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Solidarity and the design of equalization: setting out the issues

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Abstract

Inter-jurisdictional differences originate in choices or situation disparities. Equalization refers to the latter only. Recent policies separate disparities of revenue potential from expenditure needs in various formula-based vertical or/and horizontal financial transfers. Whereas the RTS method (for "Representative Tax System) is common for revenue equalization, different concepts have been used to express disparities associated with decentralized public expenditures. Needs or costs disparities and expenditure disabilities are usually given as rationale for equalization. The paper explores four issues in the two types of equalization: funding, measures of disparities, formulas and possible additional policy variables. It also questions the rationale of vertical versus horizontal equalization transfers. The objective of the paper is to organize the core questions around these issues in a coherent – and if necessary iterative – sequence of reasoning with the aim of producing guidelines for policy implementation.

INTRODUCTION [2]

In most federal or decentralized countries, the reduction of fiscal disparities between sub-national governments (SNGs thereafter) is an acknowledged aim of intergovernmental fiscal policy. Even if it is far from undisputed on economic grounds (Oates, 1999: 1127), fiscal equalization transfers are in many countries an important instrument to pursue interregional solidarity. For practitioners, the theory of fiscal equalization is elusive. There is no core program; it is mainly derived from the theory of grants-in-aid. There are several ways to consider SNGs' capacity. The distinction between expenditures/costs/needs equalization is blurred. This is not surprising. Equalization is first and foremost a question of redistributive justice among SNGs. How much the "rich" jurisdictions should contribute to equalization and "how much" the "poor" can claim, the estimation of the degree of capacity - financial, fiscal or tax capacity - together with the evaluation of the amount to be paid or received are closely - though not exclusively - related to the concept of "solidarity", a concept that opens up a variety of opinions. Equalization policies are pervaded with value judgments that cannot be seized by theory. And since equalizing formulas are embedded in many ad

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[2] This paper is a compilation of recent studies by the author on the institutional and political economy of equalization, most of them centered on the logic and coherence of implementation. See Dafflon and Vaillancourt (2003), Dafflon and Mischler (2008), Dafflon (2007) and two papers in progress: Dafflon and Vaillancourt (2009), Dafflon (2010).

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hoc systems, generalization and policy guidance are difficult.[3]

This paper is divided into four sections. Section one explores the rationale of fiscal equalization: what are the possible origins of fiscal differences in the relevant literature? Section two presents in graphical form revenue equalization in addressing four fundamental questions: the measurement of the revenue differentials, equalization formulas, how much equalization, and possible further adjustments. Section three turns to equalization schemes that incorporate expenditure needs/costs differentials: how to determine "standardized" expenditures; to measure disparities in needs or in costs? It also looks at the available methods for estimating expenditure needs/costs disparities. Section four concludes.

1 THE RATIONALE FOR EQUALIZATION

Most federal and decentralized States have experienced fiscal imbalance, vertical and horizontal, and have found the necessity to correct both over time. In a decentralized budget, vertical imbalance results from the fact that in most cases, major buoyant taxes are held by the federal government, while labour intensive functions, such as health, education and social services have usually been assigned to SNGs for reasons of proximity and preferences (Watts, 2008: 103). Vertical imbalance should be solved by re-assigning taxation or through additional financial transfers from the center to the SNGs.

The origin of horizontal imbalance is different. First, no matter how carefully functions and revenues are decentralized with the objective of matching expenditures and taxation, their paths differ over time causing disparities in decentralized budgets of SNG units. Second, since no federal or decentralized country is perfectly homogenous, the different levels of taxation by SNGs do not necessarily mirror differences in the demand for local public services. Sub-national financial capacities depend on both the tax bases accessible to SNGs and the territorial distribution of those bases. Needs vary according to the particular preferences of the local residents; but they also depend on geographic, demographic, and socio-economic factors. They are further determined by legal (but not only) requirements as to the type of mandatory public services that SNGs must provide.

Equalization is the usual answer to horizontal imbalance. It refers to attempts made at the reduction of fiscal differences among SNGs by monetary transfers. Two initial questions arise with respect to implementing equalization schemes. (i) What sort of "solidarity" among SNGs is accepted and acceptable and who decides on this? More solidarity would clearly mark a trend towards standardization in the delivery of core local public services, instead of promoting the provision of local-specific services at comparable tax levels. (ii) Where to draw the line between local preferences and mandatory local public services? As Boex and Martinez-Vazquez (2007: 293) put it, without a clear demarcation line separating specific standards of services from an

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[3] Recent publications on intergovernmental transfers and equalization summarize the various theoretical facets of equalization, the pros and cons, and confront theories to practices. This is not surprising in view of the dissatisfaction that arose from the equalization systems dating from the seventies and the urge for changes. See Färber and Otter (eds), 2003; Boadway and Shah (eds), 2007; Martinez-Vazquez and Searle (eds), 2007; Kim and Lotz (eds), 2008.

overall envelope of expenditures, perceptions of what may be a need can easily escalate to completely unaffordable expenditure levels.

In a first attempt to delineate what should or should not be included in equalization, Box 1 reviews the possible origins of fiscal differences in the relevant literature. The logic behind this classification into five categories is twofold:
(i) Those items that are within the scope of decision and the fiscal management of SNGs should not be taken into consideration for equalization. They belong to the sphere of local autonomy and responsibility. [4]
(ii) "External" items that are outside their scope of decision should be compensated, at least partly, if they result in a significant spread in the relative fiscal position of SNG units. Generally speaking, involuntary or non-chosen differences are referred to as fiscal disparities.

Category A concerns resource equalization: taxable resources depend strongly on the geographic position of government units in the national territory (periphery or proximity of urban areas and economic centers), on the kind of economic activities or clusters, and on communication networks. Within an open market economy, SNGs cannot influence these characteristics, thus they must be treated as exogenous variables.[5]

Category B refers to the provision of local public goods and services at standard levels that are fixed by higher government tiers – the mandated functions. It raises the issue of correspondence between decision makers, beneficiaries and payers (Oates, 1972: 34): with the motto "he who decides should also pay", cost differentials are paid by the government layer that determines the standards. When this is not the case, the issue of needs equalization comes to the heart of the political agenda.

Category C deserves careful consideration of the possible origin of expenditure needs/ costs disparities. Cost disparities in input factors very often fall outside the SNGs' decision-making competence and should thus be taken into consideration for equalization. Considering needs disparities is more delicate because it may be problematic to link needs directly to the sheer increase in the volume of production or the number of beneficiaries.

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[4] This is also the position of the Expert Panel on the reform of Equalization in Canada: "Expenditure needs should only take into account differences that are not under the control of governments". However, the Expert Panel concluded that "this is very hard to establish with precision and can vary from province to province", one of the arguments that led them to abstain from considering expenditure needs (Vaillancourt, 2007: 48).

[5] In the long term, one can argue that SNGs can increase their attractiveness for activities and newcomers through targeted fiscal operations. One could consider that a marketing of this sort is a choice variable in SNGs' hands and therefore falls outside equalization. However, if on the expenditure side local attractiveness depends on the SNGs' ability to provide specific services, on the tax side, this raises the controversial question of tax competition. Whereas the decision to reduce local taxation lies in local hands, the final result depends in fact on the relative position of each SNG compared to its rivals – a situation that is outside the control of a single local jurisdiction. The relation between equalization and tax competition is presently a disputed issue.

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Box 1 Sources of fiscal disparities
A. Differences in the access to resources (Oakland, 1994). It takes two forms: (i) differences in the income and wealth of community residents, or (ii) differences in communal property and/or natural resource endowment. Also: differences in SNGs' taxable resources (Dafflon, 1995); tax bases (Gilbert, 1996); taxable resources per head (King, 1997); economic position and opportunity (Dafflon and Vaillancourt, 2003); territorial distribution of the unequal tax bases (Bird and Vaillancourt, 2007: 260).
B. The amount of mandatory public goods that the SNGs must provide for exogenous reasons (Gilbert, 1996); needs per head (King, 1997). Also: differences in the number of units of standardized service required per capita owing to demographic reasons: age structure, different participation rates in social programs by persons of different ages (Bird and Vaillancourt, 2007: 265). Cost differences per unit of mandatory public goods (Dafflon, 1995; King, 1997; Dafflon and Vaillancourt, 2003).
C. Cost differences due to input-output relationship (Break, 1980, cited in Shah, 1996: 102). Also: (i) differences in input costs, or (ii) the fact that some populations are more costly to serve than others (Oakland, 1994). (i) Cost differences per unit of standardized public service (due to climatic or geographic features, density or distance factors, or (ii) differences in labour cost across regions (on the basis of real private sector wages) (Bird and Vaillancourt, 2007: 265); Cost differences due to the natural conditions of service areas and the composition of the population (Break, 1980). Differences (i) in the quantity and composition of input that is necessary for producing the public service, (ii) in factor or input prices, (iii) in physical characteristics (environmental factors), and (iv) in the socio-demographic composition of the SNGs' residents (Reschovsky, 2007: 402). Economies of scale in the service provision (Dafflon, 1995; Dafflon and Vaillancourt, 2003).
D. Differences due to specific tastes of residents in the various SNGs or to policy decisions at the local level (Break, 1980); Local preferences either for optional services or for quantities or quality above the minimum standard level in the provision of mandatory services (Dafflon, 1995; Gilbert, 1996; Dafflon and Vaillancourt, 2003).
E. Differentials attributable to SNGs' with respect to federal transfer payments (Break, 1980); Local preferences among different forms of taxes and between taxation and user (Inman and Rubinfeld, 1996).

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Differences under D and E result from local preferences and hence they need not be compensated by any kind of equalization or transfer payment.

If this rationale for equalization is accepted, the next and immediate question is whether revenue and expenditure needs equalization should be distinct. Equalization policies introduced in the seventies or before usually combined revenue and expenditure disabilities in one measurement formula. Today the trend is for separation. With different evolutions in taxation and decentralized functions, the political economy of equalisation is nowadays faced with four situations: SNG units with high tax potential could also have higher expenditure needs; but also high potential low needs; low potential high needs; and low potential low needs. A unique formula combining tax potential and expenditure needs cannot answer the four situations. The separation of revenue equalization from expenditure needs equalization must be observed.

2 REVENUE EQUALIZATION

Over the last twenty years, revenue equalization has taken such a wide variety of arrangements that organizing a coherent comparison is a challenge. In practice, the level of redistribution achieved depends on the equalization formula, but also on the effects of the ceiling and floor provisions, the generic solution and, more fundamentally, on the definitions of tax bases used to calculate the entitlements (Smart, 2004: 197). In this section, we present a schematized approach to revenue equalization with the help of a graphical tool that allows most of the specific schemes on this topic to be represented and thus easily compared with one another (Dafflon and Vaillancourt, 2003). There are four issues to be addressed, illustrated in Figure 1: measuring the fiscal capacity of SNGs, designing and calculating the equalization formula, funding the equalization policy and determining the target level of equalization. The objective here is to organize the theoretical arguments in order to sequence the fundamentals in a coherent way.

2.1 Measuring fiscal capacity

Measuring the fiscal disparities between SNGs, or setting out a benchmark indicator of their revenue capacities, along the horizontal axis on Figure 1, is the first problem. Measurement is not easily separable from the objective, and the indicator components often directly influence the calculation of the equalization entitlements. The basic concept is thus formulated: "jurisdictions with higher-than-average capacity should receive less (pay more); jurisdictions with lower-than-average capacity should receive more (pay less)". In Figure 1, average capacity, however defined, is given a value of 100. For simplification, the "poorest" jurisdiction is given a value of 30.

Of course, the concept is easier to explain than to implement. An overview of the theoretical literature indicates that there is no proper answer to this technical and politically sensible question. While a comparison of best practices shows that they are numerous, each one can claim good reasons to be the best, depending on whether "best" reflects the judgment of public finance economists, macroeconomic analysts, politicians, the winning or the losing jurisdiction(s). However, despite the present fuzzy situation, there is a general agreement between scholars and politicians that the data series used for measuring capacity should have the following characteristics:

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- precise and stable over a range of several years;
- not susceptible to manipulation by decision-makers;
- easily verifiable by all government units and parties involved in the equalization process.

Figure 1   A stylized representation of a revenue equalization scheme

Index of per capita public revenue of SNG
before and after horizontal (H) / vertical (V)
equalization
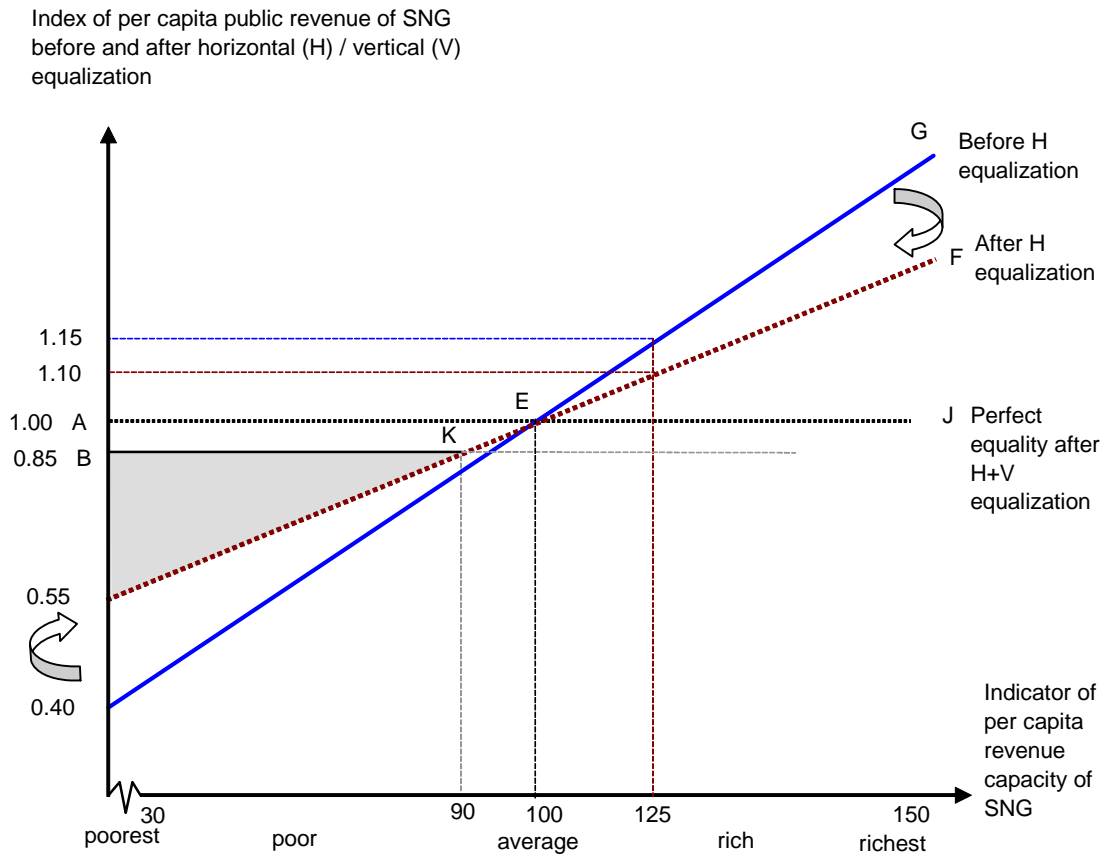
Source: Dafflon and Vaillancourt, 2003: 401

In order to implement equalization programs, policymakers require accurate measures of the fiscal condition of SNGs. Such measures are needed to determine whether disparities justify action and to design the appropriate equalizing formula (Ladd, 1999: 37). There are two schools of measuring the capacity of government units. One is based on macroeconomic figures, such as the GDP or the national revenue, calculated per government unit and per capita. The other is derived from the tax system with two alternatives: total taxable resources (TTR), or the use of a representative tax system (RTS) for an approximation of taxable capacity.

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Box 2   Introducing RTS

[1] Selection of the SNGs' taxes which will serve for the calculation of tax capacity.
Which taxes and sometimes other revenue sources shall be taken into consideration? Using several taxes is usual but requires technical adjustments since tax bases from different tax sources cannot be simply added (Gilbert and Guengant, 2001: 65).Too many taxes create complexity, are costly to manage, lack transparency, cause iterative and endless negotiation on the range of taxes to be included in the calculation and the weight attributed to them (Bird and Slack, 1990; Wilson 2007: 350-352).)

[2] Calculation of the per capita yield of each tax, with reference to a standard tax rate (t*).
A "representative" result is obtained with the use of a standard tax rate schedule t* and not the rates applied in individual SNG. With t* and the same adjusted tax base, the calculation takes into account the potential tax resources of each SNG. There is no need to bother about the combination of taxes established at the sub -national level according to specific circumstances or preferences or political bargaining, nor about the question of benefit versus non-benefit taxation.

[3] Decision on the number of years to which the calculation applies.
The annual yield of a single SNG's taxes, even at t*, can be irregular depending on which sources of taxation are considered. Discontinuity in tax capacity indicators results in the variation of the annual amounts received or contributed. This "disturbing" effect brings uncertainty in SNGs' budgeting and planning. Continuity and predictability in the relative position of individual SNGs is essential. A longer period of calculation can smooth annual variations.

[4] For each tax source, calculate the "tax index" (TI) of local government "i" for tax "T".
Compare the results obtained for each SNG to the reference tax yield, normally the average value obtained for all SNGs. This comparison is at the core of the system. It permits the ranking of SNGs above or below average for a particular tax, thus giving the relative position of each government unit. The average tax yield, which corresponds to [average tax base B* × t*, pc], can be given the reference value of 100 points (E in Figure 1).

[5] Calculate the weighted indicator of tax potential (ITP) for each SNG by combining the series.
With several tax sources and as many series of SNGs' tax indices, the arithmetic for combining the series into one is not straightforward. The obvious step is to consider each of them in proportion to the total potential yield. But in practice "tax index" series are sometimes given weights that combine this with criteria such as volatility and risk. For example, the real property tax and the tax on motor vehicles have a reputation of delivering a reliable yield. On the contrary, taxes on mobile factors (such as the corporate profit) involve more risk (delocalization, tax competition, external shock, recession). The alternative view is that those tax yields are returns on investment resulting from SNGs' own efforts to enhance their local attractiveness. This category should weigh less in the average calculation, it is argued, as a reward (or an incentive and a mutual insurance) for SNG policies in a "more risky" environment.[6]

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[6] The theoretical relation between risk-sharing arrangements and equalization belongs to the second-generation theory of fiscal federalism (Oates, 2005: 364). One important issue is whether risk sharing should be a federal or a SNG program if the regions differ in terms of incomes or exposure to external shocks. Under such circumstances, Persson and Tabellini (1996) show that vertical programs tend to oversupply, while horizontal programs tend to undersupply insurances. For an overview of the question, see Von Hagen (2003: 382) and Oates (2005:364-366).

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For Barro (1986) and Boothe (1998), macro type indicators such as GDP per capita, national revenue calculated per government unit and per capita are more adequate methods than RTS and less susceptible to distortion which occurs when SNGs continuously adjust their tax system for competition, redistribution or to attract equalization benefits. The system is simpler and less costly (Wilson, 2007: 339). But for Aubut and Vaillancourt (2001) macro indicators serve an objective of redistribution rather than equalization: instead of equalizing the capacity to provide comparable levels of public services at comparable levels of taxation - to use the Canadian definition - they attempt to level per capita national income in the SNGs. Pros and cons of macro formulas for equalization versus RTS are examined in Wilson (2007). Switzerland is an interesting case in this respect because the 2008 new equalization system abandoned a macro indicator (national revenue per government unit per capita) for a RTS measure for two reasons. (1) Differences in the cantons' indices of financial capacity are too important according to whether the calculation is based on GDP or the national income (per government unit, per capita). Each data series mirrors the openness of the cantons' economies and mobility in a completely different manner.[7] Macro indicators are not sufficiently reliable as most economic parameters are characterized by geographical externalities. (2) The conceptual argument is that the measure of the cantons' capacity should reflect their ability to generate tax revenues only and not the state of their economy in a broader sense. If one considers some recent European experience in revenue equalization (Färber and Otter, 2003) one can find that recent references are almost exclusively to RTS for very similar reasons.

2.2 Equalization formulas

Designing the equalization formula is the second issue. In Figure 1, the line DEG "before equalization" represents SNGs' per capita tax yields according to the origin principle. Any equalization formula would have to give more to "poor" jurisdictions than they would receive following the origin principle and "rich" jurisdictions would receive less, something along the CEF line. The equalizing performance is represented by the distance between lines DE and CE for beneficiaries, and between EG and EF for the contributing jurisdictions. Thus, for example, for the poorest SNG with a fiscal capacity of 30, equalization increases public revenue per capita from 0.40 (D) to 0.55 (C), but for a rich SNG unit with a capacity of 125, equalization reduces its available revenues from 1.15 to 1.10. A balanced solution with horizontal (H) equalization requires that the amounts received (represented by CDE) and contributed (EFG) coincide. The importance of equalization depends on the formula, which gives the position of the slope CF around the central point E. Several formulas are possible, each with different consequences in terms of distributing the burden or the benefits of equalization between SNG units in each group.

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[7] Remember that in Switzerland, the cantons are very small SNGs in surface (km2) in international comparison. Distance from one cantonal capital city to another is on average less than 50 kilometers. Thus, residence in one canton and daily commuting towards another canton for work is frequent. The territorial distribution of income is very different for the geographic origins of the domestic product.

Box 3   Possible revenue equalization formulas

Revenue equalization formulas always integrate the measures of capacity and thus give the extent of solidarity. How much "high capacity" jurisdictions have to contribute and how much "low capacity" jurisdictions can claim is not a question of economic objective only. Policymakers seek to understand the equalizing mechanism in order to be able to choose between a sophisticated but not very readable formula and a simpler and more accessible but perhaps less precise one.

In horizontal equalization, a possible formula for the calculation of equalizing transfers (contributed or received) takes the following form:

(1) $TC_i = \dfrac{\left(P_i \times \left[ITP_i - 100 \right]^{\alpha} \right)}{\sum\limits_{i=1}^{n-m} \left(P_i \times \left[ITP_i - 100 \right]^{\alpha} \right)} \times M \times K$ for contributing SNGs and

(2) $TB_i = \dfrac{\left(P_i \times \left[100 - ITP_i \right]^{\alpha} \right)}{\sum\limits_{i=1}^{m} \left(P_i \times \left[100 - ITP_i \right]^{\alpha} \right)} \times M \times K$ for beneficiary SNGs

There are N SNGs of which m have an indicator of tax potential (ITP) lower than average (at 100 points) and (N-m) have ITP indicators equal or higher than average. M (money) is the total available amount in the equalization fund. In equation (1), SNGs with $[ITP_i > 100]$ contribute in proportion to their population (P_i) multiplied by the difference between their own ITP and the average; the higher their financial capacity, the more they contribute. The inverse is verified for beneficiary SNGs in equation (2). K is a coefficient that permits to balance the contributions from high-capacity SNGs to low-capacity SNGs over the reference period. The formula is "proportional" if $\alpha = 1$. Increasing α reinforces the equalizing effect. Within the group of SNGs with $[ITP > 100]$, the higher α, the more top-capacity SNGs will have to contribute to the equalization fund. Within the group of SNGs with $[ITP < 100]$, the lower the SNGs in the ranking, the more they receive. α in equations (1) and (2) need not be the same. Other formulas are studied in Dafflon, 2007: 386 Dafflon and Mischler (2007: 73-84).

2.3 Funding equalization

The third issue concerns the source and the importance of revenues that are to be shared and redistributed. Since beneficiary jurisdictions are different in size and population, the redistribution must take into account the population (size) of each jurisdiction and thus is calculated in relative terms. This is accounted for on the vertical axis by using the variable of per capita revenue. Along the line AEJ, the beneficiary jurisdiction receives exactly the average amount of public revenue per resident, represented by the value 1.0 point. The basic questions are which revenue (tax) sources are to be shared and according to which decision procedure? Note that the starting point can also refer to the initial assignment of revenue sources to SNGs: in this case, the basic questions are whether block grants or revenue sharing should be added to local own resources if the latter are insufficient, and if yes, in which form? The initial effective per capita resources of SNGs before equalization is represented by the line DEG. The "poorest" government unit obtains, say, only forty percent of the per capita national average at D; the "richest" get a per capita amount that corresponds to G, well above the average index of 1.0 point. The fundamental question of the first

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issue is: does the unit-by-unit initial per capita endowment along line DEG need a correction because it results in too large fiscal disparities? In the affirmative, the second question is how to finance equalization. Several answers are possible, each with pros and cons. Three of them are discussed below.

(1) The amount is financed out of the general resources of the paying unit(s) and established in their annual budget. This is a very flexible solution. Yet it has three main defects: (i) recipient governments are not sure that they will receive a comparable amount (in real value) from one year to another, which renders any medium term planning and policy-making very difficult; (ii) budgetary debates are subject to ad hoc political arrangements, with unstable contours by definition; (iii) the amount of equalization is at the mercy of the "high capacity" government units which will probably attempt to revise downwards their contributions.

(2) The method of calculating the equalization amount is explicitly stated in the constitution or in a law in the form of revenue sharing from at least one but preferably several specific tax sources used at the central level (vertical) or attributed to SNGs (horizontal). The advantages of this solution are: (i) with a specific legal foundation, the political debate on "how much equalization" takes place when the constitution is amended or the law is passed, and not on an annual basis when the budgets are decided; (ii) it avoids important variations in the available amounts if the tax sources are sufficiently diversified and chosen in such a way that macroeconomic cycles are partly alleviated. The drawbacks: (i) revenue sharing from specific taxes might be subject to the fluctuation of the economy, following ups and downs with perhaps pro-cyclical results; (ii) using only one tax source for sharing purposes may result in the government units not collecting it as vigorously as if it was their exclusive source of revenue since collection efforts reward in part other government units through the equalizing transfers.

(3) It is possible to solve these problems by establishing an equalization fund fed by the revenues of several tax sources and anchored in the constitution or the law. The fund serves as the source of yearly equalization payments but also contains a "rainy-day" element. Such a system holds not only the two advantages described above but also a third one: it can smooth equalization payments through leaving in the funds a part of the contributions in good years and tap this reserve in bad ones. This inter-temporal stabilization is the added value of this option.

The three solutions above do not separate vertical and horizontal funding. They have to be revisited to allow for this distinction. Solution (1) is not suitable for horizontal equalization because it requires annual budgetary negotiation between those SNGs which contribute to equalization and the beneficiary SNGs. In case of conflict, some form of arbitrage by a higher tier is necessary, a situation which brings verticality in the process. Solutions (2) and (3) can be truly horizontal but require the prior intervention of a higher government tier in order to write in the constitution or the law the obligation for SNGs to participate in some horizontal equalization scheme and the criteria for receiving equalization transfers. Of course, this top-down process need not be imposed on the lower tier. SNGs should be involved in the design of the horizontal equalization policy: after all, it is the SNG units that will later support the burden or enjoy the benefits of this policy. If co-participation in the design and decision process is not promoted, then the equalization policy becomes a merit good that is

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implemented top-down. Solution (3) is very attractive from the point of view of macroeconomic stability. With the pressure of globalization and tax competition, SNGs with higher financial bases have no longer the security to remain in an advantageous fiscal position for years. They would use their budget surpluses for the consolidation of their own position or for feeding their own rainy-day fund rather than to contribute to horizontal equalization. Theoretically, an equalization system can also serve this purpose. But the two processes do not have the same insurance characteristics. A SNG owned rainy-day fund is analogous to a system of capitalization, whereas a rainy-day element within the equalization scheme, as in solution 3, corresponds to a system of mutual insurance: SNGs exposed to adverse revenue shocks in the short run would see their relative position modified in their favor relative to other SNGs facing better fiscal conditions (Smart, 2004). Yet the argument of "risk-sharing" or "risk-pooling" against external macroeconomic shocks (von Hagen, 2000: 273) is disputed (Usher, 1995: 94; Buettner, 2002) and could not convince "high capacity" SNGs to foster fiscal solidarity. This question is without doubt the principal challenge that horizontal resource equalization will face in the next years.

2.4 Does equalization need additional limits?

The fourth issue is whether further limits to the redistribution formula should be introduced. In Figure 1, E represents an exactly neutral position: with an average financial capacity and average *per capita* tax revenues, a jurisdiction at this point would neither pay nor receive any equalizing amount. But the central point need not be at E. Other equalization targets are possible, and often controversial. Two specific points must be noted.

First, it can be debated whether jurisdictions with just below average financial capacity should benefit from equalization. One could argue on financial, political and equity grounds that only jurisdictions below a certain level (e.g. ITP<90) should qualify. Financial considerations could be one argument: at 90, the triangle CDE would be smaller, which means smaller contributions by richer SNGs. But more crucial are political considerations; at what value does fragmentation of the nation into poor and rich jurisdictions endanger national coherence. Or, put differently, how much poorer is too poor?

A second related question is illustrated with the triangle BCK. The resources available after applying the horizontal equalization formula are those corresponding to line CE (above DE): the poorer a jurisdiction, the more it receives. But the horizontal equalizing payments in the example can be argued to be far from giving poor jurisdictions sufficient resources, increasing the resources for the poorest SNG from (in our example) 40% to 55% of the national average. Should they be augmented, what would be the appropriate limit? The example in Figure 1 ensures that poor jurisdictions receive equalizing payments so that their revenue endowment reaches at least 85% of the national average, along line BK. Since "rich" SNGs already pay EFG to cover CDE (equal by construction), financial resources for paying BCK come from the center through a vertical equalization scheme. Is 85% a proper level? Fragmentation, equity and incentives must be considered. In Figure 1, beneficiary jurisdictions have no incentive to take initiative for their development if they are satisfied with public spending compatible with 85% of the national average per capita

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public revenues, and if they have no preference for autonomous revenues rather than transfers. In practice, the difficulty is to design an equalization formula that gives sufficient and significant solidarity funding without disincentive for economic or more specifically revenue base growth (Zimmermann, 1999: 168).[8]

3 EXPENDITURE NEEDS EQUALIZATION

Currently, there is a strong debate both in theory and practice about expenditure needs equalization (Färber and Otter, 2003; Kim and Lotz, 2007). The discussion is about (i) its necessity; (ii) the functions to be considered, (iii) the disparities that have to be taken into account: needs, expenditures or costs; (iv) the method for measuring needs, and (v) the consequences of the equalization policy in terms of efficiency, allocative neutrality, incentives, and equity. The distinction between differences in needs, costs, expenditures or need-capacity gap is far from evident and presents a great deal of conceptual and technical difficulties.[9]

This section deals with four selected problems. First, we present a stylized scheme that informs in a coherent manner the four issues parallel to those in revenue equalization. Second, we question whether cost disparities are genuine or result from SNGs' own choices, in which case they should not count for equalization. The third issue develops the argument that expenditure needs equalization should be vertical only. Fourth, we deal with the methods of need assessment.

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[8] The common reference to Zimmermann cannot easily serve since it is related to the very specific German case issued from the re-unification. Careful investigation in textbook analysis and case studies shows that the question of disincentive with too high equalization payments is not a core issue. To the best of our knowledge, we could not find substantial evidence on this issue for another country. Thanks to Alan Fenna, Curtin University for raising our attention on this point.

For revenue sharing, the disincentive problem is very debatable. Take the Swiss case. Art. 6 of the federal law of October 2, 2003, indicates that after resource equalization, the cantons' tax revenues + equalization transfers should aim at 85% of the national average. The explicative Message of the Federal Government to Parliament gives 85% as a reference but NOT the fixed target and also warns that this percentage will not necessarily be attained. Yet the Message does not contain a single line on a possible disincentive effect (Federal Parliament, Feuille Fédérale, 2002: 2245 and 2337).

This can be understood when one introduces the time lag in the calculation process. For example, for the 2011 revenue equalization transfer system, the fiscal years that serve as reference are 2005, 2006 and 2007. This means that if a canton would behave strategically to influence the revenue equalization system, a cantonal Parliament would have to start making strategic tax choices in autumn 2004, when preparing the budget 2005, yet without knowing the fiscal choices and strategies of any of the other 25 cantons. In addition, the exercise should be repeated for three years. It means at the time of the first decision 25x3 = 75 + 2 (the canton's budget for 2006 and 2007 is not yet known) unknown variables. I take it for a certainty that no politician (risk adverse or not) will engage in such strategic speculation with this time horizon. If one considers the result, and not the anticipation, the time horizon creates the same problem. Admit that the 2011 equalization already influences the 2012 fiscal position of a canton. The first time that 2012 will be referred to in the equalizing formula will be 2018 (the time lag is six years with the actual system, based on a three years average). Again, I doubt that disincentive effects can be evidenced and measured with this span of time.

[9] See Shaw (1996) for a discussion of this distinction in theory and practice. One important difficulty faced in most countries is the scarcity of databases accounting for cost factors. This is a recurrent observation in Färber and Otter (2003) for the case studies in European countries.

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3.1 Four issues in a stylised scheme

Figure 2 presents a stylised expenditure equalization scheme. As with Figure 1, four issues are questioned.

[1] First, which SNGs' functions are considered for equalization? If not all, then the vertical Y-axis would be drawn only for eligible expenditures. As in Figure 1, the monetary measure is in *per capita* terms.
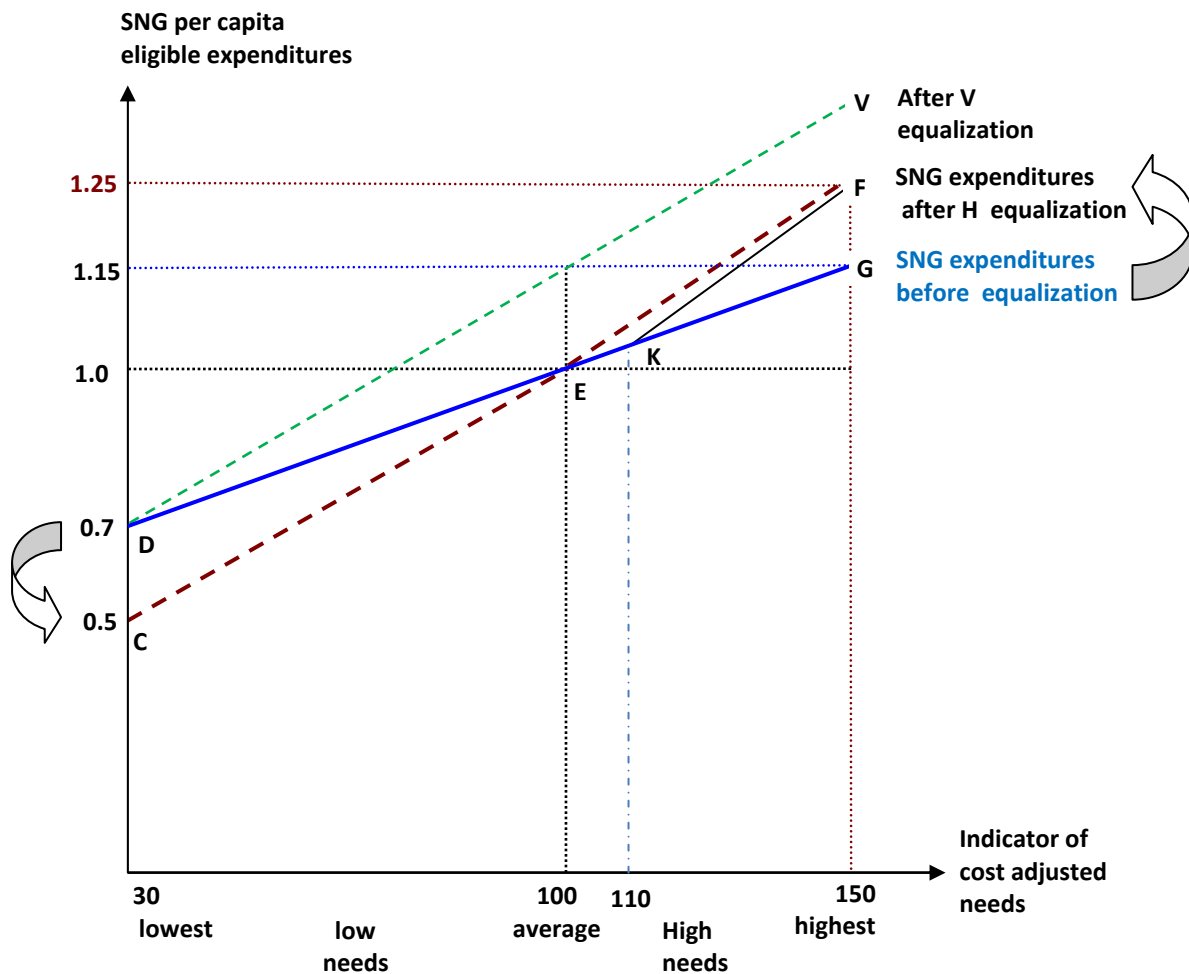
[2] Second, how should we rank SNGs for expenditure equalization? In answering this question recall that average *per capita* expenditure differences in providing a public service reflect two factors: need differences (Box 1, B above) and cost differences (Box 1, C).

Plausible factors related to needs differences are socio-demographic: the share in the total population of various age groups such as infants (post-natal care), elders (health care) and school age children, special needs, either temporary i.e. new immigrants (language skills acquisition, integration into society) or not e.g. aboriginal population. The relevance of many of these indicators depends on the role SNGs play in delivering specific public services and their share of expenditure thereof.

Various factors determine cost differences. Some are natural ones that vary with geography such as climate (snowfall, heavy rain), frequency of natural disasters (floods, earthquakes), topography (mountainous or desertic regions) and distance (remoteness from providers of inputs into public services). Others are demographic such as population density/urbanization. The difficulty is to estimate in monetary units the impact of such factors on costs. For many public services, labour is an important factor of production. Labour costs should be calculated using private sector wages for equivalent inputs and not on the basis of public sector wages which may reflect such political factors as the government's political philosophy or the relative strength of workers' unions (Courchene, 1998; Reschovsky, 2007: 402). But if e.g. snow removal is done only by public maintenance crews, then how does one distinguish between true differences in costs and the relative strength of unions in the SNGs, assuming that each sets its own wages (not set centrally)?

On the horizontal X-axis, we use a cost adjusted needs index. What does this mean? Let us assume that we have two regions with identical revenue capacity, one (A) with a proportion in its population of 10% of older individuals in need of specific health services and the other (B) with 30%. In terms of needs, (B) has higher needs. If the cost per % point of older population is 1 monetary unit, then (B) should receive 20 more units of resources than (A) to be able to provide the required services without having to levy more taxes than (A). But if (A) is more mountainous than (B) and because of this the cost of getting the services to the older residents is higher, say 1.5 point in (A) and still 1.0 in (B), then the difference in cost adjusted needs is only 15 [(30x1)-(10×1.5)]. Adjusting for costs changes the relative position of SNGs on the X-axis in Figure 2.

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Figure 2   A stylised representation of an expenditure

SNG per capita
eligible expenditures

V   **After V
equalization**

**SNG expenditures
after H equalization**

**SNG expenditures
before equalization**

1.25 .... F

1.15 .... G

1.0 .... K
E

0.7 D

0.5 C

30
lowest   low
needs   100
average   110
High
needs   150
highest

**Indicator of
cost adjusted
needs**

Source: adapted from Yilmaz S., Vaillancourt and Dafflon (2012: 123)

[3] The third issue is the equalization formula. Without equalization "needier"
jurisdictions to the right of E spend less per capita than with equalization and ''un-
needy'' ones to the left of E more. Note that per capita expenditures are for the
population as a whole and not for the specific populations (older, immigrants…) that
may be deemed to have specific needs. Horizontal equalization in this context means
than un-needy SNGs spend less overall for their residents after equalization and pay
for residents of other jurisdictions. Thanks to the equalizing grant, needier
jurisdictions can now spend more to better satisfy the needs of their residents without
additional tax effort. Thus, for example, for the neediest jurisdiction with a cost
adjusted needs indicator of 150, equalization increases expenditures per capita from
1.15 to 1.25, but for an un-needy region with a needs indicator of 30, equalization with
its diversion of revenues reduces public expenditures it can finance from 0.7 to 0.5. A
balanced solution with horizontal (H) equalization requires that benefits and costs
coincide. The importance of equalization depends on the equalization formula, which

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gives the positions of the lines CE and EF around the central point E. It is conceivable that the slopes of these two lines are not the same.

[4] The fourth issue is whether an equalization policy would introduce further limits to the redistribution formula. In Figure 2, E represents an exactly neutral position; a jurisdiction at this point would neither pay nor receive any equalizing amount. But the central point need not be at E. Other equalization targets are possible. It can be debated whether jurisdictions with just above average needs should benefit from equalization; one could argue that this would be a disincentive to become more productive[10] or that measurement errors of needs are upward biased and thus that a cushion of say 10 % (e.g. 110, KF instead of EF in Figure 2) should be used. The equalization budget is also lower (KGF <EGF).

3.2 Genuine cost disparities versus political choices

We noted earlier in Box 1 that differences resulting from local choices (D and E) should be ignored. Figure 3 illustrates the difficulty of drawing the border line between genuine disparities and local preferences or management abilities that result in expenditure or cost differences (Reschovsky, 2007: 401-404). Scenario 1 relates to economies of scale and the related size of SNGs. Scenario 2 illustrates the difficulty of distinguishing between genuine higher production costs and X-inefficiencies.

*Scenario 1: Impossible economies of scale or reluctance to cooperate*

The jurisdictions face the usual simplified U-shaped production function for a local public good S (Reschovsky, 2007: 403). Start with the production function PF1 for SNG1. Resident beneficiaries pay for the service on a quid pro quo basis (for simplification: one resident, one unit of local service S, one tax unit - no spillover). The efficient solution is at E for a total of $N_{optimal}$ residents served. The E solution shows two key results: the minimal average cost at AC_1 and the total local public expenditure ($0N_{optimal}EAC1$) at the optimal level for PF1.

Consider SNG2: assume it has an identical production function PF1, but only N_2 residents. Average cost is AC2. Why is this so? There are three plausible answers.
(1) The number of beneficiaries is low because of socio-demographic characteristics of the resident population in SNG2.
(2) SNG2 is not in a position (for topographic reasons or distance) to cooperate with neighbouring SNGs in order to increase the number of beneficiaries towards $N_{optimal}$.
(3) SNG2 (for reasons of differences in preferences or the desire to remain autonomous) is not willing to cooperate with neighbouring SNGs?

In situations (1) and (2) cost differences should be considered in equalization because differences in unit costs do not result from a local decision. With (3), SNG2 should support the fiscal consequences of its decision. No equalization should make up for the difference in costs.

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[10] In this domain also (see footnote 8) it is not easy to gather case study evidence that expenditure needs equalization could result in undesirable incentive (Kim and Lotz, 2008: 16). The OECD (2007) expressed some concerns about this issue related to cost equalization and productive efficiency.

Figure 3   Production functions for a sub-national public expenditure
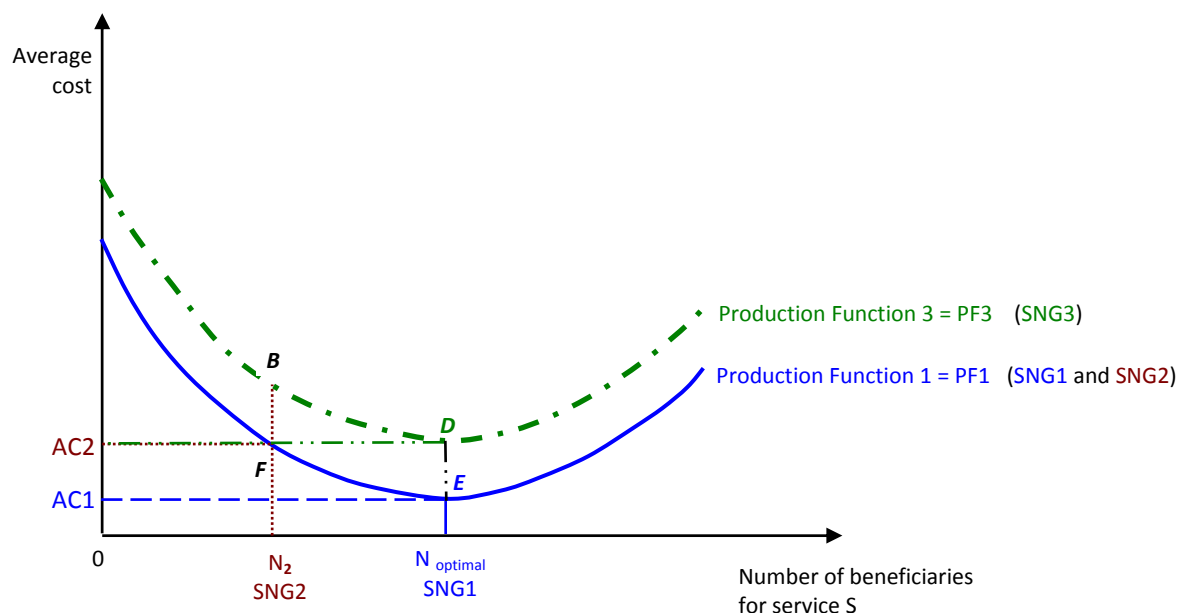
Scenario 2: Genuine cost disparities versus X-inefficiencies

Consider a third local unit, SNG3 with production function PF3 characterized by higher production costs. Even with the optimal number of beneficiaries served, SNG3 cannot provide an equal level of service S at the same tax price [$N_{optimal} D > N_{optimal} E$]. If the cost difference AC1AC2 is a genuine disparity, then the situation suggests some kind of equalization so as to restore the fiscal balance. This would not only reduce the average cost AC_2 of service S that residents in SNG3 face, but it also reduces fiscally induced migration, thereby enhancing efficiency (Bird and Vaillancourt, 2007: 262). But does PF3 represent the real costs or does it hide X-inefficiencies? How can one interpret the difference *ED* in average costs if SNG1 and SNG3 serve the same number of beneficiaries? Can SNG3 do anything about higher costs?

Figure 3 thus identifies situations that need to be examined if expenditure equalization is on the political agenda. Relative cost differentials have to be clearly traced and identified. This is not simple; it requires information for several SNGs about the number of beneficiaries and the production function of each public service selected for equalization in order to set the standard cost function within a reasonable range. Such information is not always available (Dafflon and Mischler, 2008: 183-185). Take the example of primary education. Suppose SNG1 and SNG3 buy the same number of books for the same number of pupils. If SNG3 faces higher unit costs, is it because it overspends on fancier books, tries harder to keep up with new pedagogical trends, or teaches a different language group? Is SNG3's choice to follow a new pedagogical path an item of laboratory federalism, a decision taken in coordination with other SNGs (in this case, equalization is acceptable), or is its own decision following the specific tastes of the constituency (no equalization)? If language is different, is the higher government concerned with the protection of minorities (equalization is acceptable) or are language differences not an issue (no equalization)? Are mixed

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language or mixed religious classes to be mandated either centrally or by SNGs that pay horizontal equalization? Not only is it difficult to isolate variables that affect costs from variables that indicate differences in public good preferences, but the answers and therefore the justification of equalization belong to the realm of politics.

Equality of per capita expenditure, using SNGs' population, is a frequent but not necessarily an adequate measure of causality (Dafflon and Mischler, 2008: 183-185). If one can clearly identify the number of beneficiaries of the service, then the average cost is known. But such information is not always available. The problem of measuring public outcomes is another issue. Take the textbook example of snow removal to guarantee road security. Comprehensive security corresponds to a "no accident" situation, but the link of this measure with public expenditure and average costs is not clear. Road length is an alternative. Yet, this is an input measure, not a target, and a debatable one too. Expenditure needs can be determined in relative terms only if causality is clearly traced and identified - but this is not as simple as it sounds because it requires information about the production function of each local public service selected for equalization and the number of beneficiaries. And for each service, an adequate number of local production functions must be identified in order to fix the standard within a reasonably representative target.

Another challenge is the simultaneous presence of the two scenarios, but then, questions follow questions in a domino-like sequence. Since AC_2 is the same for LG2 (at F) and LG3 (at D), there is no reason to differentiate equalization based on average costs: relative equity is respected. Yet LG2 could realize economies of scale by collaborating or amalgamating with other jurisdictions, whereas LG3 has no possibility to lower its (genuine) costs. Who determines when cooperation or merger between SNGs should be required to lower average production costs?

In sum, there is no practical way to state beyond doubt whether situations *F, B* and *D* in Figure 3 represent genuine cost differentials or result from SNGs' own choices. From this perspective, any policy of expenditure-based equalization is a tremendous challenge. Since expenditure needs equalization is complex and cannot be separated from political value judgments, should one renounce, as the Canadian Expert Panel on Equalization recently proposed (Groupe d'experts, 2006: 46; Boothe and Vaillancourt, 2007: 48)? Or, should one try to design expenditure needs equalization as best as one can with imperfect knowledge, information and data (Boex and Martinez-Vazquez, 2007: 291; Reschovsky, 2007)?

3.3 Horizontal versus vertical equalization

We have not yet considered whether equalization should be horizontal or vertical. In Figure 1, surface CDE = EFG implies that equalization is horizontal, between contributing and beneficiary SNG units; CBK, if it exits in total or partially, is vertical. In Figure 2, a balanced solution (around E) with horizontal equalization requires that benefits and contributions coincide. But the solution could also be vertical, centrally funded.

Horizontal revenue equalization is typically a "Robin Hood" solution. This is less conceivable for expenditure needs equalization: three arguments against can be given (Dafflon, 2007: 370-371):

(a) Horizontal expenditure needs/costs equalization would imply that SNGs with relatively low needs/ costs of service provision accept higher tax prices which allow subsidizing of other SNGs with relatively high expenditure needs/ costs. This would distort the relative local tax prices of public services and result in allocative inefficiencies. It penalizes SNG units which cooperate or strive to ban X-inefficiencies.

(b) Horizontal equalization has no rationality for those local public services that are financed through user charges. Pricing those services means that individual beneficiaries pay exactly for what they receive. Any violation of this rule would send a false price signal and disrupt the market-like process. From the point of view of economic efficiency it is both unrealistic and erroneous to imagine that user charges based on the polluter-pays principle (for example: fees for household solid waste collection; waste water treatment) or on the user-pays principle (drinkable water) would support an equalization supplement with the argument that the costs of services vary from one jurisdiction to another. The equity argument also holds: it would be inequitable to make users in a particular service precinct pay a price in excess of their benefits in order to cross-subsidize users in another precinct, whereas the latter would thus pay charges that are below the true costs of the public service they benefit from.

(c) For services that are financed through taxes, there is an information problem. Identifying the real needs and costs that justify equalization is a tremendous challenge (Reschovsky, 2007: 400-404). SNGs' functions are countless and a "perfect mapping"[11] does not exist for most of them. In case of differences in the level or quality of services, what would be the "adequate" mandated provision (distinct from choice)? If the causes are X-inefficiencies, new management methods must be imposed (by whom)? In this case, however, the aid should be vertical because only a higher tier of government is able to foster a scheme as much neutral as possible from an allocative point of view.

If vertical equalization is selected, what should it be? Figure 2 mirrors three alternatives. [1] With EF, SNGs with needs higher than average (100) will benefit. [2] KF introduces a cushion of 10 points (see subsection 3.1 fourth issue above). [3] The constitutional argument of "equal treatment" for all SNGs can explain the third possibility, represented by the line DV. Each SNG unit has positive expenditure needs, though not of the same importance; all should benefit from equalization the larger or the higher the needs. The three solutions are linear, but need not be so. Economic arguments (budget, incentive) can guide the choice, but are not decisive; political choice is needed.

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[11] "Perfect mapping" exists when the spatial pattern of the provision of local public goods corresponds exactly to the geographical boundaries of the jurisdictions.

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3.4 Methods of needs assessment

In the economic literature, the methods of expenditure needs / costs assessment have been treated in a rather scant manner. Reschovsky (2007: 404-410) mentions "several methodologies" without much detail and groups them in three categories: estimating a cost function, estimating an expenditure equation (both qualified as "statistical analysis") and reliance on the judgment of experts. Vaillancourt and Bird (2006) proposed two criteria: (i) historical expenditure patterns using regression techniques for designing a representative expenditure system (RES parallel to RTS) or (ii) the center decides which functions and what standards – the judgment of politics instead of experts! But they conclude, joined by Kim and Lotz (2008: 17) that "what is important is not that the formula used is 'correct' but the results of applying it are politically viable"! In a seminal contribution, Mischler (2009: 76ss) distinguishes between four methods of needs assessment, distributed in two groups. Figure 4 recapitulates these approaches together with the related references from the economic literature. The first group makes use of the actual local expenditures. Using Ladd's terminology (1994: 29), it is subdivided into the regression-based cost approach (RCA) and the representative expenditure system (RES). The   ad   hoc   variables approach and the statistical aggregation of variables form the second group that does not make use of actual local expenditure data.

Figure 4   Overview of the methods of needs assessment
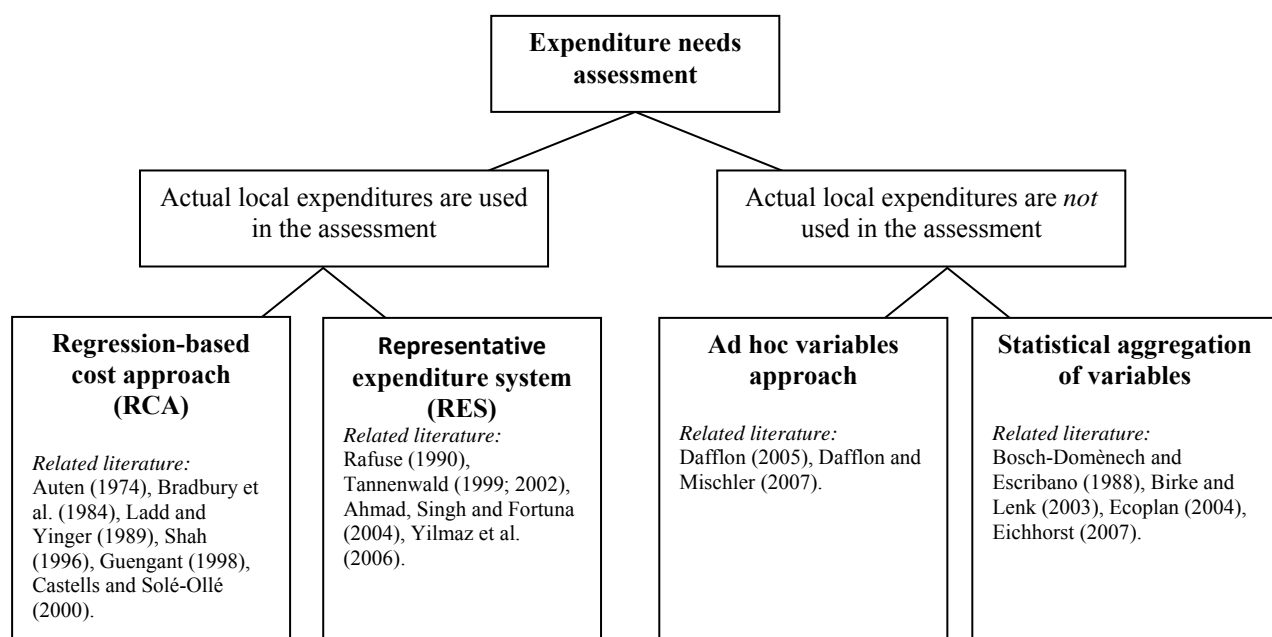
Source: adapted from Mischler, 2009: 77.

Regression-based Cost Approach
Public expenditure data are used in order to determine structural cost differences by regression analysis. The use of expenditure data requires normally restrictive assumptions about local public goods provision (Ladd and Yinger 1989; Reschovsky 2007): among others,   the service responsibilities need to be comparable and

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expenditures per quality unit of public services are assumed to be equal. The regression method tries to explain the variation of expenditures per capita. Demand indicators, input prices of public service provision and environmental variables are the explanatory variables. By inserting real values of the structural cost variables and average values for all the other variables into the regression, the model estimates expenditures per capita that vary only because of different costs of public goods provision. The relative expenditure need is calculated as an index using average values of the explanatory variables as a benchmark. The results are standardized for equalization payments.

Besides the problematic aspect of assuming away difficulties with regard to the quality of public services or service responsibilities, the challenge remains how to maintain for the variety of possible influences on local public expenditures. The specification of the regression formula is crucial and often highly dependent on the knowledge about SNGs' characteristics. They add to well-known technical criticisms (multicollinearity, omitted variable bias) about the RCA (Lago-Peñas, 2001 and already OECD, 1981):

The main advantage of this method is its ability to provide an absolute measure of local expenditure needs in monetary units by incorporating an important amount of information about SNGs. However, there are disadvantages, too. Because of technical difficulties of the regression approach, the complexity of this method rises quickly and makes indispensable decisions about equalization policy even more the issue of technicians, although the questions concerning the practical implementation of equalization are highly political.

Representative Expenditure System
A RES assumes standardized expenditures per physical workload factors. This expenditure per workload unit can be determined using average expenditures or normatively defined "necessary" expenditures. The average spending per workload unit is often considered to be the basic benchmark (Rafuse, 1990). The standardized expenditures are determined by multiplying the average spending per workload unit with the observed workloads in the jurisdictions. A SNG unit is considered needy under this approach when it faces higher standardized expenditures per capita than the average jurisdiction. If information is available, the workload factor may be weighted by an input cost index (Tannenwald 1999).

The RES approach seems to be convincing if public expenditure is caused by structural community characteristics. A good example may be the number of pupils as this is linked to expenditures on primary education. If not, the method uses basic intuition or plausibility for the selection of workload factors. Yet, for some expenditure categories a plausible relation to public goods provision through structural indicators cannot easily be established. In some cases normative standards are employed instead of average expenditures. Operational accounting standards may provide useful information about how much money SNGs should spend on specific public services. Expert evaluation to determine normative expenditure standards per workload is also frequently cited. In cases of mandatory functions, corresponding normative benchmarks may also be used.

The RES approach has an intuitive appeal and may lead to reasonable results for some tasks. Yet, the use of average expenditure as the relevant benchmark for the

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assessment of needs leads to incentive problems with regard to the distribution of a common pool of expenditures. Normative benchmarks are not discussed here in detail since they do not rely on an attempt to assess objective needs but depend on an *a priori* optimal amount of spending, often based on expert judgments or political decision.

If the equalization policy aims at reforming the system in force, both the RCA and RES approaches face the challenge of controlling for the related expenditures. If the public expenditures in SNGs' accounts already contain elements of the equalization system that must be changed, they cannot be considered without correction – removing the equalizing component from actual accounted expenditures. This obliges to trace causality, a challenging process that does not often succeed in practice (Dafflon and Mischler, 2008: 173-174).

Ad hoc Variables Approach
This approach links expenditure needs directly to particular community characteristics. Differences in needs are to be explained through "plausible" explicative criteria – "plausible" in the sense that there is a relation of causality which is acceptable and reasonable in economic policy terms: socio-demographic characteristics of the school-aged population and the expenditure needs for primary school, for example. Ad hoc variables related to (group) population may be weighted. The main argument is that needs are not in a linear relationship to the relevant ad hoc variable. A well-known example is the population density: [this?] may be associated with needs in different ways according to whether economies of scales are accessible or not (Birke and Lenk, 2003), or should account for scarcely distributed population in remote areas (Dafflon and Mischler, 2007: 197-199. To avoid the selection of the relevant ad hoc variables being driven by political priorities, the plausible relation of causality must be explicitly clarified (Bramley, 1990).

Since the ad hoc variables approach does not refer to actual local expenditures, the absolute value of expenditure needs as a monetary amount cannot be determined. It is only possible to determine SNGs relative expenditure needs. This leads to the open question as to how to evaluate the funding of the equalization program. Also, the advantage of simplicity and intuitive understanding of this method is soon brought into question when more than one variable is necessary to describe the expenditure needs per function; the variables have to be weighted but the method provides no criteria for such an exercise.

Statistical Aggregation of Variables
This approach exploits the information of as many indicators as possible. A principal component analysis can be applied to reduce the information for explaining the most important part of total variation of expenditure needs. But the complexities arising from an increasing number of variables make this interpretation a difficult task. This approach is only possible if the considered variables are strongly correlated (Bosch-Domènech and Escribano, 1988).

By using the standardized scores of the most important components as weights for the considered variables, one can determine the index of relative needs. If more than one component is applied, the question of aggregation of those values is once more open to debate, which is comparable with the situation when ad hoc variables need to be

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weighted. Similar to the ad hoc variable approach, the statistical aggregation of variables provides only the relative position of SNG units in expenditure needs, but not how much funds are necessary to compensate expenditure needs disparities.

4   CONCLUSION

With the on-going theoretical debate on the virtues and defaults of equalization, many diverging practices in revenue equalization and limited experiments in expenditure needs/ costs equalization except the Australian case, it would be presumptuous to propose ready-to-wear solid conclusions. But a few points can already serve.

- Equalisation is about solidarity. And solidarity is normative: it is first a matter of ethical and political choices. It is not feasible to solve equalization in practice by quantitative methods only.

- The political economy of equalization offers a methodology for accompanying stakeholders (the "centre" and SNGs) in the process of transforming a concept, "solidarity", into practical policy measures, "equalization", as best as one can. Organizing four questions around the logic and the coherence of revenue equalization and expenditure needs equalization is a first step in this direction.

- The complexities of, the search of efficacy and coherence in equalization policies are not detrimental to transparency, accountability and acceptability. The first step is to agree on the nature of differences in the SNGs' public finances and to which extent they will count. The second step would be considering the separation of revenue equalization from expenditure needs/ costs equalization.

- Revenue equalization cannot be implemented without central and regional politicians taking responsibility for deciding how much, according to which criteria, to what extent and for which target equalization should take place. Of course, the final result will also depend on the financial resources available. With RTS, additional questions are the list of taxes to be considered, their structural quality, the standard rates that should apply for each selected tax and the weight given to each component in assessing the SNGs' tax potential. With several equalizing formula at hand, each design corresponds to a certain concept of solidarity.

- Expenditure needs equalisation is more controversial if only because of the difficulties in separating mandated functions from choices, in assessing needs or costs, in finding the adequate explanatory variables and adopting the adequate method of measurement. These difficulties are topped by political considerations and divergences about which functions should be considered and what are the required standards (access, costs, expenditure?) for those functions? Assessment methods are not of a sort that facilitates the econometric choice.

This paper contributes to a better analysis of equalization by organising the questions in a coherent sequence. It is not conceived as a process which delivers a final report on what-should-be-done, but as a participative step-by-step exposure of the issues and questioning which should be re-appropriated by the stakeholders in their particular country. This is essential when equalization (thus solidarity) is to be legitimated through parliamentary and democratic procedures.

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