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## Local Service Provision in Selected OECD Countries: Do Decentralized Operations Work Better?

*Ehtisham Ahmad, Giorgio Brosio, and Vito Tanzi*

## **IMF Working Paper**

Fiscal Affairs Department

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Operations Work Better?

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### **Abstract**

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There is a widespread presumption that decentralization improves public service provision. This has led to policy prescriptions that are assiduously adhered to by countries and international. This paper reviews the recent evidence from OECD countries—which is seen to be inconclusive. This suggests the need for a careful design of programs that take into account the political economy constraints and incentives, as well as more systematic and thorough evaluations of outcomes.

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## I. INTRODUCTION

Does decentralization “improve” local service provision? This policy question is a key one for Organization for Economic Cooperation and Development (OECD) countries as well as for developing countries. This chapter focuses on the effect of decentralization on service delivery in selected OECD countries. It considers the effectiveness and economic efficiency of decentralization measures, as well as issues of equity, surveys the existing literature, and draws some tentative conclusions from the information available.

Although efficiency in service provision is a focal concern of economists—and citizens—it is not always the main goal of decentralization. In many OECD countries, decentralization arose from political (regional) demands for autonomy, not from efficiency considerations. Citizens may be ready to trade lesser efficiency for government closer to home.

The empirical literature on efficiency issues focuses more on developing, rather than on OECD, countries. In developing countries decentralization has been encouraged by external donors and international organizations that have an interest in the outcomes, especially in terms of efficiency and, often, equity as well.

Verifying the outcomes and results of policies is a difficult exercise. Only the more advanced OECD countries have moved toward performance budgeting, France being the latest to do so. In the absence of a performance budgeting framework, an approximation may be attempted to evaluate outcomes. Required, however, is a defined, appropriate methodology and supporting information that may not be readily available.

Therefore, it is useful to identify key analytical issues, survey the literature, and examine results critically. Methodological and substantive conclusions may then be drawn that could guide a research agenda in both OECD and developing countries. These conclusions could also be useful to donors and international agencies in designing and evaluating the effectiveness of essential public services at the local level.

## II. DECENTRALIZATION AND SERVICE DELIVERY

Decentralization may be understood as a process through which the role and importance of the subnational government are expanded. This expansion can take place through three main different processes, which are not necessarily in actual or suggested order of sequence.

**Political decentralization**

OECD countries are characterized by democratic institutions at all levels. In this context, political decentralization means devolution of political authority or of electoral capacities to subnational actors. Typical examples are the popular election of governors and mayors,<sup>2</sup> (previously appointed by local councils or by central authorities), constitutional reforms that reinforce the political autonomy of subnational governments, and electoral reforms designed to augment political competition at the local levels.

**Fiscal decentralization**

Fiscal decentralization involves a transfer of expenditure responsibilities to lower-level local governments, financed by a combination of own and other sources of revenues, including transfers. The manner in which responsibilities are assigned—for example, by unfunded mandates or by earmarked or tied transfers—may reduce the “effective autonomy” of the local governments. Similarly, without own-source revenue at the margin, the local governments may lack incentives for proper accountability because they might be able to leverage the federal government or pass on the consequences of their actions to other jurisdictions (see Ahmad and Brosio 2006; Ambrosiano and Bordignon 2006).

**Regulatory decentralization**

Regulatory decentralization does not imply an appreciable transfer of financial resources or assignments, although its effect may be considerable for citizens (such as regulation of car emissions). Pure regulatory decentralization is much less frequent than fiscal decentralization. In fact, substantial centralization of regulations has taken place, particularly in environmental, health, and even financial policies.

Both fiscal and regulatory decentralization imply transfer of some decision-making power over public (fiscal) or private (regulatory) resources from the central to the subnational governments. Recognition that this shift in decision-making power is essential to decentralization is crucial to identifying and using proper indicators of fiscal decentralization. For example, a simple reassignment of health expenditure from the central to regional budgets does not imply per se an increase in the degree of decentralization if it is not accompanied by the transfer of some decision-making power relating to this expenditure to subnational levels.

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<sup>2</sup>Popular election of the heads of the executive of all levels of government is considered to be the most important component of the recent decentralization process in Italy because it increased the stability of subnational governments and increased, through expanded political legitimacy of mayors and governors, their bargaining power vis à vis the central government.

If the reassignment is financed by tied transfers, regional budgets would show a higher amount of expenditure, but because regions have to follow centrally set instructions for the use of these resources, no decentralization takes place. Regions act simply as hierarchical subordinated agents of the central government.<sup>3</sup> Conversely, there can be real decentralization even if the share of regional expenditure or revenues does not change, but only if more decision-making power concerning the existing resources is devolved to regions. This situation poses a difficulty for empirical work because the extent to which a spending assignment can be treated as a local responsibility depends on the financing arrangements, in particular whether tied transfers are involved.

### **Evidence of decentralization in OECD countries**

OECD countries present practically every conceivable model of intergovernmental relations, ranging from highly decentralized federal systems, as in the United States, Canada, and Switzerland, to highly centralized unitary state systems, as in Ireland, Greece, and Portugal, and some of the new European Union (EU) member states, such as Hungary, without traditions of relatively strong subnational governments. Between these polar models are recently created regional systems, as in France, Italy, and Spain, and unitary states with traditions of strong local government, as in the Scandinavian countries.

In recent decades, reflecting increasing democratic trends, most OECD countries have experimented with decentralization reforms but addressing different motivations (as described below). A few have embarked on ambitious decentralization processes requiring constitutional revisions. Most notable have been the federalization of Belgium and the regionalization of Spain, Italy, France, and the United Kingdom. While Italy is quite decentralized, the 2001 constitutional reforms have not been fully implemented. Noticeable decentralization reforms have also been introduced in Mexico in the 1990s, although the process there is far from complete.

Decentralization has also taken place in all of the new Eastern European EU member nations. Poland, Slovakia, and the Czech Republic have also introduced a regional level of government. Decentralization initiatives have been more hesitant in Asian OECD countries (Yagi 2004).

A few countries, including Denmark, recentralized their system of territorial government. In Denmark higher education, and hospital management—the chief responsibilities of the counties—have been transferred to newly created regions. The Danish example follows a trend in health care in Scandinavia. While hospitals have been transferred to new and single-function regional entities, the role of municipalities in primary care has been strengthened (Rico and León 2005). See Table 1 for information on decentralization trends.

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<sup>3</sup>Deconcentrated spending assumes that there is full information on subnational operations, without which tied transfers could degenerate into spending others' moneys without adequate supervision.

**Table 1. Main Traits of Evolution of Intergovernmental Relations in Selected OECD Countries**

Countries	Share of Subnational Spending on General Government Spending, 1985 (%)	Share of Subnational Spending on General Government Spending, 2001 (%)	Main Traits of Intergovernmental Relations	Recent Reforms
Australia n.a.		43.3 Feder	al system	Value-added tax administration by center with all revenues provided to the states
Austria	28.4	28.5	Federal but highly federally regulated system	The constitutional convention recently fostered debate on constitutional reform of intergovernmental relations.
Belgium	31.8	34.0	Federalization based on linguistic divides	Transformed from unitary to federal state
Canada 54.	5	56.5	Federal system	Asymmetries (Quebec)
Germany	37.6	36.1	Federal system with extended concurrent responsibilities	
Mexico			Federal system with high political and low fiscal decentralization	Fiscal and regulatory decentralization since late 1980s, with devolution to states of basic education (1992) and health care (1996)
Switzer land	n.a.	67.4	Federal system	
United States	32.6	40.0	Federal system	
France 16.1		18.6	Regional	Regulatory, fiscal and political decentralization
Italy	25.6	29.7	Regional	Fiscal, regulatory and political decentralization
Spain 25.	0	32.2	Regional, quasi-federal system	Completed transition toward a regional system
United Kingdom	22.2	25.9	Regional	Introduction of regional government in Scotland and Wales 2000
Czech Republic		30.0	Quasi-regional Regionalization	
Denmark	53.7	57.8	Unitary system with strong municipal government	Recentralization of higher education and health since 2006
Finland	30.6	35.5	Unitary system with strong municipal government	
Greece 4.0		5.0	Typical unitary	
Japan 46.	6	40.6	Typical unitary	
Luxembourg 14.	2	12.8	Typical unitary	
Netherlands 32.	6	34.2	Quasi-regional	
New Zealand			Typical unitary	
Norway	34.6	38.8	Unitary system with strong municipal government	
Poland n.	a.	33.3 (2005)	Unitary	Political and fiscal decentralization with emphasis on the local level
Portugal 10.	3	12.8	Unitary	Asymmetric regionalization of islands
Slovak Republic	n.a.	n.a.	Unitary	Recent creation of regions
Sweden	36.7	43.4	Unitary system with strong municipal government	Devolution of responsibilities in education to municipalities
Turkey 22.	2	25.9	Unitary	
Average 29.	8	32.2		

Sources: Unless otherwise noted, qualitative information derives from OECD (2002) and from papers quoted in the text.



The motivation to decentralize often reflects complex and not always transparent political debates. In most cases, decentralization is a long, multistep process, carried out by changing political coalitions, that affects various layers of government differently.

In Italy, for instance, decentralization since 1993 has successively involved: (1) the devolution of taxing powers to municipalities and regional governments; (2) the popular election of mayors and of provincial and regional governors; (3) the devolution of important expenditure responsibilities and legislative functions to regional governments; and (4) the elimination of many central government controls on subnational units. These reforms—some of which are constitutional—have been implemented by both center/left and center/right coalitions and have reflected pressures applied by regionally based political movements. France has taken a similar path. Decentralization reforms there were started in 1982 (during a socialist presidency) with the devolution of functions and the creation, in 1984, of the decentralized public service, the *fonction publique territoriale* which administers local functions. The powers of the prefects (appointed by the central government) vis-à-vis subnational governments have shifted from control to support. Since 1986 regional councilors have been popularly elected. Following the 2001 budget reforms that led to the introduction of performance budgeting, the 2003 constitutional reform (sponsored by a center/right government) aimed at increasing the role of subnational governments by introducing the subsidiarity principle, involving both policy and fiscal autonomy (Documentation Française 2007).

Spain has almost completed a transition to a regional or quasi-federal system. The process was set in motion by the 1978 constitution that granted a high level of autonomy to the historical nationalities of Navarra, the Basque Region, and Catalonia, while recognizing the right of the other regions to attain a similar level of self-government (Moreno 2002; Garcia-Milà and McGuire 2002). Spanish decentralization has been typically asymmetric, thus providing a good basis for empirical analyses of decentralization's effects. Also in Spain, decentralization has been promoted by both conservative and socialist governments.

One common motivation for decentralization is a central government's desire to share with other levels the rising political costs of governance of complex systems. Increasing efficiency is a motivation for decentralization in France and, partly, in Italy. In Spain decentralization has been a response to aspirations of strong communities. In Italy the economic divide between rich and poor regions led to a demand for autonomy from the former. The goal of equity has led to an expansion of public spending. The results have been a greater reliance on redistributive transfers and a higher tax burden that is resented by voters in the rich regions.

Federalization in Belgium and regionalization in the United Kingdom derive exclusively from historical, linguistic, and cultural divides. In Eastern European countries, decentralization has been sponsored by the EU and by international organizations, replicating

the pattern observed in many developing countries, in which the consolidation of democracy, efficiency, and improved governance are dominant concerns. The EU, however, does not sponsor a particular model of decentralized governance.

In the Scandinavian countries, decentralization and subsequent recentralization have been driven largely by efficiency concerns. In Mexico decentralization was also seen as a reaction to seven decades of virtual single-party, “centralized” rule. Although the political power of state governors has grown, on the fiscal side spending functions remain unclear, states lack effective revenue tools, and the transfer system is opaque.

Demands from local elected officials and bureaucrats for more power and autonomy are important. Many OECD countries have longstanding traditions of decentralized government and thus strong constituencies in favor of decentralization.

Outcomes can be examined within single countries where local jurisdictions have achieved varying degrees of autonomy (asymmetries). Or, it is possible to observe different countries with different degrees of decentralization. Proper analysis requires adequate data on outcomes, efficiency, and distributional considerations. Governments take time to adjust policies and assignments; hence a full evaluation of the outcomes of devolution would require assessments over a long time frame.

### **III. OUTCOMES OF DECENTRALIZATION**

Traditional, normative approaches to decentralization were based on the assumption of benevolent government, in the Musgrave tradition of public finance. Questioning this premise has led to a more positive political economy approach. These are described below.

#### **A. Traditional Approaches**

Traditional approaches to on the effectiveness of the delivery of services, have dealt largely with allocation aspects, employing Musgrave’s terminology. In this view, decentralization is expected to effect positively on preference matching and on production efficiency.

#### **Preference matching**

Policies devolved to lower-level governments are expected to better match the preferences of the residents of these governments than policies by higher levels. This advantage was formulated initially by Hayek (1945). While analyzing the effect of knowledge on society, Hayek stressed that local governments possess better access to local preferences and, consequently, have an advantage over the central government in deciding which provision of goods and services would best satisfy citizens. The advantages of decentralization for preference matching, however, have been disputed (Breton 2002) on the grounds that higher-level governments are quite capable of matching services to preferences, whereas lower-

levels may lack incentives and capabilities of doing so effectively (Tanzi 2002). Important theoretical contributions have been made based on the new political economy approaches (see Seabright 1996; Lockwood 2006).

### **Production efficiency**

Services and policies are expected to be more efficiently provided at lower levels of government. Such provision would require that the same outcomes require fewer inputs or, alternatively, that the same quantity of inputs produces more output and better outcomes. Decentralization is posited to operate through the production function by reducing waste and corruption, and by searching for innovative techniques. An important part of the literature on federalism stresses its virtues as a laboratory for innovation in government. Better outcomes can be achieved when more effective policies are introduced. This argument has often been used when comparing the outputs of centralized school systems with those of decentralized school systems. Using Bradford, Malt, and Oates's (1969) terminology, direct production will be changed, whereas desired outcomes remain the same when decisions are taken locally. Production efficiency can be impaired when economies of scale are important, although the effect of the latter may be substantially reduced by separating provision from the production of goods or services (outsourcing, contracts with other levels).

Under a more modern political economy approach, inter and intrajurisdictional competition would be important in ensuring effective outcomes (Lockwood 2006).

### **Regulation poses a constraint**

The potential benefits of decentralization may be reduced by stipulations in constitutions, national legislation, or by regulation. The scope for preference matching may be reduced from the imposition of uniform standards of service delivery; or through introduction of constraints on the use of inputs, such as for education, such as minimum or maximum size of classes; or through restrictions on the choice of policies. Stringent constraints may arise for health care, for example prohibitions on subcontracting services to the private sector. Similarly, in the education sector, obligations may be imposed for different purposes, such as to preserve the responsibilities assigned to teachers' and parents' boards.

On the other hand, the benefits of decentralization can be increased by concomitant central government policies. Thus, examination of similar assignments in two different circumstances may yield different evaluations of decentralization, posing difficulties for empirical research.

## **B. Political Economy Approaches**

Political economy, or positive, approaches to decentralization take into account the incentives faced by different “players,” including governments and their associated politicians and officials. These incentives are affected principally by the interactions between policy instruments, in particular the design of transfers and revenue assignments, as well as the extent to which there is full information on the sources and uses of funds at each level of subnational government. We examine these issues in turn.

### **Interlinkages between revenues and transfers**

Political-economy approaches emphasize subnational accountability. As argued in Ahmad and Brosio (2006) and Ambrosiano and Bordignon (2006), it is difficult to achieve accountable subnational service delivery without own-source revenues at the margin for the subnational governments. Given indivisibilities in tax administration, the result could be varying capabilities for subnational administrations in their prospects for generating own-source revenues (Breton 2002). Indeed, with the exception of the United States, Nordic countries and Switzerland, subnational governments in OECD countries exercise relatively limited taxing powers in general (particularly with respect to control over rates as well as overall contributions to financing subnational spending); see Table 2. The low averages hide considerable variations of own-source revenues as percentages of total local financing within countries because the smaller and weaker local governments tend to have relatively low capacities to implement what little is assigned to them.

Here, then is a role for the central/federal government to play in the design of transfers. Excessive reliance on special-purpose transfers negates subnational autonomy. Properly designed equalization or untied transfers should reduce the central/override of subnational preferences, yet evidence suggests that the magnitude of central equalization transfers may have an effect on incentives (e.g., the case of Sweden, see below).

### **Transparency and public expenditure management requirements**

Transparency is critical for the full implementation of “competition” and constraints on the behavior of local governments. It is also important in informing local electorates about the performance of their government in relation to local expectations as well as in relation to those in neighboring jurisdictions. Timely, accurate, and standardized information is also critical for the central/federal government to maintain macroeconomic stability.

**Table 2. Subnational Government Taxing Powers in Selected OECD Countries, 1995<sup>1/</sup>**

	Subnational Government Taxes Related to:		Discretion to Set Taxes 2/	Summary Indicator of Taxing Power 3/
	Total taxes	GDP		
Sweden	32.6	15.5	100.0	15.5
Denmark 31.3		15.5	95.1	14.7
Switzerland 35.8		11.9	92.4	11.0
Finland 21.8		9.8	89.0	8.7
Belgium 27.9		12.4	57.9	7.2
Iceland 20.4		6.4	100.0	6.4
Japan 24.2		6.8	90.3	6.1
Spain 13.3		4.4	66.6	2.9
New Zealand	5.3	2.0	98.0	2.0
Germany 29.0		11.1	12.8	1.4
Poland 7.5		3.0	46.0	1.4
United Kingdom	3.9	1.4	100.0	1.4
Netherlands 2.7		1.1	100.0	1.1
Austria 20.9		8.7	9.5	0.8
Portugal 5.6		1.8	31.5	0.6
Czech Republic	12.9	5.2	10.0	0.5
Hungary 2.6		1.1	30.0	0.3
Norway 19.7		7.9	3.3	0.3
Mexico	3.3	0.6	11.2	0.1

Source: Ambrosiano and Bordignon (2006), based on OECD data.

1/ The countries are ranked in descending order according to the value of the summary indicator of taxing powers.

2/ The figures show the percentage of their total taxes for which subnational governments hold full discretion over the tax rate, the tax base, or both the tax rate and the tax base. A value of 100 designates full discretion.

3/ The summary indicator is the product of the ratio of subnational governments taxes to GDP and the degree in the discretion to set taxes. Thus it measures subnational government taxes with full discretion as a percentage of GDP.

Unfortunately, many local governments in OECD countries and other parts of the world have less than complete generation of information on decentralized operations. This lack of information makes the decentralization process prone to “capture” or misuse and also makes it difficult for the central government to conduct macroeconomic policy. The need for standardized reporting and accounting, and timely information flows, is now increasingly emphasized in the literature on accountable governance (see Ahmad, Albino-War, and Singh 2006).

#### IV. WHAT IS THE EVIDENCE?

In evaluating the potential benefits, it is clear that decentralization can be promoted by different motivations. Furthermore, different institutional, or even political, conditions may play significant roles in determining the results or outcomes service provision. Before describing the few empirical studies that provided relevant information for OECD countries, it may be worthwhile to address some issues that have a bearing in evaluating the conclusions of these studies.

Economists tend to focus on efficiencies. These considerations are, for example, the focus of Hayek (1945) and Oates (1993). They implicitly assume that the primary motivation for initiating or developing a process of decentralization should be the promotion of efficiency or, even, as Oates argues, economic growth. Given a well-working democratic process, good governance, and adequate statistical information that would be a component of an effective public expenditure management system at the local level, a better matching of preferences and use of resources would be expected to result in a higher level of service provision and efficiency. Unfortunately, the world tends to be more complicated than economists assume.

Fiscal decentralization is an eminently political process. Political processes are rarely driven exclusively by purely economic considerations. The promotion of economic efficiency infrequently leads countries to initiate decentralization. In most countries, not just in OECD nations, fiscal federalism, or fiscal decentralization, is prompted by the desired of residents of some regions to increase their independence from the national government so as to achieve a greater say in the economic, political, and cultural decisions that affect them. The use of the virtually extinct Basque language was significantly boosted by tax incentives and spending provided by the government of the Basque region, which could hardly be considered an efficiency-enhancing policy. Thus, the desire for differentiation—rather than economic efficiency—often plays a determining role. The more culturally or ethnically identified the population of a region is, the greater the likelihood that the region will push harder for decentralization.

Political motivations for fiscal decentralization have been obvious and central in most of the OECD countries that in recent years have chosen to pursue decentralization policies. In France the cultural differences of the population of Corsica and of its non-European territories clearly played a major role. In Spain, regions with distinct cultural and linguistic characteristics, such as Catalonia and the Basque Country, were at the forefront of the political movement for decentralization. In Italy the push toward fiscal federalism came mainly from the Northern League, a political party with strong regional roots that at times considered its members to belong to an ethnically distinct group (the Lombards). In the United Kingdom the Scots played a leading role. In Canada the province of Quebec and its French-speaking population threatened to secede and create an independent state. All these cases imply that the economists' motive for fiscal decentralization—the search for the efficient use of public resources—is not likely to be the original impetus to decentralize. Therefore, the connection between decentralization and enhanced service provision should not be expected to be close.

Decentralization extends greater control over spending and other decisions to subnational governments. This control may result in increased levels of subnational spending or in a reallocation of existing spending. Greater spending raises the question of how to finance the increases. Reallocation challenges the degree to which local spending decisions can be allowed to diverge from nationally established norms. Such norms inform education

standards, access to, or procedures for, health services, pensions, public assistance, or other functional categories of public spending, categories accounting for a large share of total public spending in most countries. These norms and expenses are at the base of universal public programs that have led to sharply increased public spending since the Second World War. It is thus easy to see why problems often arise between national and subnational governments. These problems are magnified by a dynamic world in which new technologies and new views about the role that the state should play in the economy are always changing. These changes must be reflected in revised policies. The elasticities with respect to time of various categories of public spending, and particular taxes, will diverge, implying the need for ongoing adaptation of the national and subnational roles. Adaptation can come about through constitutional amendment (as in Italy and Brazil) or through reinterpretation of the constitution and the passage of new laws. When this adaptation is complex, major difficulties may arise.

Political arrangements about fiscal federalism or decentralization in general are essentially contracts between the political representatives of national and subnational governments. As in the case for all legal agreements that extend into the future, these contracts cannot specify and anticipate possible developments that may require rewriting of the original contract. For this reason, unless the occasional rewriting of the contracts is relatively simple and possible, a powerful referee to help settle future disputes is needed. In the case of the United States, the nature of the existing arrangements between the states and the federal government are reinterpreted by the Supreme Court, in the absence of difficult-to-make constitutional changes. The Court's decisions are not challenged. In other cases in which a powerful referee is absent, constitutional changes are required, and they are never easy.

In most decentralized countries, efficient and broadly accepted mechanisms for reducing frictions and settling disputes between national and subnational governments are not available. It is thus much more difficult to accommodate the changing needs of particular regions. These frictions can create tensions and, at times, even lead to terrorist movements. When different regions that are part of the federal state have broadly similar per capita incomes and taxable capacities so that horizontal imbalances in fiscal resources are not significant, it will be easier for the national governments to delegate some responsibilities or mandates to the regions (or other subnational institutions) for particular categories of public spending. Such delegation will give the latter a better chance to match expenditures with local preferences. When, in addition, tax bases can be transferred to the local governments and there are no significant economies of scale in the administration of the transferred taxes, fiscal decentralization will have a greater chance of success, which is broadly the U.S. situation.

Regions, though, may vary significantly in per capita incomes and taxable capacities, and there could be significant economies of scale in the administration of taxes. In this case, fiscal decentralization will require the national government to tax richer regions and transfer

financial resources to the poorer ones. These transfers are easier politically when they take place implicitly within a unitary country in which particular expenditures (education, health, and unemployment compensation) are made within a system in which subsidies from richer to poorer regions are largely buried in administrative budget. In some countries, such as Italy, decentralization has been spearheaded by the citizens of rich regions who complained that too large a share of their incomes was being taxed away to subsidize less productive, or less hard-working, individuals in poorer regions. Making the transfers explicit, in a decentralized setting, could make them less likely, thus endangering the redistributive role of the state and the maintenance of uniform national standards.

Tax administrations are likely to be characterized by economies of scale because of the large fixed costs that they require for buildings, equipment development of particular procedures, etc. In a complex world with modern taxes, small tax administrations are unlikely to be efficient. Furthermore, when they operate in small geographic areas, where tax administration employees and taxpayers both reside and have friends and relatives, interpersonal relations are likely to be important. Familiarity is often a major ingredient for the development of practices that diverge from arm's length. In other words, corruption is often more likely to develop at the local level than at the national level. It has been a common assumption on the part of public finance experts who observe the tax system in the United States that corruption has been rare in the (national) Internal Revenue System, whereas cases of corruption have been more frequent at the local level. Similar considerations apply to other actions such as those of zoning boards and areas of outsourcing such as garbage collection. When local governments are relatively small and when administrators and citizens are close because of family, friendship, community, or other ties, it is more difficult to put relationships at arm's length.

Local tax administrations can also suffer from the mobility of employees, financial capital, and economic activities. It is easier for employees to move within the same country than across national borders. Those who move may be the ones with the greatest taxable capacity. Given that important services such as health and education can now be bought from many sources in different places, taxpayers may choose to be in the locales with lowest taxes and buy health and educational services at the most convenient place. Thus, the argument that high taxes correspond to better services for the specific individual does not carry much weight. Even in well-working federations, such as the United States, tax competition is a major issue. Here, though, it is tempered by the full exchange of information on taxpayers that exists between the national government and the governments of the states. This efficient exchange of information on taxpayers is not common between governments. For all these reasons, the relationship between fiscal decentralization and efficiency in the use of fiscal resources should not be expected to be particularly close.



### A. Summary of the Literature

A number of papers discuss decentralization outcomes in industrial countries<sup>4</sup> or provide international comparisons. The cross-country studies are generally constrained by limited availability of comparable data to use a reduced-form relationship between decentralization and efficiency.<sup>5</sup> Assessments for single countries can, potentially, overcome the control variables issue and provide firmer results. Many studies use data from different sources, mainly budgets, administrative sources, and household survey data. Assessments based on household data in particular illustrate a promising avenue of research. A typical model of the demand and supply of locally provided public goods, which serves to illustrate some of the key concepts of allocation and production efficiency, is presented in the appendix.

The empirical literature on decentralization and efficiency can be arranged in four distinct groups. The first and largest group of studies refers to decentralization and production efficiency.

The second group refers to preference matching and decentralization. Preference matching is important for OECD countries considering the importance of cultural and ethnic motivations for decentralization. Relatively few papers address this issue, however, and most consider it jointly with growth issues.

A third and smaller group of papers relates decentralization to convergence of service delivery levels. According to this literature, decentralization should decrease convergence when heterogeneity of preferences and disparities of economic conditions prevail. This theory, however, does not imply that centralized provision ensures uniformity of levels. For example, in Italy major differences can be observed among regions at different levels of development in their actual levels of centrally provided services, such as tax administration, education, health, or postal services. These differences may reflect neglect by national politicians, slack and bureaucratic capture in deconcentrated agencies. It is expected that decentralization could bring convergence, particularly if accompanied by introduction of uniform standards and effective transfers.

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<sup>4</sup>Several papers are on Spain, which provides excellent opportunities for testing theories about the effect of decentralization (some are summarized in Table 3 and discussed below). First, Spain has experienced an important process of fiscal decentralization since the reestablishment of democracy and the its constitution of 1978. Second, the timing of decentralization has not been equal for all Autonomous Communities (AC). Some ACs have assumed devolved responsibilities earlier than others, thus allowing researchers to examine decentralization effect with reference to two distinct samples: one with decentralized and the other with still centralized responsibilities.

<sup>5</sup>The dependent variable is usually a comparable but simple indicator of policy outcomes, whereas decentralization is represented by fiscal indicators based mostly on the relative shares of central and subnational governments in total national public expenditure, revenue, or both.

Finally, a large fourth group of papers examines decentralization and growth. Although it is difficult to argue that overall economic growth could depend on decentralization, one of the crucial goals pursued by local politicians is the promotion of growth in their areas, which may have an effect on overall growth. The origins of the literature linking decentralization to growth can be traced to Oates (1993), who argued that the gains from decentralization should also apply to a dynamic framework of economic growth because centrally determined policies do not adequately consider local conditions in the provision of public goods and services, such as those regarding infrastructure and education. It is argued that economic growth might accelerate with decentralization if more resources go to public investment; health and education policies are better targeted to growth, and, in sum, the result is more growth. In other words, local preferences are growth oriented. A simpler approach focuses mostly on productive efficiency. The main hypothesis is that if decentralization promotes more efficient use of resources, it should also result in higher rates of growth for the entire economy.

A number of arguments question positive links between decentralization and growth. For example, decentralization could work against growth if it discourages big investment projects with growth-conducive spillovers across regions. It may discourage the production of genuine public goods. Moreover, political objectives may emphasize equity more than growth: elected politicians want results within their terms in office.

### **Production efficiency**

Barankay and Lockwood (2007) examine the relationship between educational outcomes and decentralization in Switzerland. They demonstrate that: (1) it is possible to overcome most of problems associated with information constraints; and (2) decentralization does, in fact, contribute to improved outcomes. In Switzerland responsibility for education has always been cantonal, although the federal government equalizes across cantons. Cantons can devolve some expenditure responsibilities to their local governments, and they effectively do so. It is thus possible to observe different degrees of decentralization in education between cantons.

**Table 3. Summary of Literature on Productive Efficiency and Convergence**

Author(s)	Countries of Reference	Period of Reference	Dependent Variable	Decentralization Index	Main Results
Ahlin and Mörk	Sweden	1989–2000	Convergence in per student spending and teacher–pupil ratio	Regulatory variables	Little evidence on convergence
Balaguer-Coll, Prior, and Tortosa-Ausina	Spain (1,315 municipalities)	1995–2000	Output of local services	Range of responsibilities (regulatory and fiscal)	Decentralization increases efficiency
Barankay and Lockwood	Switzerland (26 cantons)	1982–2000	Education attainment	Fiscal and regulatory: local on cantonal expenditure controlled for regulatory powers	Decentralization increases efficiency
Cantarero and Pacual Sanchez	15 EU member countries	1993–2003	Infant mortality ratio and life expectancy at national level	Fiscal decentralization: local on total expenditure	Decentralization improves outcomes
Crivelli, Filippini, and Mosca	Switzerland (26 cantons)	1996–2001	Expenditure and input measures for health	No specific decentralization index	Huge disparities associated with decentralization and federalism
Jakubowski and Topinska	Poland (local governments)	1999–2003	Various variables referring to education	Fiscal regulatory decentralization	Mixed results
Jimenez and Smith	Canada (10 provinces)	1979–1995	Infant mortality rate	Fiscal decentralization	Decentralization reduces infant mortality
Montero-Granados and de Dios Jiménez	Spain (17 autonomous communities)	1980–2001	Life expectancy at birth and infant mortality	Regulatory (before and after devolution of responsibilities)	No clear convergence: regions with low levels improve, but greater dispersion of outcomes emerges
Robalino, Picazo, and Voetberg	High-income countries, Spain	1970–1995	Infant mortality ratio	Fiscal decentralization: subnational on total national expenditure	Positive effect declining with increases of GDP
Salinas Peña	Spain (50 provinces)	1980–2003	Survival rate: proportion of students in last course of compulsory education who have access to noncompulsory education	Regulatory (before and after devolution of responsibilities)	Decentralization is associated with positive outcomes

Source: Authors.

Educational outcomes in the study are measured by the number of 19-year-olds that pass the final exams (*Maturité*) to enter universities.<sup>6</sup> The index of decentralization is measured by share of education expenditure by the local governments in each canton over the sum of local and cantonal expenditure for education. In other words, the index shows the degree of education expenditure within each canton:

$$D_{ct} = \frac{LE_{ct}}{LE_{ct} + CE_{ct}},$$

where  $D_{ct}$  is the index of canton  $c$  in year  $t$ ,  $LE_{ct}$  is the sum of education expenditure in all counties of canton  $c$  in year  $t$ , and  $CE_{ct}$  is education expenditure at the cantonal level in year  $t$ .

The use of a purely fiscal variable, such as the expenditure share, entails the risk that it does not adequately represent the degree of effective autonomy of local government. To solve the problem, Barankay and Lockwood (2007) examine cantonal regulations in four crucial areas for education: (1) appointing teachers; (2) determining pay levels for teachers; (3) granting teachers' incentives; and (4) organizing the structure of school. Apparently, decentralization of expenditure is closely associated with higher local decision-making power, especially for teachers' incentive pay. Local government expenditure for education is mainly for teachers' salaries. Thus, when the number of teachers or the pay levels increase, the degree of decentralization also varies within cantons. Secondly, variation in expenditures for teachers' salaries is induced by changes in the size of the student population. If it increases, local government will have to provide more teachers, because cantons impose minimum class sizes. Also, changes in student numbers induce changes in the indicator of decentralization. Variations in outcomes can thus be meaningfully associated with changes in decentralization if the number of students does not affect outcomes.

Finally, Barankay and Lockwood (2007) regress for 20 years (1982–2002) the *Maturité* results on their chosen index of decentralization after adding a number of variables that control use of inputs and canton and year-fixed effects. Results show that educational attainment is positively and significantly related to the degree of decentralization. The absolute effect of education is also substantial. According to the estimate, if the decentralization index increases by 10 percent, the share of students obtaining the *Maturité*

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<sup>6</sup>Some problems should be noted in applying this measure of outcome. Cantons are mostly responsible for upper-secondary education, whereas local governments are fully responsible for primary education. Their expenditure and policies are thus effecting minimally on *Maturité*. To partially account for this fact, Barankay and Lockwood (2006) relate results at *Maturité* to the degree of decentralization in the years when the concerned students were enrolled in primary schools, but clearly the main effect on *Maturité* derives from years spent in secondary education. Finally, there is no federal intervention in exams that could ensure uniformity of criteria.

increases by 3.5 percent. Thus, cantons seem to play an important role in ensuring effective outcomes.

It should be noted, however, that since the paper was written, the system of transfers in Switzerland has been reformed. The authorities believed that the previous system, in which transfers are linked to variables under the control of cantons, provided an incentive to increase costs, thereby generating macroeconomic inefficiencies.

Salinas Peña (2007) conducted a similar analysis of Spanish schools. Spain provides, through its asymmetric regionalization, a unique opportunity for checking the outcomes of decentralization. The central government has retained the responsibility for defining the structure of, and setting national guidelines and standards for, education policies, leaving other competencies to the regions. Peña uses as an indicator of outcomes the share of students who complete postsecondary education (*Bachillerato*) in relation to those enrolled in the last year of compulsory education, assuming that a high level of educational quality will induce students to stay at school. Typical variables explaining educational outcomes, such as family income or the size of classes, are used for control purposes, although a few dummies are used to distinguish between regions that acceded to education responsibilities in different years. The fiscal discipline of regions is controlled via the introduction of the surplus/deficit in the regional budget. Different specifications of the chosen model are tested. The results reveal some problems referring to the control variables, most of which do not show the expected sign. Decentralization is positively and significantly correlated with the survival rate in two out of three specifications. Earlier decentralized regions, however, are at the same time those with a higher per capita income. Because income is also a determinant of the survival rate, the link of the latter with decentralization is somewhat blurred. The dependent variable is also correlated positively with fiscal discipline, supporting a basic tenet of decentralization theory: the benefits of decentralization are also dependent on the quality of decentralization.

### **Distributional effects**

The use of household surveys facilitates assessment of the access of poor and disadvantaged individuals and of the personal characteristics of users. When combined with fiscal and administrative data, household surveys can potentially allow for an examination of both efficiency and equity. Jakubowski and Topinska (2006) use this methodology to evaluate the results of decentralization on education and health care in Poland.

Decentralization has been more extensive in the former sector. Local governments, *gminas*, have taken on increased responsibilities for preschool and primary education since early 1990s. Central government still regulates teacher qualifications, contracts, and salaries; supervises schools, defines curriculum, and accepts textbooks. Local governments (and provinces, *powiats*, in the case of secondary education) own schools and, in principle, are

responsible for the way educational services are provided. In practice, their rights are importantly limited by laws, decisions of Ministry of Education, and high autonomy of school principals. After 1999, almost all funds for public education were transferred to *gminas* through a block grant. On average, central transfers finance 70 percent of education expenditure, with the rest covered by own sources of revenue.

The effect of decentralization is evaluated from distinct points of view. First, the availability of service for kindergartens (derived from administrative data) decreased—the percentage of *gminas* with kindergartens fell from 82 percent to 78 percent (73 percent to 66 percent in the case of rural *gminas*). More importantly, many *gminas* closed their kindergartens with some of them completely eliminating the provision of such services in their area. As a result, variation between *gminas* relating to preschool accessibility increased overall, but with some dramatic regional differences.

Second, household survey data are used to explore more closely the effect of decentralization, using before and after comparisons linking preschool enrollment rate to per capita expenditure and a poverty indicator. As expected, the higher the spending of *gminas*, the higher the probability of sending a child to a kindergarten. There is neither an appreciable higher access for the poor households, nor a better use of expenditure as a result of the comparisons, however.

The results differ somewhat for primary and lower secondary schools. The authors observe that after decentralization there is a lower variation between *gminas* relating to expenditure per student. They attribute this finding to: (1) the new grants, based on objective costs rather than historical costs; (2) increased efficiency from reorganization of the school network; and (3) shifting of resources from unregulated preschools to other level of education, subject to stricter central regulations.

Further analysis of primary education shows that expenditure per pupil increased in constant terms, after an initial decline, which would imply that no efficiency benefits are derived from decentralization. Household surveys also allow for an analysis of the effect of decentralized policies, specifically of local expenditure on poor families relative to rich families. The study on Poland also shows that decentralization has not had an appreciable effect on the poorest: the share of local public expenditure on education devoted to the advantage of the poorest quintile of the population is unchanged over the centralized system.

Jimenez and Smith (2005) try to trace out the effect of decentralization on health care outcomes proxied by infant mortality, with reference to Canada during the period 1975 to 1995. Among Canadian provinces, infant mortality shows higher variation than life expectancy. First, the authors attempt to check the production efficiency of decentralization with a single-step model, where infant mortality is regressed on a decentralization index and a number of control variables. Second, they proceed to estimate a two-step model. In the first

step, provincial expenditure for health is regressed on the index of decentralization and on a number of control variables, such as transfers from the central government, private-sector expenditure, birth rates, and the like. In the second step, the authors proceed again to check the effect of decentralization on infant mortality by substituting actual provincial expenditure for education with an estimated one. The purpose of the two-step exercise is to control the effect of decentralization on preference matching and then to proceed to control the efficiency effect.

The results show a negative and significant relationship between infant mortality and the decentralization. More specifically, reduction of mortality is closely dependent on provincial expenditure on health: roughly a 1 percent increase in provincial expenditure on health stimulated a 3.8 percent reduction in infant mortality.

Unfortunately, the reliability of the results is reduced by the indicator of decentralization used, which is based on the provincial share of total health care in that province.<sup>7</sup> By not controlling for the effective subnational decision-making power, the index shows mostly the propensity to spend for health by a provincial government and its municipal governments. Moreover, as federal expenditure in each province is not a substitute for subnational expenditure; its relative size is not an indicator of degree of decentralization of expenditure.<sup>8</sup> Balaguer-Coll, Prior, and Tortosa-Ausina (2006) examine a sample of Spanish municipalities during 1995 and 2000. They attempt to estimate the effect of decentralization on typical municipal services, that is, those that constitute the backbone of any decentralized system. The study tries to evaluate the gains in productive efficiency brought by decentralization by using a nonparametric estimate of the efficiency frontier. The study links inputs used—more specifically municipal expenditure—to a number of indicators of municipal output, such as the waste collected and surface of public parks, and then select the most efficient units. The authors distinguish between (small) municipalities with fewer responsibilities and medium

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<sup>7</sup>The indicator is represented by the following formula:

$$D_{pt} = \frac{MEH_{pt} + PEH_{pt} + SSF_{pt}}{MEH_{pt} + PEH_{pt} + SSF_{pt} + FEH_{pt}}$$

where  $MEH_{pt}$  is health expenditure by all municipalities in year  $t$ ,  $PEH_{pt}$  is provincial expenditure for health in the same year,  $SSF_{pt}$  is security funds by provincial expenditure, and  $FEH_{pt}$  is the federal government expenditure in the same province in the same year  $t$ .

<sup>8</sup>Consider a numerical example. In province A subnational expenditure for health is 80 and federal 20. In province B the same numbers are 10 and 90. The indicator will have a value of 0.8 in A and of 1.0 in B. It means simply that subnational governments in province A spend more for health than the corresponding governments in province B. This increased spending could be compensated by lower expenditure for education, but it is not referred per se to any difference in decentralization. On the other hand, federal expenditure is for native Canadians, military personnel, inmates of federal penitentiaries, and the Royal Mounted Police, which has no relationship with decentralization.

and large municipalities with extended responsibilities. After controlling for the operation of scale economies, municipalities with wider responsibilities should be ahead in the decentralization process. The results show that average efficiency is higher for large and medium-sized municipalities and that the differences tend to grow larger over time (a proxy for increased decentralization).

Robalino, Picazo, and Voetberg (2001) provide one of the few cross-country studies for industrial economies. In their empirical model, they regress infant mortality on the ratio of expenditure managed by local governments relative to that managed by the central government. They also introduce a few control variables, which refer to institutional capacity, such as political and civil rights, and corruption. These variables allow the authors to control the quality of political institutions. Without reference to the actual use of inputs, however, one cannot perform a thorough assessment of production efficiency (with the partial exemption of GDP). The sample of low- and high-income countries is not specified. The results show that outcomes are positively correlated with decentralization. They also show that the marginal effects of decentralization diminish as GDP increases. This finding, if validated with other empirical evidence, would be an interesting result. It would mean that when countries grow, their institutional capacity increases and thus the advantages of decentralization are likely to vanish because the presumed differences between central and local management of public affairs disappear.

Cantarero and Sanchez (2006) provide a similar analysis for 15 EU countries. Their results, however—positive association between outcomes in health and decentralization—are weakened by, among other factors, their use of nationwide indicators.

### **B. Convergence of Service Provision Across Areas**

A small but increasing number of studies analyze convergence across areas of levels of service provision. Empirical observation seems to confirm the theory—for health care in Switzerland, one of the most decentralized countries of the world. With respect to health care, the role of the federal government is limited to funding of health care to poor people (federal expenditure is 20 percent of total national health care) and to the definition of basic packages of health insurance (Crivelli, Filippini, and Mosca 2007). Provision of health care shows huge disparities between cantons, whether measured in terms of expenditure, use of inputs, or outcomes, such as differences in mortality rates amenable to absence of timely and effective care (Crivelli, Filippini, and Mosca 2007). Decentralization, if it is not accompanied by the imposition of strict national standards on service levels and if substantial equalization grants are not provided, will increase disparities in levels of service delivery.

Montero-Granados and de Dios Jiménez (2007) do not provide an analytical framework, but they test the convergence hypothesis with reference to the Spanish regions in the health sector. Health care is provided by a national health system funded (with the exception of Navarre and the Basque Country) by general taxation and small user copayments. Standards



are determined by the central government, whereas regional authorities are responsible for planning, organization, and management of health care and are provided with a centrally determined block grant allocated according to an unadjusted capitation formula. The authors use two measures of convergence derived from the literature on growth: the sigma ( $\sigma$ ) convergence and the beta ( $\beta$ ) convergence. The first measure is based on changes of standard deviation over time. When variation declines, there is more homogeneity of outcomes, or of behaviors. According to the second measure, convergence increases when laggard regions improve quicker than more advanced.

Outcomes of health care include life expectancy at birth and infant mortality, whereas decentralization is measured by access of regions to health responsibilities. The authors also use a host of variables, other than decentralization, that are expected to affect outcomes. The results show convergence taking place at the extremes. That is, less developed regions improve faster than more advanced regions, although in the middle there is a big increase in variation. These results are open to interpretation. One could say that decentralization fills the most optimistic expectations because the difference between the rich and the poor regions are leveled and, at the same time, individual (middle) regions adjust to their preferences. One can also argue that the results confirm that there is little to expect in terms of homogeneity from decentralization.

Ahlin and Mörk (2007) analyze the effect on convergence in the Swedish education sector of different stages in decentralization. Sweden took three major steps to decentralize its education system. In 1991 formal responsibility for compulsory, upper-secondary, and adult education was moved to the local government level. Teachers were transferred to municipalities, but salaries, as well as curricula and national evaluations, were still determined centrally. Distinct specific grants for education, such as for books and school facilities, were unified into a single specific grant. In 1993 all sector-specific grants—such as those for education, health, and social protection—were unified into a single block grant, giving municipalities the freedom, for example, to move resources from education to social protection (or vice versa). In 1996 teachers' wage setting was moved to municipalities and a new block grant system was introduced, based on revenue and cost equalization. Note that since 1992, the central government introduced public funding for independent schools, thus generating more competition between public and private education. Convergence is analyzed with reference to two typical input indicators: per pupil spending and teacher-pupil ratio. Ahlin and Mörk (2007) show that no appreciable change has taken place in the pattern of per pupil spending, although variation in the teacher-pupil ratio has decreased over time. The authors explain the surprising result (challenging traditional theory) in terms of the strategic interactions between local politicians—local choices are constrained by neighboring municipalities' choices. They do not control for the varying equalizing effect of different systems of grants, however. Subsequent regression analysis shows that, with decentralization, higher reliance on own-source revenues had an effect on per pupil expenditure, but it may have been neutralized by the equalization grants. Thus, the power ceded to local governments

by decentralization of responsibilities may have been offset by the ability of the central government to influence local choices through the allocation of grants.

### **Preference matching**

The empirical literature on industrial countries exclusively devoted to preference matching is still relatively small. In fact, most studies link preference matching with growth, as illustrated below. A well-structured and accurate analysis is provided by Strumpf and Oberholzer-Gee (2002) with reference to regulation of the liquor sales in the United States between 1934 and 1970. In 1933 the Prohibition Act was repealed, and the states were made responsible for liquor control. States then chose between centralized/statewide regulation or devolution of regulation to their local governments (counties, municipalities, and towns). Initially, seven states prohibited sale of package liquor, whereas among nonprohibitionist states 20, and later 34, devolved regulation to their local communities, where the issue was decided in local elections.

Strumpf and Oberholzer-Gee (2002) construct, and test with regression analysis, a model predicting that decentralization of regulation would be observed in states with huge heterogeneity of preferences on liquor sales, whereas centralization should prevail with less extreme disparities. The test is conducted in two sequential stages. The first stage refers to counties (3,100) where the tastes of the decisive voters are estimated using variables that, according to the literature, should influence attitudes toward liquor, such as religious affiliation and socioeconomic variables. Tastes will predict the policy—wet or dry—adopted by the community. The second stage refers to states and is based on regression of decentralization of policy with two measures of within-state taste heterogeneity. The results show that the states with more heterogeneous preferences have been more prone to decentralize.

Arze del Granado, Martinez Vasquez, and Mc Nab (2005) provide specific empirical testing of preference matching, also with reference to developing countries. More precisely, they analyze the effect of fiscal decentralization on the provision of publicly provided private goods, such as health and education. The analysis is based on 45 developed and developing countries between 1973 and 2000. The dependent variables are the share of local health and education expenditure on total local expenditure, whereas the independent variable is the share of local total government expenditure. The results show that decentralization brings about an increase of the share of these two categories of expenditure, but the generality of the findings may be questioned. Because there is no evidence—only a general presumption—that more expenditure for health and education means effectively in every country better adaptation to local preferences, more spending for these two sectors could simply be because these sectors are the ones where decentralization has taken place.

Faguet's study (2004) looks at preference matching in a developing country, Bolivia. It assesses how decentralization affects the composition of local expenditure by sector in line with citizens' preferences and does not address the growth effect. Although there are problems derived from the budget information used, the studies exert considerable effort in singling out local preferences for expenditure. This effort has been challenged, however, especially concerning the effectiveness of local service delivery in general, given the overall levels of dissatisfaction with the process, unspent monies, and inefficiencies in spending that have been stressed by donors and international agencies, as well as the authorities. A fundamental rethinking of the decentralization process is under way in Bolivia.

Solé-Ollé and Esteller-Moré (2005) analyze the effect of decentralization on the pattern of investment in roads and education facilities from 1977 to 1998 in Spain. Their paper is well constructed, although it is not strictly a test of preference matching, but rather an efficiency test of spending decisions. The main focus of the analysis is, in fact, testing, if after decentralization investment decisions have been more closely targeted to effective needs, such as more road construction in congested areas and more school construction in areas with higher student population growth, and if investment activities have become more cost conscious. The results show that, with decentralization, the regional allocation of investment in these two sectors has become better adapted to local conditions and needs, thus showing a higher level of efficiency than under the previous centralized regime.

### **Decentralization and growth**

Although there is a great deal of empirical literature on the link between decentralization and growth (Table 4), there appears to be consensus that any relationship is relatively weak. Breuss and Eller (2004, 11) have provided a good survey of the main results.

The empirical literature refers to samples across countries, as in Thiessen (2000, 2003) and Ebel and Yilmaz (2002), and to distinct countries, such as in the papers by Behnisch and Stegarescu (2003) on Germany and by Feld, Kirchgässner, and Schaltegger (2004) on Switzerland. The empirical findings are mixed. Negative findings are more frequent for European countries and with a longer-term perspective.

In this chapter, we limit our consideration to the studies of Thiessen (2000, 2003), which are mostly devoted to OECD countries. The relationship between decentralization and growth is represented by a bell-shaped curve, meaning that when countries move from low to medium levels of decentralization, growth accelerates, but higher decentralization will reduce growth. Part of this explanation derives from the positive effects on capital formation resulting from decentralization. The key variables used, however—average rate of growth from 1973 to 1998 and average indexes of fiscal decentralization—raise a few doubts about the results even after other variables that affect growth are controlled for. In the case of Italy, most decentralization reforms were introduced in the 1990s, but growth declined in that period,

**Table 4. Decentralization: Preference Matching and Growth—Summary of Selected Papers**

Author(s)	Countries of Reference	Period of Reference	Fiscal Variables of Reference	Growth Variables of Reference	Decentralization Index	Main Results
Akai and Sakata (2005)	U.S. counties	1993–2000	n.a.	GDP growth rate	Fiscal with emphasis on tax autonomy	Growth is positively related to tax autonomy and specifically to nonbailouts
Arze del Granado, Martinez Vasquez, and Mc Nab (2005)	45 developed and developing countries	1973–2000	Ratio of education and health expenditures to total public expenditures	n.a. Fiscal	decentralization	Likely increase of expenditure for health and education
Ebel and Yilmaz (2002)	19 OECD countries	1997–1999	Public sector's expenditure share of GDP	GDP growth rate		
Faguet (2004)	Bolivia (sample of municipalities)	1991–1996	Investment for education, water and sanitation, watershed management	n.a. Fiscal	decentralization	Increased spending in poorer areas
Jin and Zou (2002)	17 industrial and 15 developing countries	1980–1994	Subnational, national, and aggregate government size: the ratio of total expenditure at corresponding level to GDP	n.a. Fiscal	and regulatory decentralization	Increase of subnational expenditure and reduction of national expenditure
Solé-Ollé and Esteller-Moré (2005)	Spain (44 provinces)	1977–1998	Investment road and education	n.a. Fiscal	and regulatory decentralization	Better adaptation of investment to local needs
Thiessen (2000)	26 mainly developed countries	1975–1995	Annual growth rate of real gross fixed capital formation (as indicator of physical investment)	Growth rate of per capita GDP, total factor productivity growth	Fiscal decentralization	Growth initially increases but then declines with decentralization
Thiessen (2003)	14 and 21 high-income OECD countries	1973–1998	Average annual investment share in GDP	Log difference GDP per working-age person Average annual total factor productivity growth	Fiscal decentralization	Growth initially increases but then declines with decentralization

Source: Authors' survey.

whereas lower decentralization and higher growth characterize the previous years. Ireland has the highest rate of growth, but it has always been a highly centralized country. Norway has promoted some recentralization, but its high growth rate is due to oil. Japan is close to Ireland in the sense that no change toward decentralization is observable, but economic growth had declined there in the second half of the period.

### ***Convergence and divergence in regional rates of growth***

When countries decentralize, less developed regions fear losing in terms of growth, with less support from the central government. At first view, this view looks reasonable, although increasing divergence may be attributed to the peculiarities of the decentralization process. Akai and Sakata (2005) provide good analytical and empirical analysis for the United States. They distinguish between two different concepts and effects of decentralization. The first refers to decentralization of resources. The presumable effect of decentralization is to increase disparities among regions. Here the effect of decentralization will arise mostly through the expenditure multiplier. The second concept refers to decentralization as a commitment device. Decentralization occurs when subnational governments rely on their own sources of revenue with a hard budget constraint. In this case, regional efficiency in spending and self-reliance will be increased, with likely positive effects on growth. Akai and Sakata test their model with reference to an unspecified number of U.S. counties from 1993 to 2000. They also use a number of appropriate control variables to take into account many of the factors that affect growth. The results show that decentralization, as a commitment device, has a significant effect on the reduction of regional disparities in growth. The results by Akai and Sakata are confirmed by Rodriguez-Pose and Bwire (2003) with a detailed analysis of a group of five OECD countries, Germany, Italy, Mexico, Spain, and the United States, plus India.

The exploration of a link between purely regulatory decentralization and growth is also an important one. When subnational, particularly regional, governments are empowered with growth-related responsibilities, there are clearly new potentialities to foster growth, but regional growth-inducing policies can be construed at the expense of other regions. There are worries—for example, in Italy—of excessive regional regulation in growth-related sectors, such as the environment, health, and labor. These issues have been initially explored by Weingast (1995), who maintains that a federal system is market preserving if it has three characteristics: (1) subnational governments have primary regulatory responsibility over the economy; (2) a common market is ensured, preventing the lower governments from using their regulatory authority to erect trade barriers against the goods and services from other political units; and (3) the lower governments face a hard budget constraint; that is, they have neither the ability to print money nor access to unlimited credit. Weingast and others (e.g., Cao, Qian, and Weingast 1997; Lin, Tao, and Liu 2003) have made extensive empirical analyses of market-preserving federalism theory with reference to China. Unfortunately, similar studies for other—specifically OECD—countries are still missing. Again that may

have been the case during the early years of the economic reforms, but increasing inequalities and other potential constraints are likely to have changed the composition of the “growth engine” in recent years.

## **Conclusion**

Despite the often proclaimed benefits of decentralization for enhanced service delivery, efficiency, convergence, and growth, the evidence is at best inconclusive. The survey of the theoretical and empirical literature suggests the following conclusions that may have far-reaching policy conclusions:

- In theoretical terms, the claims that decentralization enhances service delivery fail to recognize the joint nature of the spending and revenue constraints, and lower levels of administration are likely not to have adequate own-source revenues for effective hard budget constraints, nor the budgeting and reporting infrastructure to make decentralization effective.
- There is relatively poor evidence to characterize effective changes over time, using comparable administrative and household data sets—for OECD or developing countries— although this lacuna is now beginning to be addressed.
- Links between decentralization and growth, convergence, efficiency, and the like are tenuous.
- Claims for improvements in developing countries may be due to the general development process and growth; linkages with decentralization are also tenuous. What evidence exists weakens even further as countries develop.

## APPENDIX

Let us introduce the standard model for the demand of a publicly provided good,  $g$  (see also Figure 1).<sup>9</sup> There are two regions, A and B, with homogeneous preferences inside. Region A has a higher per capita income,  $y$ , than region B. Explicit consideration of differences in income conditions will help clarify convergence issues in service delivery. Region A also has a higher voting population ( $N_A > N_B$ ). This difference is sufficient to ensure that region A's preferences will translate into national choices when a decision concerning the whole country has to be made. The citizens' preferences over  $g$  and a composite private good,  $x$ , are represented by

$$(1) \quad u = u(g) + v(x).$$

The total cost  $C$  of supplying the publicly provided good is

$$(2) \quad C = c(N, g),$$

with  $c'_N \geq 0$ ,  $c'_g > 0$ , while  $p = c/N$  is the per capita average cost of one unit of  $g$ . For the sake of simplicity, we assume that the production of  $g$  is subjected to constant returns to scale, but that cost depends on the degree of rivalry,  $\gamma$ , and on population,  $N$ . More specifically, for pure public goods, where  $\gamma = 0$ , the average per capita cost decreases with the population. For private goods, where  $\gamma = 1$ , the total cost is proportional to the population and the average cost is independent of the population. Thus,  $p_N \leq 0$ .

Concerning rivalry, we simply assume that  $p$  increases with  $\gamma$ , thus,  $p_g > 0$ . The cost of providing  $g$  is financed through a proportional income tax (or a bundle of taxes producing a total revenue that is proportional to income,  $y$ ). Total tax payments by individual voters are therefore  $ay$ , where  $a$  is the tax rate, chosen by the median voter. For individuals, the budget constraint is

$$(3) \quad x = y - ay,$$

whereas the government budget constraint is  $cg = aY$ , where  $Y$  is the total aggregate income. Letting  $t = Y/N$  be the per capita tax base, the budget constraint becomes

$$(4) \quad pg = at.$$

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<sup>9</sup>See Brosio, Cassone, and Ricciuti (2002).

Thus, individuals maximize their utility,  $U$ , by choosing the level of  $g$ , subject to equations (3) and (4), which can then be combined into a single constraint:

$$(5) \quad x = y - (pg/t) y.$$

The first-order condition is:

$$(6) \quad U'(g) = V'(x)py/t.$$

In Figure 1 the budget constraint is represented by the straight line from the origin, whereas the preferences are represented by indifference curves whose level increases as they move southeast (the two arguments have an opposite effect on utility). The slope is:

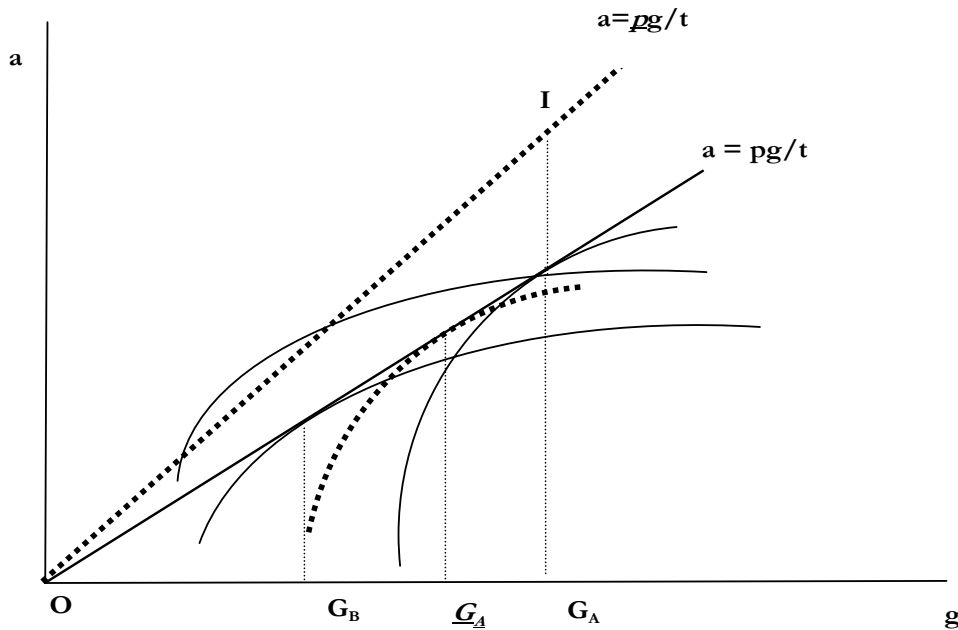
$$(7) \quad R(y, a, g) = da/dg_{U=U} = u'(g) / v'(x)$$

The slope of the budget constraint is:

$$(8) \quad da/dg = p/t$$

At the optimum, the slopes of the two curves are equal.

**Figure 1. Preference Matching and Production Efficiency**





Now let us observe in Figure 1 the preference-matching issue. Region A is richer than region B. Conventional wisdom, derived from experience, says that rich regions have a higher demand for public goods than poor regions, but this view is not granted by economic analysis. In fact, in the case of a publicly provided good, even if this good were a normal one, there would be no guarantee that the optimal quantity demanded would increase with income because the price—which is each individual's share of the total cost—will increase with the quantity. We thus face the usual problem regarding prevalence of the income versus the substitution effect. To have the demand for  $g$  increasing with income, however, we need to make an explicit, although reasonable, specific assumption.<sup>10</sup> In graphic terms, this assumption implies that the indifference curve of a rich individual (region) crosses that of a poor one only once and from below, as Figure 1 shows.

Thus, curves like  $U_A$  are those of the rich voters of A region, whereas curves like  $U_B$  represent the preferences of the poor, region B, voters. If  $g$  is provided by the central government according to the traditional hypothesis of uniformity across all regions, then the median voter will be a resident of region A and the quantity  $G_A$  is produced.

The optimal quantity for region B is  $G_B$ , which is smaller than  $G_A$ . The distance between the two types of  $U_B$  indifference curves in Figure 1 measures the welfare loss, which is the traditional result found in the literature of fiscal federalism: Centralization brings a welfare loss for those areas that have different preferences than those of the national median voter. The central government may have wrong perceptions of local preferences—in Figure 1 the dotted indifference curve shows its wrong perception of preferences of region A—and be able to only approximate the quantity preferred by the median voter, such as in the case of  $\underline{G}_A$ . In this case, both regions would suffer from a welfare loss. With decentralization, preference matching would be solved, with a gain in utility for both regions.

The second issue, production efficiency, may also be illustrated with the help of Figure 1. Here,  $P$  is the minimum cost, so  $G_A$  would ensure the optimum for region A because its preferred quantity is produced at the minimum cost, that is, with the minimum tax rate. The central government could be inefficient, however, by using the wrong combination or excessive quantities of productive factors. In that case, the price of the publicly provided good would increase and the slope of the budget line, the implied tax rate would be higher. This possibility is shown in Figure 1 by the dotted budget line  $a_i = pg/t$ , whose slope is now steeper because of the higher cost  $p$ .

In conclusion, decentralization could reduce cost if regions are able to select the appropriate combination of production factors or use only the minimum required quantity. Thus, technical inefficiency would be eliminated.

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<sup>10</sup>See Borck (1998) on this issue.

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