additional foreign investment in the manufacturing industry. We also see that the Poisson elasticities are somewhat larger than their conditional logit equivalents: in a positive-sum world, the tax base is more elastic than in a zero-sum world. This difference is very small for Rhode Island, but for a large state such as California, the distinction is not trivial, as the implied Poisson elasticity is some 12 percent larger than the implied conditional logit elasticity.

In the second row of Table I, we show cross elasticities: the effect on FDI of other states if the reference state lowers its corporate

Table 2. Estimated Rivalness	of US Inward FDI, by Industry

	Rivalness I	Parameter	Tests (ρ-valu	ıe)
	Estimated $ ho$	stand. error	H0: ρ = 1	H0: $\rho = 0$
Finance & Insurance	1.20	0.17	0.250	0.000
Manufacturing	0.59	0.35	0.259	0.106
Other Industries	1.02	0.53	0.970	0.070
Real Estate	0.45	0.36	0.136	0.219
Retail Trade	0.84	0.68	0.817	0.227
Wholesale Trade	0.54	0.43	0.302	0.223

Source: Results from a two-step estimation procedure using panel data from 1977 to 2006. The rivalness parameter ρ measures whether FDI gains from a tax reduction in one state equal the total FDI losses of the other states ($\rho = 1$), reduce FDI in other states to a limited extent ($0 < \rho < 1$), or do not affect the amount of FDI flowing to other states at all ($\rho = 0$). FDI employment data from Bureau of Economic Analysis (BEA), tax data from Chirinko and Wilson (2008).

tax burden by one standard deviation. The cross elasticity is zero in the Poisson model. This of course makes perfect sense: in a pure positive-sum economy, the fact that California attracts more FDI thanks to a reduction in its corporate tax rates leaves the amount of FDI flowing to other states unaffected. In the conditional logit model, however, this effect is negative: the more FDI California manages to attract, the less is left over for the other states.

Another way to illustrate the distinction between zero-sum and positive-sum scenarios implied by the two benchmark models is to look at the predicted elasticity of total US inward FDI relative to a tax cut in one particular state. We do this in the third row of Table 1. In the zero-sum conditional-logit world, the aggregate elasticity is zero: the size of the total FDI cake is given. In the Poisson world, however, the total amount of US inward FDI increases if one state raises its attractiveness to foreign investors. Of course, this effect is stronger for large states than for small states. In the Poisson interpretation, our results imply that if California cuts its corporate tax burden by one standard deviation, this will raise US inward FDI by 1.56 percent. If a small state like Rhode Island were do pursue such a policy, this would have much less of an impact on the national total, raising it by a mere 0.06 percent.

As these illustrations show, the distinction between the zero-sum and positive-sum models may not be very important for small territorial units, but can become non-trivial for larger regions. This raises the question as to which is the more realistic of the two models. We investigate this question in the next section.

5. Rivalness

In Table 2, we show estimates of the "rivalness" parameter ρ , computed through our two-step approach that uses the panel structure of the US FDI data over the 1977-2006 time period. In the pure positive-sum world implied by a Poisson model, the tax

base is non-rival and ρ would thus be equal to zero. Conversely, in a zero-sum world as assumed by the conditional logit, ρ would be equal to one. For this reason, we report tests of the hypotheses $\rho=0$ and $\rho=1$ in the last two columns of Table 2.

The table shows that we can reject the hypothesis $\rho=1$ for none of the six sample sectors. This means that our data do not reject the zero-sum assumption. In two of the six sectors, however, we can reject the hypothesis $\rho=0$, meaning that we can conclude that for those sectors inward FDI is a rival resource for US states — one state's gain is, to some extent, the other states' loss. Hence, our results are somewhat more supportive of the zero-sum model (à la conditional logit) than of the pure positive-sum model (à la Poisson).

When looking at differences across sectors, we find the estimated rivalness parameters to be relatively high in "finance and insurance" and in "other industries". Taken at face value, this implies that foreign investors in these sectors pursue a two stage strategy, first, they decide on how much to invest in the United States, irrespective of state-level tax burdens, and then they pick a state as a function of taxes and of other state characteristics. In sectors with lower rivalness parameters, such as real estate and wholesale trade, investors would seem to take state-level tax policies into account already at the first stage, i.e. when they decide whether to invest in the United States or in some other country.

Considerable care is evidently warranted in the interpretation of these results. The standard errors are relatively large. In two cases, the estimated rivalness parameters even lie outside the admissible zero-to-one range (although not statistically significantly so). For more conclusive evidence, one should control for additional state-level time-varying factors or use instrumental variables. Nonetheless, our results are rather more favourable to the zero-sum hypothesis than to the pure positive-sum hypothesis, which, for a large country such as the United States, appears quite plausible.

6. Concluding Discussion

Economists and policy makers devote considerable effort to estimating the impact of regional initiatives aimed at attracting firms or lucrative tax payers. For example, there is now solid empirical evidence for the entirely unsurprising result that low corporate taxes attract firms and employment. A closely related and equally important question is much less frequently asked: where do firms and jobs attracted by fiscal inducements come from? If one region's gain is just another region's loss, then competition among regions is a zero-sum game over a "cake" of fixed size. Conversely, if one region's gain does not come at the expense of any other region, then competition is positive-sum: the size of the total "cake" grows if one region enhances its attractiveness.

We have pointed out that the two standard models for estimating the determinants of firms' location choices although often used interchangeably are in fact fundamentally different. The conditional logit model implies a pure zero-sum world, while the Poisson model implies a pure positive-sum world. This distinction can be important for interpreting the size of estimated policy effects, particularly when considering policy actions by large regions. More importantly, the distinction can be used as a tool to estimate the degree to which the object over which regions compete - be it firms, portfolio capital, wealthy individuals, or whatever - is "rival". In other words, we can estimate how close a certain set of regions is to a zero-sum economy or, equivalently, to a positive-sum economy.

Applying our new estimation tool to data on US states, we conclude that in terms of their effect on inward FDI, the effect of tax differentials within the United States conforms more closely with the zero-sum view than with the positive-sum view. This implies that state-level corporate taxes affect only the distribution of FDI across US states but not the total amount of FDI into the country as a whole. Inward FDI is akin to a rival good.

Our empirical analysis is still somewhat rudimentary, as for a conclusive assessment greater care would need to be taken in controlling for non-tax locational determinants. This exercise should therefore first and foremost highlight the relevance of the question on the aggregate effects of decentralised economic policy making in federal systems.

We should finally note that even if we could establish conclusively that certain types of competitive regional policies are zero-sum or positive-sum, we thereby still would not have the answer to the questions whether such competitive policy making is desirable or not. Tax competition can potentially be welfare improving even if it is zero-sum, that is even if the size of the total tax base is given. This would in particular be the case if regional governments were "Leviathans" that would overtax

their citizens if they were not held in check by the pressures of tax competition (Brennan and Buchanan, 1980). Conversely, positive-sum competition need not be an unequivocal blessing. If low regional taxes stimulate more local entrepreneurship or hiring, then that is most likely welfare enhancing. If, however, those attractive policies were to pull resources not from other regions of the same country but from other countries, then what would appear as positive-sum competition within a given country could in fact amount to zero-sum competition at the international level.

To summarise, it is very important (as well as scientifically challenging) to ask not only "how much economic activity will my regional policy manage to attract?", but also "where will that additional activity come from?" The desirability of political decentralisation crucially depends on the answer to that second question.

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Tax Limitations and Local Government Behaviour

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I. Introduction

The overall size as well as the tax revenue bundle of the local public sector in multi-tiered structures of government are the outcomes of the decentralized decision-making process subject to the fiscal rules set by central (state) governments. As documented

by Anderson (2006) and Wolman et al. (2008) for the US, and by Journard and Kongsrud (2003) and Sutherland et al. (2005) for the OECD countries, top-down tax and expenditure limitations (TELs) are frequently so tight and pervasive as to jeopardize the very principle of local fiscal autonomy.

This paper aims at investigating how state-wide revenue raising limitation rules shape local governments' budget constraints. In particular, it focuses on the kinks that are typically generated by tax floors and caps, and evaluates their effects on the determination of the local tax mix and on the response of local public expenditures to grants.

As far as the latter issue is concerned, a vast literature – most recently reviewed by Inman (2009) – has investigated and sought to explain the anomalously high response of local spending to grants relative to the response to private income. That empirical anomaly has been dubbed the "flypaper effect," in the sense that money from central government sticks where it hits.¹

Two broad kinds of explanations of the flypaper effect have been offered in the literature (Hines and Thaler, 1995). The first has to do with a variety of specification and estimation errors that applied researchers would have kept making for decades. Those errors range from mistakenly treating matching grants as if they were lumpsum to the omission of important variables - such as unobserved population characteristics or spatial lags of other governments' policies - that are simultaneously correlated with grants and local public expenditures. The second explanation relies on the argument that the political representation process is substantially richer than the one postulated by the standard neoclassical model: asymmetric

information, loss aversion, fiscal illusion, separate mental accounting, special interest groups, and citizens' inability to write complete contracts with their elected officials would be responsible for the lack of fungibility between public and private uses of money, and would cause the observed large flypaper effect.

In this paper, we put forward and test the idea that the so-called flypaper effect might be the result of the limitations imposed by upper levels of governments on local authorities. In particular, we start from a description of the process by which the local tax mix — that is, the choice of the weight to be attributed to different sources of own revenue — is determined, and ask ourselves what consequences are to be expected when the national government imposes local tax rate limitations.

The above features, i.e., a multiplicity of local sources of own revenue and the presence of tax rate limitations, are observed in virtually all western democracies, so that the decentralized government finance archetype discussed here can be applied to a variety of countries, be they unitary or federal.

The analysis shows that excess sensitivity of local public spending to grants arises naturally in the endogenously generated constrained tax mix. In particular, we show that the effect of private community income on local public spending should be expected to be tiny or nil in the presence of binding limitations on all local tax revenue sources. On the other hand, grants should be predicted to have a large - actually, a one-for-one - impact on local expenditures. Interestingly, a binding cap on just one of the available own revenue sources is enough to generate some form of flypaper effect, in the sense of an excess sensitivity of local spending to grants, and the above result holds when either upper or lower tax limitations are in place.

Finally, since excess sensitivity of local public spending should be predicted to arise and generally tends to manifest itself both when grants increase and when they decrease, the flypaper effect label seems an inappropriate or even misleading one. In fact, excess sensitivity of local public expenditures to grants cannot in general be interpreted as a sinister symptom of overspending.

While the existing literature seems to have almost universally overlooked the potential impact of tax and expenditure limitation systems on the sensitivity of local public spending to exogenous variations in grants, two recent papers have brought the fiscal limitations issue into the empirical investigation of the flypaper

According to Inman (2009), over 3,500 research papers exist documenting and seeking to explain the flypaper effect. Payne (2009) offers an insightful wide-ranging review of the more recent research into the mirror phenomenon of crowd-out.

effect. Lutz (2010) conjectures that previous evidence of a flypaper effect might have arisen from state constraints preventing local governments from selecting their preferred bundle of public goods, and provides evidence of equivalence between grants and income from a school finance reform in New Hampshire "one of only five states with no state-imposed limitations on the taxing or spending power of local governments" (Lutz, 2010: p. 317). Brooks and Phillips (2010) represent the first formal statement and empirical test of the hypothesis that restrictive fiscal institutions might be responsible for the flypaper effect. They use data on the US Community Development Block Grant (CDBG) program and argue that state TELs may systematically force city governments to underprovide local public goods and therefore increase the stimulative effect of federal grants on city spending. However, since they do not observe either the municipal tax bundle or whether a revenue raising constraint is binding in any given city, they have to rely on a state-level index of fiscal constraints and ignore altogether both the municipal choice as to own revenue source diversification and the issue of endogenous selection of a city government into the fiscally constrained status.

In order to show how the tax limitation mechanism works and how it affects the response of local spending to grants, this paper reports the results of an empirical application to Italian provincial governments' data. An attractive feature of Italian Provinces is that their own tax revenue sources (a tax on vehicle registrations, a tax on electricity consumption for business uses, and a waste management surcharge) are subject to strict and frequently binding upper as well as lower tax rate limitations. In particular, the empirical analysis exploits the clustering of provincial authorities at the corners produced by those tax limitation rules, and reports the results of the estimation of the effect of grants on local expenditures for two groups of authorities - those severely affected by tax limits and those that are only mildly affected. The results show the former authorities exhibit a sensitivity of spending to state grants that is significantly higher than the latter.

The paper is organized as follows. Section 2 outlines the basic intuition that the flypaper effect can be generated by central constraints on local tax choices. Section 3 extends the argument to the case of multiple tax instruments (the local tax mix). Sections 4 illustrates the Italian institutional system of local government, describes the data for the empirical application, and reports and discusses the main empirical results. Finally, section 5 concludes by discussing the applicability of the framework outlined in this paper to other institutional settings.

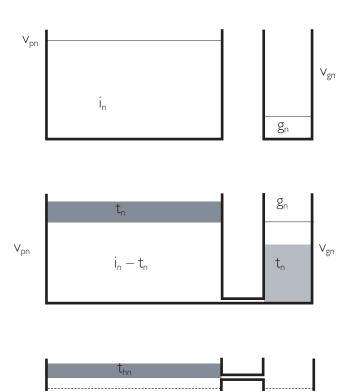
2. Communicating Vessels

Figure I gives a stylized graphical representation of the allocation of resources between private consumption and consumption of local public services in a given local jurisdiction n, under different tax decentralization arrangements. Say that the left-hand side vessel (V_{nn}) represents consumption of private goods

out of community n private income (i_n) , and the right-hand side vessel (v_{gn}) represents consumption of local public services. The structure depicted in the upper part of the figure amounts to a perfect tax centralization arrangement, where expenditures on local public services are entirely funded by central government grants g_n . In the absence of local tax instruments, the local government cannot affect the level of local public services (that are entirely determined by the size of central grants) and nothing ensures that the allocation of resources to private consumption and local public services reflects the preferences of the local community.

In the central picture, the two vessels communicate via local tax revenues. Now local government can decide to transfer resources from the private to the local public sector by setting a positive tax rate.

Figure I. Communicating vessels



Source: Revelli (2010).

 $i_n - t_{hn}$

 Δg_r

 t_{hn}

In order for local public services to be provided at the level that is optimal for the local community, and if we assume that one euro of private income can be transformed into one euro of local public spending through local tax revenues, the marginal utility from private consumption should be equal to the marginal utility of local public services consumption. Just like communicating vessels, where the force of gravity requires hydrostatic pressure to be balanced out in the two vessels regardless of their relative sizes, the welfare optimization forces make resources (tax receipts $t_{\rm p}$) flow from vessel $v_{\rm pp}$ to vessel $v_{\rm sp}$.

An important consequence of the just described equilibrium is that whether additional resources are poured into v_{pn} (by an exogenous increase in community's private income) or into v_{gn} (by an increase in state grants), we should expect the same allocation of private and public consumption to result by the law of communicating vessels.

In the lower picture, it is assumed instead that the local jurisdiction, while still receiving grants from central government (g_n) and being able to set a local tax, is subject to a tax rate cap, meaning that it cannot raise revenues above the level represented by the rectangle $t_{\rm hn}.$ The tax cap is binding if local government n is forced to raise less revenues than it would find optimal – the case described in the figure, where the ideal level of local taxes is the larger rectangle $t_{\rm n}.$

Due to the cap, the condition for optimal public good provision will not be satisfied: more resources ought to flow from the left to the right vessel in order to equate the pressure in the two vessels.

In this case, an additional unit of private income cannot, because of the tax limitation, be transformed into local public services even if local residents were willing to do so. On the other hand, if additional grants are poured into (pumped out of) the local government budget, local public spending will rise (fall) accordingly. Local public expenditures will therefore be highly sensitive to grants, actually with a one-for-one response, giving rise to the so-called flypaper effect.

3. The Presence of Multiple Local Taxes

One might wonder if the metaphorical reasoning sketched above would still hold in a setting where local governments can rely on a number of different sources of own tax revenue. In order to keep the argument as simple and tractable as possible, consider the case of local governments being able to rely on two distinct tax instruments, say a tax on residential property and a tax on profits made by firms operating in the jurisdiction. The former is applied on domestic property value at the rate r, and the latter is applied on profits at the rate p, with both rates being decided by the local government subject to the limits imposed by state government. Assume that the state limits are such that the property tax rate must lie between r_0 (with $r_0 > 0$) and r_1 ($r_0 \le r \le r_1$), and the profit tax must lie between r_0 (with $r_0 > 0$) and r_1 ($r_0 \le r \le r_1$). Local public spending is funded

by property tax revenues, profit tax revenues, and exogenous grants from central government.

Consider a local community that is strongly against taxes: they will set both rates at the minimum levels: $r=r_0>0$ and $p=p_0>0$. The community is at a corner solution, in the sense that it would like to set both tax rates to zero (r=p=0) and set a level of spending equal to the grants received by state government. However, that tax mix is not admissible due to state constraints.

What happens to that community's choices if grants change? If grants increase, the community would like to further reduce taxes. However, since further tax cuts are not possible, the only option is to spend the extra grant. And if grants happen to decrease, the optimal response is to decrease spending accordingly, since raising taxes is definitely not desirable.

On the other hand, consider a community wanting a big government and high spending, so that they set tax rates at maximum levels $r=r_{\parallel}$ and $p=p_{\parallel}$, while their optimal choices correspond to even higher tax rates. Of course, higher grants would in this case be entirely spent on more public services, thereby allowing the community to get closer to their desired level of spending. On the other hand, lower grants are necessarily accompanied by lower spending, since the community cannot increase its taxes.

Finally, consider a community that strongly favors business taxation because it perceives it as an effective redistribution instrument, and vigorously opposes taxation of residents' properties. The constrained tax mix would require in this case to set the maximum tax rate on business profits (p=p_1) and the minimum tax rate on residential property (r=r_0>0). Interestingly, the spending response to grants of such community will not be different than the ones observed in the previous examples. An extra euro received in state grants would ideally be employed to further reduce homeowners' tax burden, but that is not feasible. On the other hand, a reduction in business taxation is viable, but not desirable. As a result, spending will increase by one euro. Similarly, any reduction in grant would further push towards an increase in business taxation (a non viable option): being the resident property tax rate higher than the optimal one, the grant cut will be accompanied by a corresponding spending cut.

The above example allows us to formulate the following general predictions on the effect of tax limitations on the sensitivity of local public spending to grants. In the general case in which M>2 own tax revenue sources are available for local governments, and each of them is subject to an upper limit and to a lower limit, the following results are obtained:

 In a fully constrained tax mix, i.e., when all tax limits are binding, local public spending exhibits little or no sensitivity to private income changes; on the other hand, local public expenditures respond to changes in grants on a one-for-one basis.

- Moreover, upper-constrained authorities, i.e., authorities that set all their tax rates at their upper limits, lower-constrained authorities, i.e., authorities that set all their tax rates at their lower limits, and lower and upper-constrained authorities, i.e., authorities that set some of their tax rates at their upper limits and some at their lower limits, exhibit the same sensitivity of public spending to grants.
- Finally, in a partially constrained tax mix where some tax limits are binding and some are not: a) the sensitivity of local public spending to grants is smaller than it is in a fully constrained tax mix; b) the sensitivity of local public spending to grants is larger than it is in the absence of binding tax limitations.

4. An Application: Local Tax Limitations in Italian Provinces

The impact of tax limitations on the sensitivity of local public spending to grants is tested on data for the Italian Provinces through the years 2000 to 2007.

The Italian system of local government is organized as a three-tier structure, with the 103 Provinces constituting the intermediate level of government between the regional (20 Regions) and the municipal (over 8,000 municipalities) ones. Provinces have responsibility for intermunicipal road construction and maintenance, local transportation systems, secondary education schools, waste management and environmental protection. Provincial expenditures rose considerably in recent years, mostly due to the devolution of functions from the national and regional governments. In fact, average per capita spending increased by about 25% in real terms between 2000 and 2007.

Over ¾ of total current provincial spending is funded by grants from upper levels of government (State and Regions), with the proportion of grant-funded expenditures remaining roughly constant through the 2000-2007 period. State grants are for the most part general and formula-based. They rely on the definition of a standardized spending level for each Province built on exogenous needs indicators falling into three broad areas (age structure of the resident population; geomorphological complexion; socioeconomic deprivation), as well as of a fiscal capacity index capturing the ability of each Province to raise own and shared revenues. In particular, Provinces are divided into four demographic bands, and average service cost indices for a number of mandated provincial functions and average tax bases are periodically computed (usually every three years) for each band. Expenditures on non-mandated provincial services do not enter the grant distribution scheme and must be entirely funded by own revenues. On the other hand, Regional grants typically finance specific functions that were devolved to Provinces during the decentralization process of the late 1990s.

As a result of the above institutional arrangement, State and regional grants can to a large extent be considered exogenous with respect to own funding decisions by provincial governments. In particular, given the infrequent central assessment of spending needs and fiscal capacity, changes in provincial socioeconomic conditions are not promptly reflected into State grant adjustments. Moreover, the fact that State grants are based on a Province's needs and fiscal capacity indices relative to its demographic band mean should alleviate the potential problem of grant endogeneity arising from shocks moving grants and local expenditures in the same direction.

The rest of current spending is funded by three own tax revenue sources: the vehicle registration tax, the electricity consumption tax, and the waste management tax. The vehicle registration tax represents over 50% of total own tax revenues. All brand new vehicles - as well as used vehicles in case of change of ownership are liable to the payment of the tax the first time they are registered in the provincial archive under a given owner's name. The total tax due is made of a lump-sum amount plus a variable component that is related to the size, power and destination of the vehicle. As shown in table 1, central government establishes a lower and an upper bound on the vehicle tax parameters that Provinces can set, with the upper bound corresponding to a 20% higher tax burden (raised to 30% in 2007) than the one corresponding to the lower bound. Consequently, the decision of each Province basically consists in determining autonomously the surcharge rate.

The electricity consumption tax is applied by Provinces on business uses of electricity. As shown in table 1, Provinces set a tax rate between a minimum of 9.3 and a maximum of 11.4 Euro cents per kW. Electricity tax revenues correspond to above 1/3 of total own tax revenues.

Finally, the waste management tax is a surcharge applied by Provinces on the waste collection bill charged by the municipalities located in the province on all households and businesses. Table I shows that the surcharge rate must lie between 1% and 5% of the municipal levy. Revenues from the waste management tax amount to about 10% of total provincial own tax revenues.

Table I. Lower and upper tax limitation rules								
		2000-6	2007					
Vehicle registration tax	lower	0	0					
(% surcharge on national rate)	upper	20	30					
Electricity consumption tax	lower	9.3	9.3					
(Euro cents per kW)	upper	11.4	11.4					
Waste management tax	lower	I	I					
(% surcharge on municipal levy)	upper	5	5					

Source: Revelli (2010).

	ber of authorities				2002	2004	2005	2007	2007
		2000	2001	2002	2003	2004	2005	2006	2007
Vehicle	lower	25	15	9	7	7	5	4	3
	upper	55	65	71	72	73	77	79	43
Electricity	lower	66	54	43	37	34	27	27 18	15
	upper	16	29	39	45	47	52	59	64
Waste	lower	3	2	2	3	3	2	3	3
	upper	66	64	66	65	65	66	66	68

Source: Revelli (2010).

Table 2 reports the number of authorities setting tax rates at the lower and upper limits respectively. The data refer to the 90 Provinces (out of 103) for which all information from 2000 to 2007 is available.

More than half of the observations in the dataset (416 out of 720) correspond to fully bound instances, with all available tax sources being set at left or right corners, while in only 9 observations none of the constraints is binding. For about 40% of the observations either one or two tax limitations are binding, and in over 1/3 of the observed tax mix outcomes a lower and an upper limit are simultaneously binding.

We use the Italian Provinces' data to estimate the sensitivity of local public expenditures to changes in exogenous revenue sources, while allowing for heterogeneous responses depending on the degree to which Provinces face financing constraints. In particular, we want to verify if Provinces where state tax constraints are binding actually exhibit a higher sensitivity of spending to grants.

In methodological terms, an empirical investigation of the excess sensitivity of local government spending to grants bears a striking similarity with two well developed lines of empirical research. The first concerns the inquiry into the role of financing and liquidity constraints in explaining the elasticity of investment to cash-flow in Q models of the firm (Bond and Meghir, 1994; Fazzari et al., 1988; Hu and Schiantarelli, 1998; Kaplan and Zingales, 1997; Cummins et al., 2006). The second relates to the borrowing constraint interpretation of the excess sensitivity of private consumption to disposable income in permanent income/life cycle frameworks (Jappelli et al., 1998).

In the empirical investment and consumption literatures, the conventional approach consists in splitting the sample of data according to an *a priori* index of financing/liquidity constraint (typically related to the dividend payout or liquid assets to capital stock ratio for firms, and to the asset-income ratio for consumers),

and compare the "switching regression" estimates of the sensitivity of investment (consumption) to cash flow (income) for two distinct subsamples: the constrained and the unconstrained one.

Similarly, in order to test on panel data (i.e., when a cross-section of authorities is repeatedly observed over time) whether the local public spending response to changes in exogenous sources of revenue is affected by the tax limitation regime a local government is subject to, a time-invariant selection criterion can be employed and authorities assigned to either of two subsamples based on whether they are consistently constrained (or not constrained) during the whole period of observation.

We therefore first split the sample based on a time-invariant indicator according to which a Province is "fully constrained" if tax limits are binding on all own tax revenue sources for the entire period of observation, and is "moderately constrained" if the authority never has all constraints binding.

Application of the above splitting criterion leaves us with 264 observations, with 24 severely constrained authorities, and 20 moderately constrained authorities. Of the 24 structurally capped authorities, 17 were at the upper bounds on all three own tax rates for the entire period, 5 were hitting two upper bounds and one lower bound, one Province was at one upper and two lower bounds, and one Province was consistently at the three lower bounds. On the other hand, the authorities in the moderately constrained regime have one to two constraints binding.

We then estimate the effect of grants on expenditures (real current spending per capita) in the switching regression model as described above. Grants are measured as all current financial transfers from upper levels of government (State and Regions), including the fixed shares of national tax revenues devolved to Provinces (national personal income tax and national motor-vehicle insurance tax), and are expressed in per capita terms. The estimation results of the effect of grants on expenditures are reported in the first two columns of table 3.

	Time-invariant splitting criterion Time-varying splitting criterion							
	Fully constrained	Moderately constrained	Fully constrained	Moderately constrained				
grants	0.975 (0.048)	0.722 (0.050)	0.986 (0.023)	0.792 (0.056)				
observations	144	120	230	114				

Source: Revelli (2010).

Interestingly, all authorities exhibit what would be termed a flypaper effect according to conventional criteria in the literature. The results in table 3 show that the grant effect is large and highly significant. However, fully constrained authorities' expenditures react to grants to a significantly larger extent, actually on a one-for-one basis. The estimate of the effect of grants on spending is around 0.7 for the moderately constrained subsample, while the coefficient estimate virtually equals I for severely bound Provinces.²

In the light of those results, one might wonder whether the grant coefficient estimate is inflated by spurious correlation between local expenditure and grants due to omitted variables driving both. However, a grant coefficient estimate of around I in the fully constrained sample is hardly surprising, given that all local tax rates are frozen at their (upper or lower) limits. As for the moderately constrained sample, an endogeneity bias would most likely play against the point we are making here, in the sense of driving up the estimate of the grant coefficient and narrowing the gap between the two subsamples.

A disadvantage of the separation rule adopted above, though, consists in the fact that it implies freezing the sample and renouncing to using information on local governments that switch from one regime to the other over the period of observation (Hu and Schiantarelli, 1998). An alternative empirical approach - based, among the others, on Bond and Meghir (1994), Jappelli et al. (1998) and Cummins et al. (2006) - consists in allowing for a time-varying constraint status. This implies focusing on the authorities that are observed to be switching between regimes over time. After excluding Provinces that are consistently constrained or unconstrained over the entire time period, we end up with a balanced panel of 43 switching Provinces over the eight years 2000-2007. Those Provinces are fully constrained in some years, while they are only partly constrained in other years.

The third and fourth columns in table 3 report the estimation results for this sample. It is remarkable that local authorities' expenditures exhibit the expected excess sensitivity when fully constrained (grant coefficient = 1), while the sensitivity of spending to grants

is significantly lower (less than 0.8) when the same authorities are only moderately constrained, suggesting that the extent and intensity of tax limitations plays a role in explaining the response of local spending to grants.

5. Concluding Remarks

By explicitly recognizing and incorporating the left and right corners that are typically produced by state-wide limitations on local tax rates, this paper has discussed how the local tax mix is determined in the presence of tax limits, and has shown how excess sensitivity of local public spending to grants arises in the endogenously generated constrained tax mix.

In particular, the paper has shown that the effect of private income on public spending should be expected to be tiny or nil in the presence of binding limitations on all local tax revenue sources, while grants should be predicted to have a large - actually, a one-for-one - impact on local expenditures. Interestingly, the above result holds when either upper or lower tax limitations are in place, and a binding limitation on just one of the available own revenue sources is enough to generate some form of flypaper effect, in the sense of an excess sensitivity of local spending to grants. In fact, since excess sensitivity of local public spending should be predicted to arise and generally tends to manifest itself both when grants increase and when they decrease, the flypaper effect label seems an inappropriate or even misleading one.

By using data on the Italian Provinces over the years 2000s, the paper has exploited the clustering of provincial authorities at the corners generated by central government lower and upper tax limitation rules to estimate the sensitivity of local public expenditures to grants. The empirical evidence suggests that the response of local spending to grants is significantly higher for fully constrained authorities than for authorities that can manoeuvre at least one tax instrument.

While the above results point to the importance of tax limitations in empirical investigations of the local tax mix determination process and of the responsiveness of local spending to central government

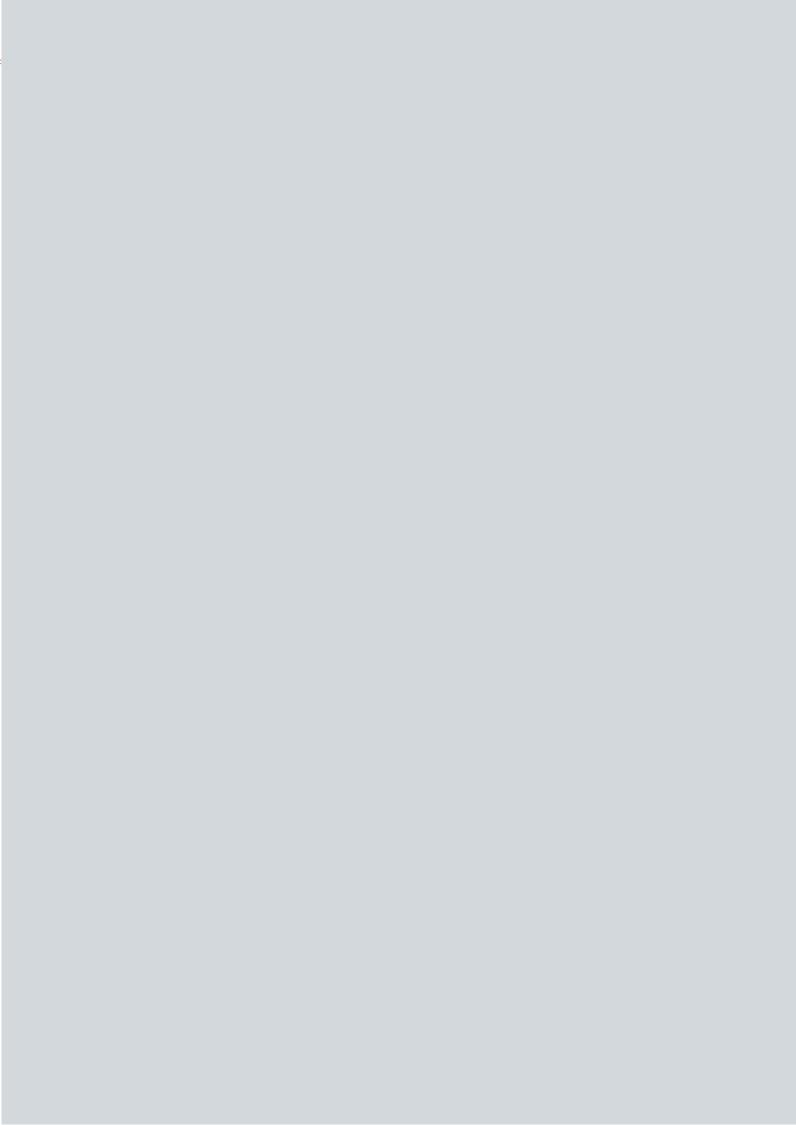
² The results are robust to the introduction of various control variables.

grant policy, they also suggest that the role of alternative explanations of local public spending excess sensitivity cannot be ignored. Ideally, further empirical work should rely on data from local government finance settings where there exist a control group that is entirely unconstrained and a treatment group that is subject to binding tax limitations, making it possible to neatly test the importance of tax limitations in explaining the sensitivity of spending to grants. In addition, a potentially fruitful further line of research would be represented by a thorough empirical analysis of the effects of various kinds of limitations and mandates on local public expenditures — an important and frequently employed policy tool that can lead to an observed pattern of spending that is hard to reconcile with standard theoretical economic models.

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Migration and Social Insurance

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I. Introduction

European Commission set the year 2006 as the European year of worker's mobility. Eventhough currently workers' mobility within Europe is not substantially, it is expected to gain importance in the years to come. Indeed, politicians are pushing it through as they think that "job mobility is one of the crucial factors in Europe's economic success" (Spidla, 2006). Moreover, younger people are the most mobile with 5% of the age groups 25-34 having moved at least once across EU countries. Finally, the 2004 EU enlargement allowed migration of more mobile citizens with 5% of the 2004 new member states individuals expecting to move to another EU country in the next five years (Vandenbrande et al., 2006).

Mobility across different countries affects the coexistance of different social insurance systems. As a matter of fact, one finds in Europe countries whose welfare system is more in the tradition of Beveridge (based on universal flat benefits) and others whose system is mainly Bismarkian (based on benefits related to past contributions). Since social contributions are related to individual incomes, Beveridgen welfare systems have a higher implicit income redistribution because in this type of systems high income individuals pay higher premiums but receive the same benefit as the low income individuals do.

Mobility, consequently, raises concerns about the sustainability of the most generous and most redistributive Beveridgean systems. The reason is that it can be expected that the most generous and redistributive systems, when facing mobility, will attract the lowest incomes and the highest risks and will repeal the highest incomes and the lowest risks (Sinn, 1990). Therefore, redistribution and the size of benefits could be substantially decreased.

We address the sustainability of more redistributive insurance systems in a context of labor mobility. The novelty of our approach is two fold. First, we introduce migration costs in the analysis in view of getting rid of bang bang solutions where all individuals of a same income class concentrate in a single country. Instead, we get more realistic solutions in which low and high income individuals cohabit in the two countries. While this assumption is commonly used in a tax competition setting (Hindriks, 1999 and Leite-Monteiro, 1997) to our knowledge it hasn't yet been used in a social competition setting. Second, we consider a strategic interaction between governments in setting the type, i.e., Beveridge versus Bismark, and the level of social insurance benefits, i.e., the generosity of the system. We contrast the equilibrium arising from if both governments have concerns for redistribution and insurance, if both governments have concerns for insurance only, and if one government has concerns for redistribution and insurance while the other only cares for insurance.

The issue of tax competition in a context of factors mobility has already been widely studied (see Cremer and Pestieau, 2004 for a survey). However much needs to be assessed in what concerns social insurance competition. There are mainly two papers closely related to our contribution. Cremer and Pestieau (1998) study the strategic interaction between benevolent social planners in a two-country setting. They suppose a three-stage decision process where in the first stage, the constitutional stage, social planners decide the degree of redistribution of social insurance (the Bismarkian factor). At the second stage native individuals decide through majority voting on the level of payroll taxes, i.e., the level of benefits. At the third stage individuals decide upon migration. They get the result that if rich are mobile they end up all living in the same country. This implies that one of the countries would insure but not redistribute. Another result is that at stage one the equilibrium is symmetric, i.e., the planners choose the same level of redistribution. Consequently, all countries would end up with the same Bismarkian factor in contrast to what we observe in reality. Still, that is not what is observed in reality. For this reason in a following paper, Cremer and Pestieau (2003) have analyzed social insurance competition between Bismarkian and Beveridgean systems. Decisions are taken in two stages: the benevolent social planner decides upon the level of benefits anticipating the migration flows of the second stage. They get the result that all poor may end up migrating towards the Bismarkian country. In both Cremer and Pestieau (1998, 2003) papers bangbang solutions with all poor/rich migrating towards the same country is due to the absence of migration costs.

Other authors have as well contributed to the literature on social insurance in a context of labour mobility. As Cremer and Pestieau (2003), Lejour and Verbon (1994) also get the result that the impact of economic integration on social insurance depends very much on the type of mobility assumed. However, they have assumed high-risk and low-risk individuals rather then high income and low income individuals. Bureau and Richard (1997) get an analogous result.¹

Our paper is organized as follows. In Section 2 we introduce the model and in Section 3 we characterize the governments' choices under autarky; it constitutes thus our benchmark. In Section 4 we describe the analytical results arising from tax competition among Bismarkian governments, among Beveridgean governments and we consider a third possibility in which one government implements a Beveridgean policy and the other a Bismarkian one. In Section 5 we provide numerical examples illustrating our theoretical predictions. Section 6 considers the strategical choice of the type of system. Finally, Section 7 concludes.

2. Setup

In the present paper we consider a two country setting, indexed by A and B. Individuals are endowed with either low or high income. The size of high-income (also referred to as "rich") and low-income (also referred to as "poor") populations are each set at one. Individuals also differ with respect to their preference for living in a country (Monsoorian and Myers, 1993 and Hindriks, 1999). The easiest way of thinking about it is to imagine rich and poor individuals uniformly located along a line with dimension one, as in Figure 1. Those located from 0 to 1/2 are natives of Country A and the others of Country B. Therefore, when migration is not possible we suppose that half of the rich and half of the poor live in each country.

Figure 1. Natives of country A and country B



For the ease of exposition we suppose for the time being that only low-income individuals face the risk to loose their income, with a probability of I/2. Later we shall relax this assumption and consider that all individuals face the risk to loose their income. National governments provide social insurance which gives poor individuals a benefit in the bad state of nature (when they loose their earning

ability). Social insurance is financed by taxes, with the tax base depending on the type of system. When the system is Bismarckian there is no redistribution and benefits to the low-income individuals are financed by taxes levied on low-income individuals. Under a Beveridgean system, on the other hand, the benefits to the low income individuals are financed by a proportional tax levied on both income classes at a uniform rate. We assume, for the time being, that the system which is adopted and the preferences of the respective government go hand in hand. In other words, a Bismarckian government implements a Bismarckian system, while a Beveridgean government selects a Beveridgean system. Governments are labeled according to their preferences, which may or may not reflect a concern for redistribution.² Therefore a government may care for redistribution and insurance, or care only for insurance.

3. Autarky

To have a benchmark we first characterize the optimal choices of Bismarckian and Beveridgean governments when migration is not possible. We conclude that in autarky a Bismarkian government provides actuarial fair full insurance, i.e., it charges the poor a tax of ½ on their income to provide them also half of their income as an insurance benefit. That is to say that the poor end up always with half of their income, independently of the state of nature. At the same time rich are not charged any tax. On the other hand, a Beveridgean government taxes poor and rich 1/4 of their income to finance the benefit of the poor. That is to say that also rich finance the insurance of the poor.

4. Migration of Low Income Individuals

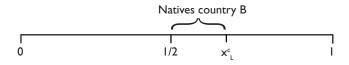
Having characterized the benchmark we look at how mobility of the poor affects tax choices. Governments anticipate the migration flow and only care about their natives. Poor individuals evaluate the net benefit of each country insurance policy and when the insurance policy of the foreign country is more advantageous for them they migrate if it outweighs the cost of not living in their home country. Therefore, a government is affected by migration because it changes the tax/benefit base and because governments care about their natives' preference for the home country. We analyze three scenarios: both governments provide Bismark-type of insurance, both governments provide Beveridge-type of insurance, and one government provides a Beveridge-type of insurance and the other a Bismark one. To each type of competition is associated an equilibrium migration flow. For future reference, let us call x^c , the location of the poor individual indifferent with respect to the country of living: All poor individuals located between 0 and x^c , live in country A, and the others in country B. The migration flow

¹ Another line of research has dealt with the effect of social insurance incentives on human capital investment. Poutvaara (2007) gets the result that labor mobility increases investments in human capital in the Beveridgean country but reduces that of migrants from Bismarkian towards the Beveridgean country.

² This assumption will be relaxed later.

is thus characterized by contrasting x_L^c to 1/2: If $x_L^c > 1/2$ poor individuals migrate towards country A, if instead $x_L^c < 1/2$ they migrate towards country B, and if $x_L^c = 1/2$ there is no migration flow at equilibrium. Figure 2 illustrates the case in which there is migration towards country A.

Figure 2. Migration towards country A



Our analytical results allow us to conclude that a Bismarkian insurance policy is never affected by migration: irrespectively of the other country type of policy, it still charges poor a tax of 1/2 of their income to provide a benefit of half of their income, just as in autarky. Additionally there is no migration flow in equilibrium, due to the symmetry of the problem. On the other hand, the Beveridgean government is affected by the migration threat. In the Beveridge Beveridge case, migration and the induced tax competition results in a lower tax rate and a reduced level of social insurance. Not surprisingly, this result obtains even when there is effectively no migration in equilibrium. Additionally, our analytical results suggest that the Beveridgean country's social insurance system could be more generous when it competes with a Bismarckian country than with a Beveridgean country. Put differently, the race-to-thebottom affecting tax rates and level of social protection could be less intense under a Beveridge-Beveridge competition than under a Beveridge-Bismarck competition.

5. Numerical Examples

We now present numerical examples assuming that the income of the poor is I, and that of the rich is 2. Columns 2 and 3 of Table I present the outcome for a Beveridgean and a Bismarckian country under autarky. In accordance with our analytical results, the Beveridgean government imposes a uniform tax rate of 1/4, while poor residents of a Bismarckian country face a tax rate of 1/2. Observe that welfare levels among governments with different preferences are not comparable.

Columns 4-6 present the results for the three types of tax competition when low income individuals have the possibility to migrate. Each country can adopt a Beveridge or Bismark type of policy, country A's tax rate is t^A (country B's tax rate is t^B) and x^c_L the location of the indifferent individual. The social welfare of low income individuals natives of country A is $SWF^A_{L^1}$, that of rich in country A is $SWF^A_{L^1}$, and that of poor and rich natives of country A is $SWF^A_{L^1}$. Analogously for Country B's welfare functions.

We can draw the following conclusions. First, migration affects Beveridgean insurance policies only; Bismarckian countries keep offering actuarially fair full insurance. Beveridgean countries, on the other hand, are forced to reduce their marginal tax rates. Second, the Beveridgean tax is greater when the other country is Bismarckian planner than when it is Beveridgean (0.224 vs. 0.219). This numerical result confirms the conjecture expressed in our analytical exercise, that the race-to-the-bottom affecting tax rates may be more important under Beveridge-Beveridge competition than under Beveridge-Bismarck competition. Third, a more significant tax-race-to-the-bottom is not necessarily bad news. The Beveridgean country attains a higher welfare under the Beveridge-Beveridge competition than under Beveridge-Bismarck competition, even though the tax rate is lower. This is because under Beveridge-Bismarck competition the cost of receiving migrants from country B is not offset by a slightly higher marginal tax rate. On the other hand, under Beveridge-Beveridge competition, the symmetry of the problem ensures no migration flows in equilibrium. Fourth, competition with a Beveridgean country may increase the welfare of a Bismarckian country, even when the social insurance policy is unchanged. This is because because the low income migrants are better off in the Beveridgean country A (recall that welfare depends on the natives). All the other low-income individuals are as well off as under autarky. They have the option to move to the other country but for them the benefit of a Beveridgean insurance policy does not offset the cost of migration.

So far we have concentrated on case where only the poor face and earnings risk and are mobile. The last three columns of Table I present some results for the case where the rich are mobile (while the earnings risk continues to be restricted to the poor). The rich indifferent individuals with respect to the country of living is x^{c}_{μ} . When the high income individuals are mobile, the tax-raceto-the-bottom under Beveridge-Beveridge competition is more significant than when the poor are mobile. Consequently, at the no migration equilibrium of the Beveridge-Beveridge competition low income individuals are worse-off and high income ones are betteroff (Column 4 and Column 7). However, under Beveridge-Bismarck competition the mobility of high income individuals generates a higher welfare for both income classes than the mobility of the poor (Column 6 and Column 9). The reason is that being low income individuals immobile, the natives of the Bismarckian country cannot migrate towards the Beveridgean one, and, at the same time, high income individuals natives of the Beveridgean country can migrate towards the Bismarckian country and enjoy a higher utility.

Finally, let us consider the case where rich individuals also face an income risk that may be insured by social insurance. Table 2 presents the results. We suppose that all individuals may loose their entire income with probability 1/2 (the same for all). The Beveridgean country taxes low and high income individuals at the same rate and provides a flat benefit to all individuals experiencing a loss. The Bismarckian planner provides actuarially fair full insurance to each income class.

Table I. Insura	nce of the poo	r							
N	o Mobility		Mobility of the poor			Mobility of the rich			
Country A	BEV	BIS	BEV	BIS	BEV	BEV	BIS	BEV	
Country B			BEV	BIS	BIS	BEV	BIS	BIS	
t ^A	0.25	0.50	0.219	0.50	0.2224	0.208	0.50	0.2223	
t ^B			0.219	0.50	0.50	0.208	0.50	0.50	
x _c L			0.500	0.50	0.74				
xcH						0.50	0.50	0.37	
SWF ^A _L	0.36	0.13	0.336	0.13	0.26	0.327	0.13	0.28	
SWF ^A _H	0.58	0.88	0.598	0.88	0.60	0.605	0.88	0.61	
SWF ^A	0.94	1.00	0.934	1.00	0.86	0.932	1.00	0.89	
SWF ^B _L			0.336	0.13	0.14	0.327	0.13	0.13	
SWF ^B _H			0.598	0.88	0.88	0.605	0.88	0.88	
SWF ^B			0.934	1.00	1.02	0.932	1.00	1.00	

Source: Authors own calculation.

Table 2. Insura	nce for all								
N	o Mobility		Mobility of the poor			Mobility of the rich			
Country A	BEV	BIS	BEV	BIS	BEV	BEV	BIS	BEV	
Country B			BEV	BIS	BIS	BEV	BIS	BIS	
t ^A	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.445	
t ^B			0.500	0.500	0.500	0.500	0.500	0.500	
×cL			0.500	0.500	0.594				
xcH						0.500	0.500	0.417	
SWF ^A _L	0.130	0.125	0.130	0.125	0.123	0.130	0.125	0.119	
SWF ^A _H	0.303	0.375	0.303	0.375	0.296	0.303	0.375	0.345	
SWF ^A	0.433	0.500	0.433	0.500	0.418	0.433	0.500	0.464	
SWF ^B _L			0.130	0.125	0.126	0.130	0.125	0.125	
SWF ^B _H			0.303	0.375	0.375	0.303	0.375	0.375	
SWF ^B			0.433	0.500	0.501	0.433	0.500	0.500	

Source: Authors own calculation.

The results show that, with only one exception, there is no tax-race-to-the-bottom, so that mobility has no impact on social insurance and welfare. The only exception concerns the Beveridge-Bismarck tax competition. With low income individuals being mobile, even thought taxes do not decrease, there is migration towards the Beveridgean country. When

instead high income are mobiles, the Beveridgean government is forced to lower the tax from 0.5 to 0.445 to avoid a greater migration towards the Bismarckian country. Nevertheless, the Beveridgean country attains its highest level of welfare when it competes with a Bismarckian country and when high income individuals are mobile.

6. Choice of the System

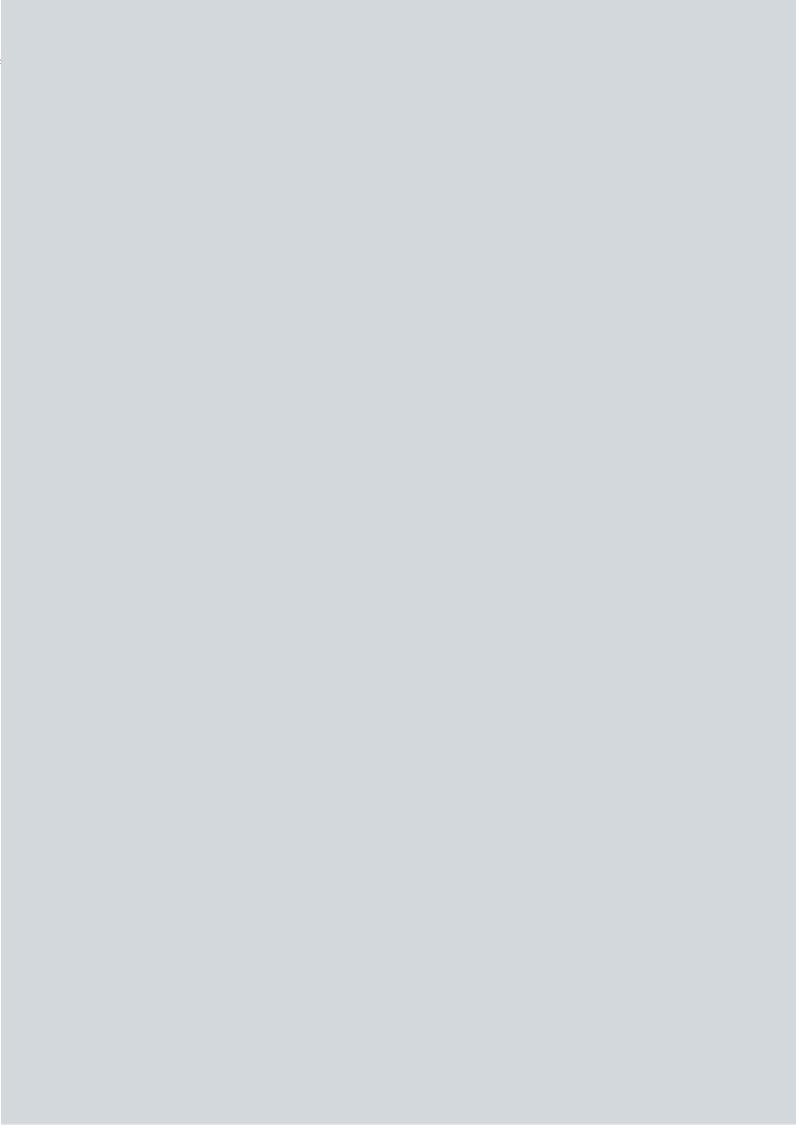
Up to this point, we have assumed that preferences and type of system go hand in hand. We shall now explicitly separate governments' preferences from the type of system. Under autarky, such a separation is of course not very relevant. When there is no mobility it is plain that a Beveridgean government will prefer a Beveridgean social insurance system over a Bismarckian one. Similarly, a Bismarckian government would never opt for a Beveridgean system. When there is competition, the choice of the system may in itself be part of a government's strategy. The question is if a government of a given type may find it beneficial to adopt a system for the other type for strategic reasons. Our analysis is purely illustrative and we make use of a numerical example developed in the previous section. Formally, we add a stage where governments decide which type of system to adopt. This decision is made (simultaneously) by both governments before tax competition game considered in the previous section is played and there is full commitment. We focus on the case where only the poor face an income risk and are mobile. Our results suggest that when both governments have identical preferences, they choose the social insurance system associated with their type. A more interesting and surprising outcome emerges in the asymmetric case where one government has Beveridgean preferences and the other Bismarckian ones. In this case both governments choose a Beveridgean insurance policy. Indeed we find that the Bismarkian government finds it optimal to adopt a Beveridgean insurance policy with a low tax. In this way the Beveridgean government increases slightly the tax since the threat of migration is not as strong as compared to the equilibrium one when in competition with a Bismarckian policy.

7. Conclusion

We address the question of social insurance systems integration in a two-country setting where countries choose simultaneously and non-cooperatively the tax to be charged. We analyze three possibilities: both governments provide Bismark-type of insurance, both governments provide Beveridge-type of insurance, and one government provides a Beveridge-type of insurance and the other a Bismark one. We conclude that a Bismarkian insurance policy is never affected by migration but that the Beveridgean one is. Moreover, our results suggest that the race-to-the-bottom affecting tax rates may be more important under Beveridge-Beveridge competition than under Beveridge-Bismarck competition but that still the Beveridgean country attains a higher welfare under the Beveridge-Beveridge competition than under Beveridge-Bismarck competition. We also considered the strategic choice of the type of the system and illustrated that, when in competition to Beveridgean governments, Bismarkian governments may find it beneficially to adopt a Beveridgean policy.

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Electoral Rules and Fiscal Equalization

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I. Introduction

Recent years have witnessed a substantial increase in the amount of research on how political institutions influence economic outcomes. The issue that political institutions matter has not gone unnoticed in, for instance, political science. Much work in this discipline has concentrated on their impact on political outcomes such as the number of parties in legislature, coalition formation, coalition stability, and voter turnout. The distinctive feature of political economics is its emphasis on the institutional determinants of economic outcomes. Related to public finances, a key question in this literature is how political institutions affect the level of public spending, the composition of spending, the accumulation of debt, the level of rent extraction by politicians, and the level of corruption (see, e.g., Persson and Tabellini, 2003, and Acemoglu, 2005).

Apart from political institutions, legislative outcomes also depend on the fiscal environment in which politicians operate. A characteristic feature of decentralized public finance is that a significant share of local resources is transfer income. One important source of transfers is equalization payments. Their prime motivation is to ensure that citizens have access to a comparable amount of public services at comparable cost irrespective of their place of residence in a jurisdiction (Boadway, 2004). The notion of a "social citizenship" is prescribed by the constitution, for instance in Germany, or are historically evolved norms of redistribution which are not explicitly prescribed by the constitution, but still are shared by a significant share of the electorate. The way the norm feeds into equalization policy generically differs across jurisdictions, and so do the economic effects equalizing transfers have.

Given that jurisdictions differ in their political environment, it might be also reasonable to expect that fiscal incentives exerted by equalization policy will play out differently in different political regimes. In the remainder of this report we provide a non-technical

summary of the paper by Egger, Koethenbuerger and Smart (2010b) which empirically analyzes to which extent the incentive effects of fiscal equalization depend on the electoral rule under which politicians are elected.

2. Incentive Effect of Fiscal Equalization

Fiscal equalization programs differ in generosity and structure across countries. The formula used to compute entitlement payments is typically complex and we do not attempt to survey the different approaches here. Instead, we concentrate on one important type of equalization program which is used in a number of federal countries such as Canada, Germany, Switzerland, Italy, and Australia. Therein, the norm of a "social citizenship" feeds into a transfer formula which compares the fiscal need of a jurisdiction with its fiscal capacity. Such a scheme is frequently referred to as fiscal capacity equalization. The fiscal capacity of a jurisdiction is generally computed as the amount of tax revenues a jurisdiction could collect if it were to levy a tax on its tax base equal to, e.g., the average tax rate of all jurisdictions. Thus, it is a hypothetical rather than the actual tax rate of jurisdictions which is used to compute equalization payments. The adjustment guarantees that jurisdictions have no strategic incentive to lower its tax rate in order to downward manipulate fiscal resources. Evidently, the definition of fiscal capacity does not eliminate all incentive effects of transfer policy. Most notably, the tax rate still determines the size of the tax base. Previous literature shows that this dependence implies a positive tax price effect (Smart, 1998). A tax increase in a jurisdiction lowers its tax base. The tax base contraction reduces the fiscal capacity of the jurisdiction. Straightforwardly, the tax base contraction increases transfer income where the fiscal flow quantitatively depends on the rate at which deficiencies between fiscal need and fiscal capacity are compensated. As a consequence, fiscal capacity equalization

increases tax rates and, depending on the economic environment, might even improve efficiency of fiscal choices.¹

The theoretical prediction of a positive incentive effect has been tested in a number of papers. For instance, Hayashi and Boadway (2001) report empirical results consistent with the idea that Canadian provinces conform in their tax rate setting to the tax rate of the province of Ontario which predominantly determines the average provincial tax rate used to compute the standard fiscal capacity in the Canadian equalization formula. Smart (2007) extends their approach and finds a robust effect of equalization on the tax policies of grant-receiving governments in Canada. Dahlby and Warren (2003) find a similar incentive effect for Australia. Buettner (2006) uses variation in equalization rates and in the sharing rate embedded in vertical revenue-sharing arrangements in the German state of Baden-Wuerttemberg to estimate the incentive effect of transfers. He finds evidence of a positive incentive effect. Egger, Koethenbuerger and Smart (2010a) uses a large-scale reform of equalization rates in the German state of Lower-Saxony to identify a positive tax-price effect of fiscal capacity equalization on municipal tax policy.

A common feature of all papers is that they do not lean themselves to the issue of whether electoral rules have an impact on the incentive effects of transfer policy.

3. Political Economy of Public Finance

Differently, the literature on political economy has shed light on how different facets of political institutions affect economic policy choices and thereby, economic outcomes. The various dimensions of political institutions which have been analyzed include the organization of legislature as, e.g., measured by the number of legislators, the degree of centralization of policy making (parliamentary vs. presidential systems) and the electoral rule (proportional rule vs. majoritarian rule) used to elect legislators.² The literature on legislative organization large follows the work by Weingast, Shepsle, and Johnsen (1981) which, assuming a norm of universalism, show that a higher number of legislators is associated with a higher level of spending. Legislators propose projects which are target to their voters. Benefits are targeted while the spending cost is shared among the whole population, leading to an excessive level of spending. Informative for empirical analysis, the overspending bias is increasing in the number of legislators. The prediction is confirmed using cross-country data (Bradbury and Crain, 2001), US city data (Bagir, 2002) and German municipal data (Egger and Koethenbuerger, 2010), among others.

Being characterized by different degree of separation of powers, Presidential systems fare differently relative to parliamentary systems in term of fiscal outcomes. They typically have smaller government (Persson, Roland, and Tabellini, 1997, 2000). The result points to the role of a presidential system in internalizing a larger fraction of pork-barrel spending.

Electoral rules provide legislators with different incentives to spend on universal public goods and targetable spending such as transfers. Since majoritarian rules are more demanding in terms of vote shares which are necessary to be represented in political decision-making, the system provides more incentives to cater to specific groups of voters in community-wide elections relative to a proportional system (Lizzeri and Persico, 2001). Differently, considering spending categories which are targetable to socio economic groups or to geographically defined groups (e.g., unemployment benefits vs. spending on road construction), proportional systems do equally provide incentives to use targetable spending (i.e., spending which can be targeted to a social constituency). The dichotomy of incentives arises when majoritarian voting is district-based while proportional voting is community-wide (Milesi-Ferretti, Perotti, and Rostagno, 2002).

In sum, the literature on comparative political economy provides numerous important insights into the institutional determinants of spending outcomes. Thereby, it exclusively focuses on the incentives effects for public spending which are induced by political systems.

4. Fiscal Incentives across Electoral Rules: Identification

Both strands of literature are largely disconnected. While the literature on, e.g., electoral rules neglects fiscal equalization systems and their incentive effects, the literature on fiscal equalization does not account for the electoral rule under which politicians are elected and their interaction with equalization systems.³ Put differently, previous literature does not analyze whether these incentive effects intertwine, leading to incentive effects of equalization which are presumably levelled up or down by electoral concerns of legislators. In Egger, Koethenbuerger and Smart (2010b), we try to bridge both strands of literature by empirically identifying the incentive effect of fiscal equalization under different electoral rules.

The fundamental problem of identifying the influence of electoral rules on local fiscal outcomes is that, e.g., municipalities in a state typically operate under the same electoral regime. Even if municipalities could opt for one or the other regime, the political system may be endogenous to preferences for spending, if for example voters in countries that prefer less public spending also

¹ For instance, if taxes are inefficiently low (e.g. due to tax competition) a higher equalization rate improves the efficiency of tax rate choices. See Koethenbuerger (2002) and Bucovetsky and Smart (2006).

² Arguably, there is some overlap between these different dimensions. Still, the categorization is helpful in reviewing the literature.

³ There is a literature on the political economy of fiscal flows. The effects of partisan behavior on transfers is analyzed in, e.g., Johansson (2003) and Solé-Ollé and Sorribas-Navarro (2008). But electoral rules make no appearance.

prefer, for some reasons, a majoritarian system. Hence, seeing less spending in a majoritarian system might not be taken as evidence of a causal relation between majoritarian systems and the size of public spending with causality running from the electoral system to spending. Rather, the choice of the two may be exclusively determined by voter preferences.

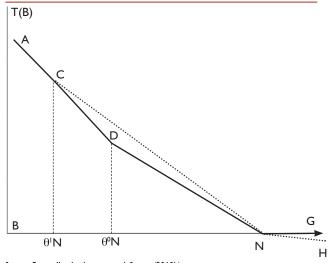
Ideally, one would like to randomly assign electoral rules and equalization systems across jurisdictions in order to eliminate any endogeneity problems. As one can easily imagine, such experiments are not available in the real world. However, one can resort to quasi-experimental approaches where the electoral system and equalization formula are decided in the political sphere, but the assignment of policy to a single jurisdiction is as good as random. In the empirical analysis, we make use of two recent reforms in the German state of Lower Saxony (Niedersachsen) as quasi-natural experiments to empirically identify the incentive effect of fiscal equalization under different electoral rules. The first reform became effective as of 1996 and changed the electoral rule in municipalities. The second reform became effective as of 1999 and involved changes in the equalization formula. We will briefly describe the details of the reforms below.

5. Reforms

Equalization reform: Municipalities in Germany receive equalization transfers or contribute to the equalization fund, depending on their measured fiscal wealth. The exact definition of the equalization scheme differs across states. But the common characteristic is that entitlement payments are calculated by comparing the fiscal need of a municipality with its fiscal wealth. The prime determinants of the fiscal need measure are population size and a level of per-capita spending. Fiscal wealth comprises the tax base of the profit tax for which municipalities can independently set the tax rate. However, it is not the actual amount of tax revenues which finally determines fiscal wealth. The tax base is multiplied by a hypothetical tax rate, which the state government selects, to arrive at a measure of fiscal capacity; that is at an amount of tax revenues which can be collected if the municipality were to levy the hypothetical tax rate. Any deficiency between fiscal needs and fiscal capacity is at least partly compensated by transfer payments.

Putting the aforementioned hypothesis of a positive incentive effect of fiscal-capacity equalization to a test ideally requires a sizeable change in the equalization rate at which deficiencies are compensated. Such a reform of the equalization system has been implemented in the state of Lower Saxony in 1999. The reform was initiated by a ruling of the state supreme court in November 1997 which declared the initial system unconstitutional and requested the implementation of a new system as of 1999. The core of the municipal transfer system in Lower Saxony is (i) a system of regular equalization grants, which compensate for a fraction of the amount by which each municipality's measured

Figure I. Equalization Formula.



Source: Egger, Koethenbuerger and Smart (2010b).

taxation capacity falls short of its targeted spending level or fiscal need, and (ii) a system of supplementary equalization grants, which establish a floor level of spending in each municipality, and equalize 100 per cent of deficiencies up to the floor. The reform prescribed changes in the different equalization rates. Prior to the reform, the regular equalization transfer compensated 50 per cent of deficiencies in fiscal capacity below the target level. In the 1999 reform, the regular equalization rate was increased to 75 per cent, while the threshold below which supplementary equalization is paid was decreased.

To understand the incentives for local tax policy induced by the transfer system, it is useful to consider a graph of the equalization formula. Figure 1 expresses the relationship between a municipality's own fiscal capacity B and its equalization transfers T(B) in both the pre-reform and post-reform periods. The kinked line segment ADNG is the constraint which obtains in the pre-reform period: capacity deficiencies are fully compensated by transfers when $B \le \theta^0 N$, so the constraint has slope -1 in this interval; 50 per cent of capacity deficiencies are compensated when $\theta^0 N < B \le N$, so the slope of the constraint is -0.5 in this interval; and no equalization transfers are paid when B>N, the slope of the constraint is thus zero to the right of N.The post-reform budget constraint is represented by the kinked line segment ACNH. The effect of the reform was to increase the fraction of capacity deficiencies compensated by regular equalization transfers to 75 per cent and so to increase the slope of the constraint by 0.25 in the intermediate interval, while reducing the threshold at which supplementary equalization was paid commensurately to $\theta^1 N.^4$ For governments with tax capacity in excess of need, operating on segment NG, no equalization

⁴ For governments initially operating on segment AC of the pre-reform constraint, there was no change in marginal incentives. However, the new threshold level was extremely low, at 20 per cent of the target spending level. In consequence, only one municipality has qualified for supplementary transfers in the post-reform period.

payments were received before or after the reform. In the post-reform period, however, such municipalities were required to pay 20 per cent of excess tax capacity to the state government, operating now on the segment NH with slope -0.2. Such a payment operates exactly like a negative equalization grant with an equalization fraction of one-fifth.

Thus, the reform resulted in a rather stark change in the extent to which marginal changes in local resources B are compensated through the formula. Based on the reform, municipalities may be classified into three groups according to their equalization status prior to the reform. Group I, corresponding to segment CD of the pre-reform budget constraint, faced a decrease in equalization fraction of 25 percentage points following the reform, while Groups 2 and 3, corresponding to segments DN and NG, faced increases in the equalization fraction of 25 and 20 percentage points, respectively. According to theory then, tax rates among the former group of municipalities are predicted to fall, compared to those of the other two groups.

Electoral reform: For a long time, municipal policy making in the former West-German states was heterogeneously organized. While municipalities within a state faced the same municipal charter, it markedly differed across states. The two most prominent examples of municipal charters are the South German Council (Süddeutsche Ratsverfassung) and the North German Council (Norddeutsche Ratsverfassung). After World War II, the North German Council was introduced in the state of Lower Saxony by the British military government. The political system draws on the British local government system and features three political institutions: the council, the mayor, and the municipal manager. The size of the council ranged from 8 to 65 members (depending on the population size of the municipality) and council members were elected under municipality-wide, proportional rule. Elections took place every 5 years. The political power exclusively lay with the council. The members decided on the fiscal affairs of the municipality and appointed high-level political employees of the administration.

The council elected a mayor for whom the city charter defined a representative role, without any formal authority. For the task of administration, the council nominated a manger. The manger was head of administration and in charge for the daily operation of bureaucracy. It was nominated for 12 years and accountable to the council. The system is reminiscent of the council-manger system which is implemented in a number of US cities (Baqir, 2002).

The manager-council system was the predominant form of municipal decision making in the Northern states of Germany, while the states of Bavaria and Baden-Wuerttemberg operated under the South German Council system, also referred to as the mayor-council system. These systems co-existed for nearly 50 years. In the 1990, politicians questioned the adequacy of the mayor-manager system. Experience has shown that such a system has resulted in legislative "gridlock" at a time when council fragmentation increased. Also, it

was held that the position of an honorary mayor was no longer appropriate, only absorbing resources without offering significant benefits to the electorate (Gissendanner and Kersting, 2005).

In 1996, the state of Lower Saxony amended its municipal charter legislation to introduce direct election of mayors, chosen in community-wide majoritarian elections. The mayor is thereby politically independent from the council and a move by the council to recall the mayor must be approved by at least half of the electorate. Besides introducing direct elections for the mayor, the reform involved a substantial change in the balance of power between the council and the mayor. The mayor is the head of administration; a function which was assigned to a nominated manager in the pre-reform system. The council has no longer authority to nominate top-level employees in the administration, including high-level political administrators (civil servants who serve for 8 years). These arrangements imply that the mayor has a wide range of control in the administration. To facilitate decision-making, the council nominates members for an intermediary executive body which is chaired by the mayor and in which the mayor has the sole right to propose legislation (Gissendanner and Kersting, 2005).

In short, the 1996 reform resulted in a significant devolution of power from the municipal council, elected under municipality-wide proportional representation, to the mayor, elected under municipality-wide majoritarian rule. Moreover, the new electoral system was phased in gradually among municipalities in Lower Saxony over a period of twelve years, following expiration of the long-term contract with the municipality's chief executive officer:

As a consequence, at the time the equalization reform became effective some municipalities operated already under the new regime. Thus, we can compare the equalization reform response of municipalities which have already transitioned to the new electoral system with the response of those municipalities which still operate under the council-manager system.

6. Empirical Analysis

A key question is how one measures the policy response of municipalities. In principle, the policy response may be measured via changes in expenditure and revenue categories of municipalities. While municipalities have some expenditure authority, it is not always straightforward to infer which fraction of spending is indeed controlled by the municipality. In particular, for a social spending categories municipalities face minimum spending requirements imposed by upper level governments (mandates) which limit the municipality's flexibility in adjusting its expenditure in response to the reform. Also, the theory is primarily formulated in terms of tax price effects which make expenditure variables a less straightforward choice of how to measure municipal policy responses.

Municipalities have some revenue authority. The three most important sources of own-source tax revenues are the business tax (Gewerbesteuer), a property tax related to agricultural land (Grundsteuer A), and a property tax levied on land not used in agriculture (Grundsteuer B). All three tax instrument share the common feature (i) that their tax bases simultaneously enter the calculation of fiscal capacity in the equalization system (i.e. the term B in the preceding description of the equalization system) and (ii) that a municipality can decide on the tax rates, while the tax base is determined by federal law. In the case of the two property taxes, the tax base is not the market value of land. Rather, for administrative simplicity, it is a hypothetically determined value of land (Einheitswert) which does not vary with the fiscal and economic conditions in a municipality. As such, property tax rate changes do presumably change the market value of the land, but do not affect the tax base. Hence, on institutional grounds, there is no direct response in the property tax rates to be expected after the change in the equalization rates. It is, however, exactly the link between the tax rate and size of the tax base which generates the incentive effect of fiscal capacity equalizing transfers we are interested in. Differently, the tax base of the business tax is business profit which will vary with the level of business taxation in a municipality. This makes the business tax rate the preferred choice of dependent variable in our empirical analysis. Besides this, it is also the largest revenue category which municipalities control.

As indicated above, it is the exogenous variation in the equalization rate and electoral system at the municipal level which we use to identify the incentive effects of equalization under the different electoral rules. To do so, we restrict the data set and classify municipalities in the following way. First, at the time the equalization reform was phased in some municipalities already operated under the new electoral regime, while other transitioned to it only afterwards. In order to have a clean identification of the reform effects, we exclude all municipalities which transitioned to the new electoral regime in the years 1999 to 2004. These are the years in our sample period following the change in the transfer formula. This allows us to have two groups, reformer and non-reformer, whose business tax rate response can be measured over the period 1999 to 2004 without sample size changes. Second, municipalities were differently affected by the equalization reform depending on their equalization status prior to the reform. Hence, we have two groups of municipalities which are predicted to react differently to the change in the equalization rate.

In Egger, Koethenbuerger and Smart (2010b), we relate the average business tax rate prior to the equalization reform to the business tax rate in any of the years 1999 to 2004. We capture supplementary transfer eligibility by a dummy variable that is set at one for eligible municipalities and at zero for non-eligible municipalities.⁵ To capture

⁵ Municipalities in Lower Saxony which are supplementary transfer eligible correspond to the "Group I" municipalities in our description of the equalization reform, while non-eligible municipalities correspond to municipalities in Group 2 and 3.

the impact of electoral rules, we interact the dummy variables with a second (demeaned) dummy variable which is set to one for reformer and to zero for non-reformer of the electoral system.

The results in Egger, Koethenbuerger and Smart (2010b) show that eligible municipalities adjust their business tax rates less relative to the average rate in the pre-reform period than non-eligible municipalities. The effect increases over time and stabilises towards the end of the sample period. The result is in line with the theoretical prediction in Smart (1989). Eligible municipalities face a lower equalisation rate after the reform while non-eligible municipalities face a higher one. Hence, eligible municipalities should decrease the tax rate relative to non-eligible municipalities, ceteris paribus. However, this effect is only the average treatment effect related to the equalization reform. The effect might be different in magnitude for those municipalities which operate under the new electoral system. Interestingly, the effect of the equalisation reform is indeed felt differently by municipalities which have already transitioned to the new electoral system. The interaction term is negative in the years after the equalisation reform. The result suggests that municipalities which already directly elect the mayor adjust their tax policy more strongly to the new equalisation system. Comparing reformer and non-reformer of the electoral system, we find that the former group is more responsive to the change in fiscal incentives, where their response is roughly 50 per cent larger than the one of non-reforming municipalities.

In general, the identification of incentive effects across electoral regimes might be biased in simple econometric analysis. We will briefly discuss two econometric issues which, in general, may cause an estimation bias and explain how we deal with them in our empirical analysis. First, the electoral reform and transfer reform – as natural experiments – are exogenous from the viewpoint of municipalities. Still, there might be self-selection into the different equalization programs which may create a bias in the estimation results. In the empirical analysis we control for problems of self-selection associated with the fiscal status of municipalities in the equalization programme by a so-called selection into treatment model and by instrumental variable regressions.

Second, the equalization reform not only implies a change in equalization rates, but also a change in transfer payments (induced by the change in rates). The adjustment in transfer income may have generated changes in the business tax rate. Without controlling for transfer income, the change in the business tax rate found in empirical analysis might not be related to changes in fiscal incentives. Using actual transfer income is not a satisfactory solution as it is already affected by behavioural changes in municipal policy. In Egger, Koethenbuerger and Smart (2010b), we compute transfers a municipality would have received post-reform if its tax base and population size (co-determining the need measure) were the same as in the pre-reform period, but the new formula was in place. Using this measure of transfer income, the variable is not affected by post-reform behavior of a municipality.

Accounting for these econometric issues, we conclude that municipalities which operate under the new electoral system adjust the tax policy more strongly to the new equalisation formula.

7. Conclusion

In this project we try to combine two strands of literature by analysing how electoral rules affect incentive effects of fiscal equalisation systems. Key to the analysis are two reforms in the German state of Lower Saxony which changed (i) the electoral rule under which the mayor is elected and (ii) the rate at which fiscal deficiencies of municipalities are compensated. The most interesting result concerns the adjustment in business tax rates over time. Municipalities which have transferred significant decision-powers to the mayor appear to react more strongly to the equalisation reform.

The result points to the more general issue of how responsive municipalities are to changes in the fiscal environment. One motivation for the electoral reform was that the direct election of mayors was viewed by some actors as a means of dealing with legislative "gridlock" in fragmented municipal councils and so of speeding legislative response to fiscal problems. The empirical findings are consistent with this view.

An alternative rationale for the difference in results across electoral regimes is that the cost of taxation as perceived by politicians is higher in a mayor-council system. For instance, council members may engage in pork-barrel spending and only internalize the cost of public spending which falls onto the group the legislator targets. The mayor, however, is elected under majoritarian rule which affects policy incentives of the mayor. Given the difference in electoral systems, the mayor presumably internalize a larger share of the overall costs of pork-barrel spending, with the consequence of reacting more strongly to changes in the cost of taxation which, for instance, follow from a change in the equalization rate. The reasoning is in line with previous work on presidential vs. parliamentary systems, where a presidential system leads to stronger fiscal adjustments (Persson and Tabellini, 2003), and on electoral systems where legislators elected under majoritarian rule are more likely to internalize the overall cost of pork-barrel spending (Lizzeri and Persico, 2001).

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OXFORD

Fiscal Federalism:

A Comparative

Introduction

George Anderson

Fiscal Federalism: A Comparative Introduction

Oxford University Press, 2010

In today's world there are roughly 25 federal countries, which account for 40 percent of world's population. Given the extent of federal systems all over the globe, it is important to make people aware of how federations work and of the role of fiscal federalism. Anderson's book successfully accomplishes this aim; in jargon-free language, he

presents a concise and comprehensive overview of fiscal federalism. He also offers a comparative perspective by presenting country case studies, in the knowledge that there is no best model of fiscal federalism and that the mechanisms used by countries can differ greatly.

The book is divided into six main parts which focus on expenditure responsibilities, tax regimes, allocation of revenue sources, revenue sharing and intergovernmental transfers, economic management and institutional arrangements.

Depending on whether the federal system is integrated (as in Canada) or dualist (as in Austria), constituent units within federations will have greater or lesser expenditure responsibilities and they will administer either their own legislated programs or federal laws. In

terms of direct spending, for instance, Anderson notes that while in most federal states federal government spending is between 45 and 55 percent, there are also highly centralized federations where this figure is over 80 percent (e.g. Venezuela, 78%, and Malaysia, 84%). However, in overall terms, the author points that the divergence is greater when looking at revenue-raising responsibilities than at the allocation of expenditure responsibilities. Such differences are especially large with regard to the autonomy that constituent units have to set own-source revenues. While more devolved (less centralised) regimes are seen, in general, to be more accountable, autonomy also raises some concerns, particularly in terms of certain risks inherent to tax competition. World-wide practice reflects that subcentral governments raise a very large share of the total revenues, although there are exceptions (Canada's 47% and Switzerland's 40%). Following on with this discussion, in chapter 4 the author focuses on the distribution of specific tax revenues, reviewing the existing revenue sources (income, value-added and sales or turnover taxes, plus social insurance contributions and property taxes). In countries with large endowments of natural resources, taxing the rents from these resources can also represent a large source of income for subcentral governments; Anderson suggests that when revenues are very large there should be a mechanism to stabilize their impact

on subcentral budgets, and that governments should consider using them as long-term savings.

So federal governments get their revenues from many different sources -taxes and also borrowing- and in the end these revenues

> exceed their own direct spending needs. In contrast, constituent units cannot raise sufficient revenue.

> Intergovernmental revenue sharing and transfers exist to solve this problem; and they are also used for redistribution and to promote federal government programs. All these issues are taken into consideration in chapter 5, where Anderson gives a brief explanation of the different types of transfers (conditional versus unconditional) and their role in horizontal fiscal equalization. He also provides several examples to show that the degree of tax sharing varies considerably amongst federal countries: for instance, in Nigeria and Mexico tax sharing added to intergovernmental transfers account for 90% of constituent units' finances, while in Canada, Switzerland and the US this share is between 13 and 25%.

In the last two chapters the focus shifts towards

macroeconomic and institutional issues. Chapter 6 examines the role of central governments in "managing" the economy of the federation and the role of constituent units in influencing the central government's decisions. Debt management, fiscal responsibility laws and microeconomic policy are also addressed in this section. Chapter 7 concludes by examining the task that institutional arrangements (for instance, a parliamentary versus presidential systems, the impact of corruption, etc.) have in shaping a country's fiscal federalism.

To sum up, this is book is highly recommended not only for students on fiscal federalism but also for citizens interested in this increasingly popular topic. Using non-technical language, this short but precise and well-written book is both informative and enjoyable.



Sally Wallace (ed.)

State and Local Fiscal Policy. Thinking outside the box?

Edward Elgar Publishing Limited

Since the 1990s, state and local finances in the United States have been challenged by several changes in demographic trends and, more notably, by the current economic recession. In a context of financial struggle, determining the most appropriate fiscal policy is essential but also extremely complex. Traditional public finance mechanisms no longer seem to suffice and creativity, i.e.

"thinking outside-the-box", is needed in certain situations.

This book contains the contributions from well-known scholars in public finance at a conference in Georgia in May 2008 where they analysed and debated the situation of state and local fiscal policies today as well as potential future trends. The volume is divided into four main sections. Part I begins with a chapter that identifies the six key long-run challenges for states and localities. These issues, according to the author, are: health care costs and provision; assessment, productivity and accountability in education; privatization of higher education and implications for access; corrections and public safety; resurgence of the property tax

revolt; and the expectation that economic development is a primary objective of state-local government. In the second chapter of this part the authors propose two reasons to explain the increasing creativity shown by state tax policy-makers in their revenue-raising strategies. The first hypothesis ('alienation') assumes that the growing inequality in the US economy since the 1980s has made the average American voter reticent about 'big governments' and tax hikes. The second hypothesis ('obsolescence') refers to the inability of old tax policies to face the economic demands of the twenty-first century.

Part II of the book examines how states cope with alternative tax structures. Chapter 4 asks how states can work without an income tax. The author uses US data to compare revenues in 'income tax' and 'non-income tax' states while discussing one of the several aspects to take into account when deciding whether to eliminate income tax: the funding of public services. The next chapter focuses on California's state and local revenue structure since the approval of Proposition 13 on property taxation. Since then, California's state and local finances relied far less on property taxation, which is currently below 13 percent. This has made California more reliant on other state and local revenue instruments which are unstable over the business cycle; this, in turn, has generated more instability in the state's government budget. To alleviate this situation, several reforms are suggested (for instance, creating greater fiscal discipline) and an interesting 'out-ofthe-box' idea is added (the use a system of cap-and-trade alone to meet the greenhouse emission goals).

In part III the attention turns to the new forms of taxation. This section starts by exploring various corporate tax structures in

> Georgia and the effects of moving from threefactor apportionment of corporate income to a gross receipt tax (GRT). The authors use data on eight years of corporate tax returns in this state to provide empirical evidence on the winners and losers of switching to a GRT. The following topic discussed in part III is the possible revenue impact of moving from a system based on income tax to one based on a consumption tax at state level. In this case as well, the state of Georgia is the subject of an empirical analysis of the feasibility of such change. The question is relevant given the increasing number of proposals in the US for a conversion towards a flat rate consumption tax.

> The last section, part IV, evaluates the budgetary aspects of the fiscal choices facing state and local governments. Chapter 8 analyses the state

governments in the US whose structural balances are rated as strong by the Government Performance Project. This project aims to provide data that facilitates governments' understanding of their management role. Structural balance is seen as the capacity to cover ongoing expenditures with ongoing revenues. Nine US states are identified as the leaders in reaching and maintaining this balance. It is therefore interesting to investigate the features of these states: for instance, one of the findings of this study is that states with a strong structural balance were less likely to increase taxes and cut expenditure in times of fiscal stress. Finally, chapter 9 discusses the imposition and effects of local government tax and expenditure limitations which have continued to grow over the last decade.

To conclude: this volume contains extremely valuable contributions from experts in state and local public finance who evaluate current fiscal practices in the US and point to potential policy changes for the future. The book is highly recommended for both public finance students and policy makers since it not only discusses 'traditional' fiscal policy practices but also proposes 'outside-the-box' ideas to overcome the shortcomings of obsolete fiscal tools.



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