FISCAL EQUALISATION – A CROSS-COUNTRY PERSPECTIVE

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Equalisation – pivot of decentralised fiscal policy

Fiscal equalisation is the transfer of financial resources to sub-central governments (SCG) to enable them to provide their citizens with similar levels of public services at similar levels of taxation. Fiscal equalisation can be viewed as the natural companion to fiscal decentralisation in that it seeks to correct disparities and any imbalances that may result from sub-central fiscal autonomy. Distinct fiscal equalisation arrangements first emerged during the 1940s and 1950s in a number of federal countries. Today most OECD member countries run redistributive programmes to reduce fiscal disparities. The significance of fiscal equalisation is reflected not only in its extensive use in both federal and unitary countries but also in that its objectives and procedures are often laid down in the constitution and form a central pillar of national fiscal policy. Across the OECD, fiscal equalisation transfers average around 2.5% of GDP, 5% of general government spending, and 50% of intergovernmental grants.

Fiscal equalisation is an inter-jurisdictional rather than an inter-personal redistributive programme. It is concerned with disparities between communities in access to public services rather than with differences in individual household income. (For individual income inequality, see Hoeller et al. [2012]). Although individual and spatial redistribution interact to some extent – through the progressivity of the tax system or the design of social security – their purpose and outcomes are not the same, and countries have adopted quite different patterns of individual and spatial redistribution.

Equalisation is sometimes justified on the grounds, not of productivity differences, but of efficiency in that it can help curb fiscally induced inter-jurisdictional migration and labour mobility (Boadway and Shah, 2009). However, it may also undermine SCGs' incentives for developing their economic and fiscal base. And, although it can also act as insurance against regional business cycles or asymmetric shocks, equalisation and stabilisation can conflict and are usually addressed by separate macro-fiscal approaches. The overarching objective of fiscal equalisation is inter-jurisdictional redistribution, and the main policy issues are to ensure that redistribution schemes minimise trade-offs and distortions.

While reform of fiscal equalisation was largely dormant until around a decade ago, it has gathered pace. Canada, Denmark, Italy, Mexico, Spain, and Switzerland, to note a few, have all undertaken wide-ranging overhauls of sub-national government financing. They have sought to separate equalisation from other transfer arrangements clearly and transparently, factoring in the effective needs of sub-national governments and providing them with more incentive to develop their own economic and fiscal base. While these reforms have started to bear fruit, challenges remain – particularly the demographic pressures building up in some jurisdictions more than others, or the growing concentration of economic activity in large urban agglomerations. Moreover, the on-going economic and fiscal crisis has further exposed inefficiencies in many systems and revealed the need for deeper reform. This chapter draws extensively on responses to a questionnaire on fiscal equalisation devised by the OECD Fiscal Network, sent to all OECD countries in 2006 (Blöchliger and Charbit, 2008) and partially updated in 2013.

Economic disparities across regions

Economic disparities – i.e. variations in sub-national GDP per capita or in household income – constitute the single biggest factor behind unequal access to public services across a country. They translate into differences in tax-raising capacity, which makes it difficult for some jurisdictions to provide adequate service levels. Disparities differ considerably across countries (Figure 5.1). Those with only slight disparities and little geographical concentration of economic wealth include Sweden and Japan, while countries like Turkey and the Slovak Republic show wide disparities. Between 1995 and 2010, disparities widened in most countries. While the figures yield a rough impression of how economic activity is distributed and has evolved, the use of GDP to measure state/regional and (in

particular) local government disparities can be misleading. For instance, GDP per capita values may be distorted when people live and work in different jurisdictions. Geography and the number and size of sub-national jurisdictions complicate the picture, too, as countries with more and smaller SCGs generally show wider disparities.

Figure 1. Inter-jurisdictional GDP disparities vary across the OECD

Sub-central GDP per capita dispersion, Gini coefficients
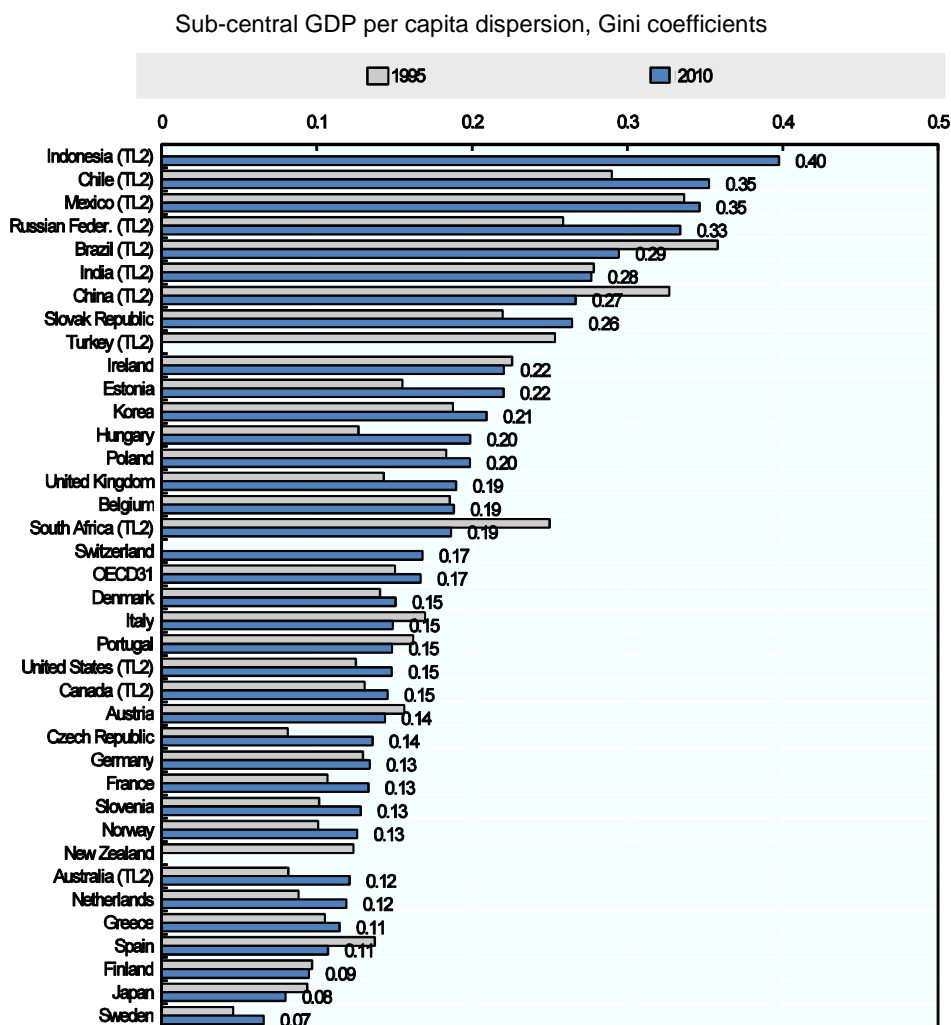
Source: OECD (2011), *OECD Regions at a Glance 2011,* OECD Publishing, Paris.
http://dx.doi.org/10.1787/reg_glance-2011-en

While differences in GDP are the main reason for unequal public service provision between jurisdictions, the cost of public services, too, is also a factor for two reasons:

- The composition of the population is not the same from one jurisdiction to another, and the cost of public services targeted at special groups (children, elderly, ill, disabled, the unemployed, etc.) are higher.

- The cost per service unit changes with geography – e.g. infrastructure in the mountains is more expensive than in the plains.

An important parameter in the cost of services is a jurisdiction's size and density of population. Densely populated jurisdictions tend to benefit from economies of scale and agglomeration. Certain services (hospitals, motorways, specialised healthcare, etc.) can be supplied efficiently only above a minimum scale, while their provision in scarcely populated or remote areas tends to be relatively more expensive or insufficient. Geographical patterns in population may affect service costs, too, as the share of the population living in rural and remote areas varies widely across countries (OECD, 2011). Overall, disparities are much narrower in service costs than in tax-raising capacity, hence the widespread preference for equalising the latter.

**How does fiscal equalisation work?**

Snapshot of equalisation systems

To correct imbalances between sub-central governments, fiscal equalisation explicitly provides greater *per capita* transfers to SCGs with below-average tax-raising capacity or above-average public service costs[1]. Equalisation arrangements can hence be broken down into two dimensions:

1. Revenue versus cost equalisation: whether equalisation aims mainly to reduce differences in tax-raising capacity or in the cost of providing public services.

2. Horizontal versus vertical equalisation: whether wealthy jurisdictions directly provide resources to poor ones (Robin Hood principle), or whether central government does so (gap-filling principle).

Most OECD countries apply various equalisation arrangements, although the combination of vertical and cost equalisation tends to be prevalent (Figure 5.2). Redistributive tax-sharing systems are not included in the figure, which detracts somewhat from the significance of horizontal equalisation. It is also difficult to distinguish equalisation from other grants, which many countries merge into joint arrangements.

Figure 5.2. Comparison of equalisation systems

Revenue versus cost-based and horizontal versus vertical systems, as % of total transfer flows
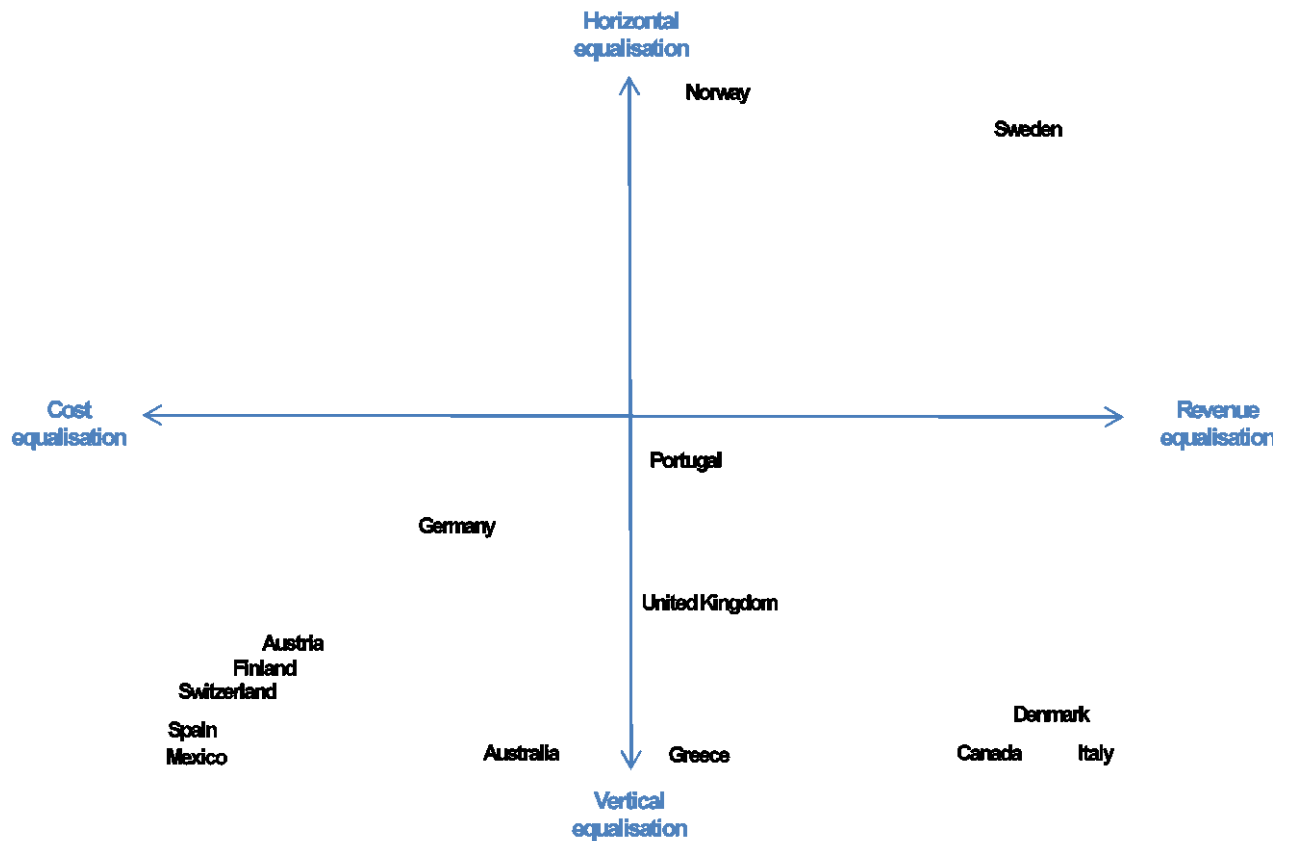
Note: Fiscal equalisation systems can be divided into vertical versus horizontal systems and systems that equalise revenue differences versus systems that equalise cost differences. For example, the systems of Mexico and Spain are vertical (from central to sub-central governments) and rely mostly on cost equalisation, while the systems of Sweden or Germany leans towards horizontal (between SCGs) revenue equalisation. Most systems are a mix of horizontal and vertical, revenue and cost equalisation.

Source: OECD Secretariat calculations based on Network questionnaire responses.

Revenue and cost equalisation

A sub-central government's needs are determined by its fiscal capacity, i.e. its ability to raise revenue and the cost of its services. SCGs fiscal capacities vary. To enable SCGs to provide similar services at similar tax levels, most countries equalise both revenue-raising capacities and expenditure needs, while some only have revenue equalisation arrangements. The choice is determined mainly by the system of government. Federal countries generally practice revenue equalisation, while unitary countries – where central government funds SCGs directly – tend to pursue both revenue and cost equalisation, owing to the much sharper cost disparities at municipal than at state/regional level. Although revenue disparities are between four and six times larger than cost disparities, revenue and cost equalisation systems are roughly the same size (Kim and Lotz, 2008).

Measuring tax-raising capacity

Tax-raising capacity is the *per capita* tax revenue a jurisdiction could raise if it applied a standard tax rate to a standard set of own-source taxes. One way of measuring it is the representative tax system

(RTS). A few main taxes and their tax base are usually sufficient to reflect the overall tax-raising capacity of a jurisdiction. Canada, for instance, in the 2007 reform of its equalisation system, reduced the number of taxes in its RTS from 34 to 5. Different countries consider different approaches as representative of tax-raising capacity. Some of the most common practices are:

- taking only one or two sub-national taxes or a locally collected national tax;

- using actual tax revenues, although this may provide SCGs with an incentive to reduce their tax effort in order to secure higher equalisation payments;

- artificially inflating population figures for large cities in order to account for their higher living cost (e.g. Austria and Germany) or explicitly refraining from doing so (e.g. Canada), which is likely to penalise large urban areas (Albouy, 2010);

- using state/regional GDP or household income as a proxy for tax-raising capacity (the so-called "macro-approach" applied to some transfers in the United States), although such indicators may give an imprecise, sometimes distorted picture of true SCG funding capacity.

Measuring cost

Ideally, cost is measured in the form of representative expenditure systems (RES) that are based on a set of standard costs per public service delivered. While there is really no such thing as a pure RES, countries have made headway in establishing standard unit costs for individual services – e.g. the cost of educating one pupil in primary school, or the cost of building one road kilometre. These unit costs are then adjusted to account for variations: for example, a pupil in an economically distressed area requires extra help and a mountain road costs more than one in the plains. The unit cost is then multiplied by the number of necessary service units.

A more sophisticated analysis is based on cost functions. It involves relating cost to a number of determinants using actual data from a large number of sub-national governments. However, such regression analyses often deliver unreliable, unstable results and are difficult to convey to policy makers (Kim and Lotz, 2008). Historical cost is a simpler means of assessing SCG needs, although countries are gradually abandoning it as it no longer reflects true sub-national needs. Italy and Spain, for example, have moved from historical to standard cost assessments in recent years. Finally, cost equalisation can be based on actual sub-national spending, although such an approach tempts SCGs to overspend and has become largely obsolete in OECD countries.

Horizontal and vertical equalisation

Most countries combine horizontal and vertical equalisation. Questionnaire responses suggest that horizontal arrangements are more effective as they have higher equalisation effects per monetary unit (Blöchliger and Charbit, 2008). They are also generally more transparent in that they provide greater information on financial flows between donors and recipient jurisdictions.

From a political economy perspective, both systems have their advantages and disadvantages. Vertical equalisation may give raise to a soft budget constraint syndrome, as SCGs may band together and ask central government for ever-increasing transfers. This, however, is strongly dependent on the negotiating power of central government, itself a function of the wider institutional set-up and how strongly SCGs are represented in national parliaments. In horizontal equalisation systems the debate shifts to the sub-national level – i.e. between rich and poor SCGs - as the central government is no longer involved financially.

The equalisation effect

Disparities before and after equalisation

Because fiscal equalisation seeks to reduce fiscal disparities, it should be evaluated on how it achieves that aim. In that regard, Table 5.1 shows the tax-raising capacities of sub-central governments in OECD countries before and after equalisation. In most instances the effect of equalisation is substantial. As measured by the Gini coefficient of tax-raising capacity before and after equalisation, disparities shrink by an average of almost two-thirds, while the ratio between the highest and the lowest tax-raising capacities averages less than 2:1. In some countries – such as Australia, Germany and Sweden – revenue-raising disparities are virtually eliminated. Horizontal systems exert a slightly stronger equalisation effect per monetary unit spent than vertical ones (not shown). Post-equalisation fiscal disparities are clearly narrower than economic disparities as measured by regional GDP – in other words, the capacity to provide public services is more equally distributed across jurisdictions than economic activity.

Table 5.1. Fiscal disparities before and after equalisation

Gini coefficients and ratio of the wealthiest to the poorest jurisdiction

Country	Gini coefficient				Ratio of highest to lowest tax-raising capacity			
	Before equalisation		After equalisation		Before equalisation		After equalisation	
	2005	2012	2005	2012	2005	2012	2005	2012
Federal/regional countries								
Australia	0.05	0.07	0.00	0.00	4.8	7.5	1.0	1
Austria			0.02	0.05			1.1	1.5
Canada	0.10	0.11	0.07	0.08	2.4	2.4	1.7	1.8
China	0.33	0.31	0.25	0.18	14.4	10.3	9.5	5.3
Germany	0.06	0.06	0.02	0.02	1.7	1.7	1.2	1.1
Italy	0.21	0.19	0.10	0.04	6.1	4.5	1.3	1.3
Spain	0.15	0.13	0.04	0.05	2.1	3.0	1.4	1.4
Switzerland	0.15	0.17	0.11	0.11	3.8	4.3	2.5	2.6
Unitary countries								
Chile (2010)		0.49		0.14		20.6		2.3
Denmark	0.08	0.06	0.04	0.03	2.2	1.4	2.0	1.2
Finland	0.11	0.12	0.03	0.05	1.8	1.8	1.1	1.4
Japan	0.20				3.2			
Norway	0.13	0.13	0.05	0.04	2.2	2.1	1.3	1.2
Portugal	0.34		0.14		12.7		2.1	
Sweden	0.06	0.07	0.01	0.01	1.4	1.5	1.1	1.1
Turkey	0.22		0.06		65.0		1.7	
Average	0.16	0.16	0.07	0.06	8.8	5.1	2.1	1.8

Values for state/regional indicators, which include every single jurisdiction, are not comparable with results at local level. Local governments are grouped into deciles (or "tenths") ranked in ascending order of tax-raising capacity prior to equalisation. The effect of cost equalisation is not shown, as only a few countries supplied data on the cost of providing services (For further details refer to Blöchliger and Charbit [2008].)

Redistributive effects and equalisation design

The redistributive pattern of fiscal equalisation across types of jurisdictions depends on sub-central revenue sources, the nature of decentralised public services, and the design of the equalisation formula. Revenue equalisation leads to redistribution from urban to rural areas because of the latter's lower revenue-raising capacity. Cost equalisation based on geographical need indicators usually reinforces redistribution to rural areas where infrastructure costs tend to be higher. In contrast, the use of socio-economic need indicators like social welfare weakens redistribution because socio-economic costs are generally higher in urban areas. Still, urbanised areas in most countries remain net contributors to fiscal equalisation systems since higher revenue-raising capacity and lower geographical needs outweigh socio-economic need, as the equalisation experience in Sweden, Finland, Norway, Japan, Korea and

Italy attests. Nevertheless, there are a few countries (e.g. the Netherlands and the United Kingdom) where equalisation, if firmly directed at socio-economic needs, does benefit urban areas, especially those with few own resources. Some equalisation arrangements appear bi-polar: they tend to favour the top and bottom ends of the fiscal capacity scale at the expense of intermediate jurisdictions like in Germany and Switzerland.

Equalisation systems do not always adequately address fiscal disparities and, in some cases, may even exacerbate them. There are two main reasons:

1. Some equalisation formulae leave substantial revenue sources out of their fiscal capacity definitions, portraying jurisdictions as much "poorer" than they actually are. In Canada and Norway, the non-inclusion of natural resource income is likely to have undesirable effects on equity.

2. Second, a number of equalisation arrangements (in Japan, Turkey and, until recently, Switzerland) factor in a tax effort indicator, so giving equalisation grants a matching character. Consequently, if a sub-central government raises its taxes, it may get relatively more of the equalisation grant.[2] Political economy forces may thus nudge fiscal equalisation systems into favouring certain types of jurisdictions independently of their needs.

Trade-offs and side effects of equalisation

Revenue equalisation affects tax base development

Revenue equalisation "taxes" the fiscal resources of a jurisdiction. In other words, the greater the economic activity and tax base within its boundaries, the greater the amount that a jurisdiction has to contribute to an equalisation fund. The rate at which a jurisdiction's additional own revenue is taxed away or cancelled out by lower grants is the marginal equalisation tax rate – also known as "tax back" or "compensation rate". It is one of the most hotly debated issues in fiscal equalisation. Whereas sub-national governments devote an average of just over 70% of their additional tax revenue to equalisation, the marginal equalisation rate is close to 100% in some countries (Table 5.2).[3]

Table 5.2. Revenue equalisation levies a large burden on own-tax revenue

	Direction	Revenue base	Marginal equalisation rate
Federal/regional countries			
Australia	vertical	Potential tax-raising capacity, taxes on payroll, property sales, land values, mining activities	n.a.
Austria	vertical	Tax sharing system, actual tax revenue collected	0% for *Länder* above average fiscal capacity, 88% for *Länder* below
Canada	vertical	Representative tax system with 33 different taxes	0% percent for provinces above average fiscal capacity, 70-100% for provinces below
Germany	horizontal and vertical	Tax sharing system, actual tax revenue collected	15%-85% for *Länder* above average fiscal capacity (progressive scale), 100% for *Länder* below 99.5% of the average
Italy	vertical	Representative tax system	Between 2% (richest region) and 7% (poorest region)
Mexico		(No revenue equalisation)	
Spain	vertical	Representative tax system	n.a.
Switzerland	both	Income tax, wealth tax, vehicle tax	40 to 60%
Unitary countries			
Denmark	horizontal	n.a.	85% for metropolitan municipalities, 90% for poor municipalities, 58% for others
Finland	horizontal	Representative tax system based on personal income tax, corporate income tax and property tax	40% for municipalities above 90% of average fiscal capacity, 100% for municipalities below
Greece	vertical	Actual tax revenue	n.a.
Norway	horizontal	Actual tax revenue	55% for municipalities above 90% of average fiscal capacity, 90% for municipalities below
Poland	vertical	Representative tax system based on personal income tax and corporate income tax, actual tax revenue	n.a.
Portugal	vertical	Actual tax revenue	0% for municipalities above average fiscal capacity, 100% for municipalities below
Sweden	horizontal	Actual tax revenue	85% for municipalities and counties above 115% of average fiscal capacity, 95% for municipalities and counties below
Turkey	vertical	*Per capita*	n.a.
United Kingdom	vertical	Actual tax revenue	0-100% according to property tax brackets

Source: OECD Secretariat calculations based on Network questionnaire responses, 2005.

High equalisation rates can create moral hazard by undermining sub-central governments' efforts to increase their own tax bases and boost regional growth (OECD, 2006). Sub-central governments may also increase tax rates in order to narrow the tax base and obtain higher equalisation grants, which results in strategic tax-rate setting and an overall increase in taxation levels (see Dahlby and Warren [2003] on Australia, Smart [2007] on Canada, and Büttner [2006] on Germany). Since many fiscal equalisation formulas capture sub-national taxes partially or not at all, SCGs are tempted to avoid taxes that are part of a formula and select those which are not, so distorting sub-central tax structures. A lenient tax collection effort, especially if tax administration is under sub-central control, may also be the consequence of high equalisation rates.

Trade-offs between equity objectives and negative incentive effects may be mitigated if equalisation is designed properly. Many countries have moved towards comprehensive RTSs or central/federal tax bases as indicators of sub-national revenue-raising capacity, thereby leaving

jurisdictions less leeway to game the tax base. Including all major sub-national revenues has curbed strategic behaviour and helped achieve a given equity objective with lower equalisation rates – a principle known from tax policy as "tax base broadening". Imposing ceilings and floors on sub-national tax-rate setting has also helped contain strategic behaviour.

Finally, the overall effects of equalisation on taxation and development efforts depend on the wider economic framework within which sub-national governments operate. Depending on their power to shape economic policy, SCGs may opt for growth even if additional tax revenue is entirely equalised away, and accept a fiscal zero-sum game on the condition that firms grow, that people get jobs, and that their communities thrive (Schneider, 2002).

Cost equalisation can increase spending

Cost equalisation is designed to reduce differences in the *per capita* cost of SCGs' public services. The main challenge is therefore to address pertinent differences in needs while avoiding wasteful spending and resisting pressure for higher grant entitlements. Cost equalisation gives jurisdictions considerable leeway for influencing spending needs: while some countries operate with only a few broad-based needs indicators, others use relatively complex ones to assess equalisation needs.[4] The criteria for determining equalisation payments are thus frequently rendered prone to sub-national manipulation, thereby leading to inflated equalisation payments. As a result, and although disparities in cost are four to six times smaller than in revenue, cost equalisation systems are often larger than those that address revenue imbalances. Finally, there is evidence that in many countries political interests tweak the equalisation formulae and/or individual entitlements (Box 5.1).

Box 5.1. The political economy of grant allocation

Grants and tax sharing are affected by political factors that distort equalisation policy. A growing body of literature on fiscal federalism argues that political interests are key in explaining the allocation of intergovernmental grants (Khemani, 2007). Political bias is particularly strong if grants are not formula-determined.

In the United States, party affiliation between federal and state politicians increases the dollar *per capita* amount of grants made to a state, as does the size of its bureaucracy and union membership (Grossman, 1994). In Mexico transfers allocated in 1992 favoured states that had remained loyal to the dominant party during the previous presidential election in 1988 (Kraemer, 1997). Germany allocates more intergovernmental grants to the regions with higher numbers of electoral districts (Pitlik, Schneider, and Strotman, 2006). In Portugal, grants increase in election years. And the longer a mayor has been in office, the more funds are transferred to his or her municipality (Gonçalves and Pinho, 2005). In Spain, more intergovernmental grants are allocated to regions where election outcomes are uncertain (Simon-Cosano, Lago-Penas, and Vaquero, 2013). In Sweden, municipalities with many swing voters receive larger grants (Johansson, 2003). In Norway there are persistent disparities in local government grants that cannot be accounted for by regional policy or equity objectives (Sorensen, 2003). In France, the municipal equalisation scheme reduces fiscal disparities by one-third only. High complexity and rent seeking at the local government level dilute the equalisation effect of the French transfer system (Gilbert and Guengant, 2003).

A number of countries have developed various measures to limit the undue influence of special interests. Denmark and Australia, for example, have put in place agencies and other arms' length independent bodies to help contain and channel transfer increases. Independent agencies are less prone to political bargaining and perceive the allocation of equalisation money as a technical rather than political exercise. Research indeed confirms that independent agencies are less prone to political influence than ministries (Khemani, 2007). Norway is one of a number of countries to have introduced a two-stage budget procedure which successfully limits rent-seeking pressures: the overall budget for equalisation is determined before the distribution formula is negotiated among sub-central governments. The process of adjusting equalisation formulae can also be organised to reduce rent-seeking pressures. Many countries not only take into account the opinion of local governments, but also involve civil servants, politicians, and experts.

The most promising way to limit rent seeking and political bias is a simple, transparent, and easy-to-understand equalisation formula with few indicators covering a country's main fiscal disparities.

The extent to which cost equalisation can withstand spurious demands while addressing true expenditure needs depends on design. When it relies on actual spending sub-central governments have a strong incentive to inflate their budgets. If based on past (historical) expenditure it reduces budget drift but perpetuates public service spending patterns.

Today most countries are moving towards standard cost approaches, applying objective criteria to help assess true spending needs. Cost equalisation arrangements should be based on only a few indicators encompassing a broad set of needs, and they should be resistant to sub-national manipulation. For instance, the number of teachers is an inept indicator, since it is a number which jurisdictions can tweak. The number of schoolchildren, by contrast, is a suitable indicator – there is little way that SCGs can bend the number of children. Cost equalisation systems that rely on few indicators are more transparent as well. And they trigger fewer statistical headaches when annual equalisation entitlements have to be estimated (Kim and Lotz, 2008).

Cost equalisation and (dis)economies of scale and scope

Public service spending depends not only on need factors, but on production function characteristics such as (dis)economies of scale and scope, too. As noted above, population densities and settlement structures may affect the unit costs of service delivery. Smaller, scattered jurisdictions are more expensive to run since schools, hospitals and other public facilities exhibit fixed costs. Infrastructure and capital-intensive network industries – such as energy or transport systems – exhibit strong economies of scale and scope, and unit costs fall considerably if a large population is served. On the other hand, services such as security or fire protection bring about higher *per capita* expenditure in densely populated areas. Since per capita cost rise with SCG size for some services while they decline for others, *per capita* expenditure is U-shaped with respect to municipal size – very small and very large municipalities show higher *per capita* expenditure than those in between. Although this U-shape occurs in almost all countries, it is unclear to what extent factors other than scale and scope (dis)economies contribute to it.

Many countries run equalisation policies that take the industrial organisation of public services into account and adjust need indicators to municipal size or population density. Such policies bear risk, though, as they may preserve both inefficient public services and an excessively dispersed settlement structure across a country. Equalisation payments favouring small municipalities could prevent them from merging or from finding other forms of joint provision that would help increase service quality or reduce cost. In the long run, scale-adjusted payments may also curtail service providers' search for cost-saving technologies. Finally, agglomeration economies – the productivity advantages of large and densely populated areas over small and sparsely populated ones – may not yield their full benefits. In some cases, equalisation formulae that adjust for jurisdictional size and related factors deliver awkward outcomes.[5]

Earmarking equalisation transfers

Some countries earmark equalisation transfers and sub-central governments deliver public services under central government's explicit financial control. Such arrangements raise considerable efficiency concerns. Earmarking is a strategy related to input rather than to output or outcome. It creates a considerable administrative burden and high compliance costs for both central and sub-central governments. It reduces sub-central choice and can lead to distorted sub-central budget allocations, especially if grants cover many small budget items. Moreover, if earmarked grants match sub-central spending – so-called "matching grants" – their equalising effect is likely to be weak or even negligible (Box 5.2).

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Box 5.2. Earmarked matching grants in the United States and Switzerland

Both the Unites States and Switzerland have long used earmarked matching grants to reduce fiscal disparities across states and *cantons*. Such a grant is Medicaid, the medical insurance scheme for low-income people and by far the largest intergovernmental programme in the United States. Federal government's matching rates are inversely related to state *per capita* income and vary between 50% and 77% of states' expenditure (Laubach, 2005). Most US states also use earmarked grants to finance local school districts with a matching rate that is inversely related to a district's tax-raising capacity. Until 2005, Switzerland's cost equalisation system comprised around 350 earmarked grants. Matching rates ranged from 40% to 95%, again in inverse proportion to the tax-raising abilities and tax efforts of the *cantons*.

The experience after decades of earmarked equalisation is mixed, at best. While state and local governments indeed tend to spend more on subsidised services, the disparity-reducing effect is limited. The US Medicaid programme does little to reduce disparities precisely because poor states tend to spend less on healthcare (Levitt and Poterba, 1994). States' educational grants are estimated to have reduced the large fiscal inequalities among school districts only by between 19% to 34% (Evans, Murray, and Schwab, 1997), while cutting expenditure in high-spending districts rather than increasing it in low-spending ones (Hoxby, 2001). At around 3%, Switzerland's earmarked equalising grants had an even lower disparity-reducing effect (Frey et al., 1994).

Both the US and Swiss experiences show that, although poorer regions benefit from higher matching rates, they are also less willing or able to provide own-source funds, so that the overall equalising effect is meagre. The disappointing outcomes of earmarked matching grants led the Swiss government to abandon this type of equalisation in 2006 (Frey and Wettstein, 2008).

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If central government is to retain control over the proper use of equalisation funds, it can do so more effectively through appropriate public service regulation – by, for example, setting minimum standards or using output and performance indicators. It should leave the operation and management of fiscal resources to the discretion of local and regional governments (Bergvall et al., 2006).

Equalisation and macroeconomic outcomes

Disparities, equalisation, and convergence

Equalisation may in fact be self-defeating in that it slows down regional convergence. Most arrangements apply higher equalisation rates to poor than to wealthy jurisdictions, mainly by guaranteeing every jurisdiction a minimum fiscal capacity. However, the more generous equalisation is, the less incentive there is for poor regions to catch up or for households and firms to migrate to more prosperous jurisdictions. As a result, disparities may widen rather than narrow. There is some country evidence as to there being a negative relationship between the size of equalising transfers and regional growth performance (Garnaut and FitzGerald, 2002; Baretti, Huber and Lichtblau, 2000). Nevertheless, it is not clear in which direction causality works – whether greater equalisation leads to wider disparities, or whether wider disparities require more equalisation. A comparative investigation into regions in the European Union (EU) suggests that there is a cause-effect relationship whereby large transfer systems appear to slow down regional convergence in certain categories of regions (Kessler and Lehman, 2011).

Are equalisation and stabilisation conflicting policy objectives?

Equalisation is traditionally regarded as a means of redistributing tax revenues among states with different revenue-raising capacities or expenditure needs. It can also be viewed as a device for stabilising local and regional business cycles and for smoothing household income and consumption across a country. Diverging business cycles can become a pressing issue in large, heterogeneous countries. From this perspective, equalisation should both channel income from prosperous to poor regions and from regions experiencing a boom to ones going through recession. Smoothing cyclical fluctuations has long been an issue for European Union member countries (Wyplosz, 1991). Accordingly, the EU institutions

recently proposed a stabilisation mechanism explicitly to attenuate the business cycle at country – not sub-national – level across the Union (Van Rompuy et al., 2012).

Unfortunately, most equalisation systems do not stabilise. Equalisation works across jurisdictions but not over time and, rather than ease fluctuations in regional economic activity, it exacerbates them. The Canadian system is disparity-reducing, yet it heightens fluctuations of provincial tax revenues (Boadway and Hayashi, 2003). In Germany vertical equalisation (grants from the federal to the *Länder* level) is also pro-cyclical, while the system's horizontal component generally smoothes regional cycles (von Hagen and Hepp, 2000). A model calculation using EU data finds that a Union-wide fiscal equalisation system would (by definition) redistribute revenues from high- to low-income countries, but that its stabilisation properties would, at best, be neutral and probably pro-cyclical (Bargain et al., 2013).

To some extent, an appropriate design can help address pro-cyclicality. Some countries link intergovernmental grants to lagged fiscal capacity indicators or apply moving averages, thereby smoothing sub-central revenue volatility. Also, horizontal equalisation tends to be less prone to the cycle than vertical equalisation, probably because regional shocks are better absorbed in a horizontal (interregional) arrangement (Büttner, 2009). As a general rule, however, damping cyclical fluctuations and reducing inter-jurisdictional disparities are clearly two different objectives which should be addressed through separate transfer systems.

Sustainability of public finances

Equalisation can weaken sub-national fiscal discipline and put pressure on central government budgets. There is some empirical evidence that a large equalisation system can create a soft budget constraint, blunt sub-national governments' fiscal responsibility, and invite rent seeking. Many countries ensure that their sub-national governments have a minimum fiscal capacity or fully cover expenditure needs, but without putting a ceiling on total equalisation payments. An analysis of 13 OECD countries provides some evidence that intergovernmental grants, which encompasses equalisation, may trigger budget drift (de Mello, 2007). Similarly, research covering Germany suggests that net recipients of equalisation payments hardly reduce their spending when deficits grow, but rely on grants being increased (Stehn and Fedelino, 2009). However, the German transfer system does keep sub-national debt at sustainable levels (Potrafke and Reischmann, 2012). By contrast, analysis of Mexico and Switzerland suggests that central government does – at least partially – give in to sub-central pressure for transfer increases (OECD, 2002). Doing so may not only bias central government's fiscal stance, but may also reduce the overall effectiveness of disparity reduction.

Institutional constraints on budget drift vary from country to country. In itself, horizontal equalisation is less prone to budget drift than vertical equalisation since central government is not financially involved. Some countries, like Canada, cap transfers irrespective of sub-central financial needs. Others, such as Japan, Korea and Portugal, set equalisation payments as a share of total tax revenue or expenditure. This practice limits increases in expenditure, although occasional rises in sub-central governments' share undermine its credibility.

One neat way to curb budget drift is to concatenate vertical and horizontal equalisation. Switzerland, for example, determines vertical equalisation – within a certain range – as a percentage of horizontal equalisation, thereby forging political coalitions between the federal government and some *cantons* against expenditure increases. Finally, countries like Denmark and Australia have established agencies and other arms' length independent bodies to help contain transfer increases (see Box 5.1).

An adequate set of rules on how budgets are drafted, approved, and implemented can also help better align equalisation needs with the available budget. There is some evidence that improved budget

management leads to greater fiscal discipline (Ahmad, Albino-War and Singh, 2006). Several countries (e.g. Canada and Denmark) present detailed, binding, medium-term budget projections for equalisation payments and their growth. In a number of countries fiscal equalisation is tied to other transfer mechanisms and scattered over several budget lines, so reducing transparency and complicating the overall picture of the true benefits and costs of equalisation. That said, most central budgets today report a few broad equalisation line items only and some, like Canada, even report equalisation as a single distinct transfer. To limit rent-seeking pressure, Norway is one country to have introduced a two-stage budget procedure, whereby the overall budget for equalisation is negotiated separately from the distribution formula (see Box 5.1).

Policy considerations

Fiscal equalisation is a core component of decentralised public finances: it seeks to enable all jurisdictions to deliver similar service levels at similar tax rates even if their tax-raising capacities or service costs differ. The devolution of new powers to sub-central governments, together with persisting inter-regional differences in economic activity and household income, require equalisation systems to adapt. Reforms of equalisation must target rising inequality, while ensuring that growth in the more productive regions is not held back or jurisdictions' development incentives undermined.

Equalisation is deeply country-specific. Reform considerations and political economy experiences may therefore not be transferable from one country to another. However, it is possible to state a few general rules on the reform of equalisation.

- Equalisation should rely on only a few core indicators that reflect inter-jurisdictional differences in tax-raising capacity and/or spending needs. These indicators should be immune to any manipulation by sub-national governments in order to pre-empt any unfair allocations to jurisdictions or spending excesses by either SCGs or central government. Equalisation should cover the main sub-national taxes and public service responsibilities in order to prevent jurisdictions from setting taxes strategically or core services from remaining structurally underfunded.

- The institutional set-up should help underpin the efficiency of equalisation while keeping equity objectives intact. Horizontal equalisation tends to be more efficient than vertical equalisation in terms of redistribution achieved per monetary unit spent. In all countries, disparities in revenue-raising capacity across jurisdictions are much greater than those in service cost. They should therefore be the first priority of equalisation. The size of a jurisdiction should not enter the equalisation formula, the possible exception being large agglomerations where living costs are high.

- In order to improve transparency, equalisation should be clearly separated from tax sharing and other intergovernmental grants whose purpose is not redistribution. Equalisation should, ideally, be a single transfer that offsets differences in tax-raising capacity and/or one or more transfers that meet differences in spending needs in the main policy areas devolved to sub-national governments – education, healthcare, and infrastructure. Donors and recipients should be clearly visible.

- The impact of equalisation should be regularly monitored. Periodical reviews of the system should assess to what extent equalisation helps reduce inter-jurisdictional inequality and how it affects the efficiency of the public sector, development incentives, overall spending, and tax levels. Equalisation should, in particular, come under scrutiny to ascertain whether it provides

insurance against asymmetric shocks. If it does not, equalisation and stabilisation should be addressed by two separate transfer systems.

NOTES

1. Tax raising capacity is defined as the tax revenue which a jurisdiction could raise if it applied a standard tax rate to a standard tax base. Tax-raising capacity is either expressed in per capita terms (tax revenue per head) or as a percentage of the national average, which is set at 100.

2. Specific forms of tax sharing can undermine equalisation. For example, metropolitan municipalities in Turkey are allowed to keep 5% of the general tax revenues collected within their boundaries, in addition to general grants inversely related to a jurisdiction's needs. Tax sharing thereby largely cancels out the equalisation effect of general grants.

3. Marginal equalisation rates are extremely difficult to calculate and values should be considered with care. Statutory and effective equalisation rates may differ considerably because tax bases interact and because equalisation formulas fully or partially omit some tax bases. Often the effective rate is endogenously defined, as the total amount to be disbursed is decided first, followed by a calculation of the equalisation rate for each jurisdiction. The marginal equalisation rate must also be carefully distinguished from the average long-run reduction in SCG fiscal disparity. Both indicators may vary considerably. In Germany, around 50% of the long-run differences in state tax revenue are offset by equalisation (Von Hagen and Hepp, 2000), while in the United States less than 50% of differences in education spending are eliminated (Evans, Murray and Schwab, 1997). In France, national grants reduce inequality among municipalities by 30% (Gilbert and Guengant, 2003).

4. Denmark and Norway each use around 15 socio-economic indicators to assess expenditure needs. Switzerland uses 4 indicators for geographic and 6 indicators for socioeconomic needs. The Netherlands uses 24 indicators to assess needs. Sweden uses 10 different formulas for cost equalisation. On the other hand, the Australian system operates with more than 40, while the Korean system has around 50, which is still less than in the United Kingdom. The French equalisation system consists of seven programmes with dozens of indicators.

5. Australia, Denmark, the Netherlands, Norway, Sweden, and the UK operate arrangements that explicitly take the cost of "density" and "dispersion" into account. Cost equalisation in Austria and the Czech Republic favours smaller municipalities. This could explain the resistance of Czech municipalities to merging and the increase in the number of municipalities in Austria in the 1990s. In Korea, the number of administrative districts and government officials is factored into the local tax share formula, causing the public sector to grow. Until 2006, the Portuguese equalisation system used the number of *freguesias* (parishes or municipal sub-units) as an indicator of a municipality's entitlements, prompting municipalities to divide themselves up still further. The local finance reform of 2007 provides *freguesias* with incentives to merge.

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