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**Article**

## Decentralising the public sector: What Drives Fiscal Decentralisation?

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## WHAT DRIVES FISCAL DECENTRALISATION?

UGO PANIZZA\*

This article summarises two papers in which I try to identify empirical regularities explaining cross-country differences in the level of fiscal centralisation (Panizza 1999) and look at the relationship between centralisation and secession (Panizza 1998). The issues discussed in this article relate to the recent strand of political economy literature that studies the optimal number and size of nations (Alesina and Spolaore 1997, 2003) and the optimal amount of public goods in countries with heterogeneous preferences (Alesina, Baqir and Easterly 1999).

I use the expressions fiscal decentralisation and fiscal federalism interchangeably to describe the institutional set-up of countries with more than one level of government. This is more general than a strict political definition that only refers to countries with a federal constitution. Although the constitutional set-up is extremely important (see, for instance, Persson 2003), countries that are not formally federal are often characterised by a large delegation of powers from higher to lower levels of government. In this context, the center of attention is not the presence or absence of a federal constitution, but the degree of centralisation.<sup>1</sup>

The traditional literature on fiscal centralisation can be divided into three main branches. The first branch studies the optimal division of powers between the central and local governments (Musgrave 1959; Oates 1972). One of the main results of this literature is the Decentralisation Theorem (Oates 1972) that identifies the conditions under which it is more efficient for local governments to provide the Pareto-efficient levels of out-

put for their respective jurisdictions than for the central government to provide a uniform level of output across all jurisdictions. One of the corollaries of the Decentralisation Theorem is that the benefits of decentralisation are positively correlated with the variance in demands for publicly provided goods.

The second branch of the literature concentrates on the role of organisation costs (Breton and Scott 1978). A decentralised system can reduce mobility and signaling costs, but it is likely to increase administrative and coordination costs. The optimal level of decentralisation is the one that minimises the sum of these costs.

The third branch of the literature emphasises the benefits of competition among jurisdictions. Tiebout (1956) studies how, in a system with many jurisdictions, agents can “vote with their feet” and locate in the jurisdiction that has policies that are closer to their preferences. While Tiebout concentrates on horizontal competition, Breton (1996) studies the benefits of vertical competition. According to this notion, different levels of government, in an effort to increase their “market share”, provide the citizens with the optimal type and quantity of public goods. Brennan and Buchanan (1980) claim that horizontal and vertical competition among different levels of government can be very important in containing the size of their budgets.

### A simple model of fiscal centralisation

The model studied in Panizza (1999) assumes that government produces one public good and that all individuals have the same income (the assumption of homogeneous income makes it possible to abstract from all the issues linked to income redistribution) but that they differ in their tastes for the type of public good.<sup>2</sup> Education is an example of



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<sup>1</sup> Vaubel (1966) studies the relationship between decentralisation and the presence of a federal constitution.

<sup>2</sup> Since it is not possible to capture in a single model the richness of the vast literature on fiscal centralisation, the focus of the model described here is simplification and unification. The model extends the framework developed by Alesina and Spolaore (1997) and Alesina, Baqir and Easterly (1999) to an economy with two levels of government.

publicly provided good on which preferences are often polarised: some citizens may prefer religious as opposed to secular schools or may favor the use of a specific language. It is assumed that the individuals are stratified and sorted according to their preferences for the public good.

The degree of fiscal centralisation is defined as the share of public good that is produced by the central government (therefore, centralisation is 100 percent if all public goods are produced by the central government and centralisation is zero if all goods are produced by the local governments). The equilibrium level of centralisation is derived under the assumption that the central government is the first mover and decides the level of centralisation. While this assumption may seem at odds with democratic voting over the type and amount of public good, its theoretical background relates to the large political science literature that shows how the agenda setter can manipulate the final outcome of an election.

After observing the level of centralisation, the citizens vote on the amount of the public good, and then on the type of the public good.<sup>3</sup> On principle, anybody who promises to supply the type of public goods preferred by the median voter could play the role of central government, but only one individual can credibly commit to provide such type of public good: the “national” median voter herself. Besides sharing the preferences of the national median voter, the central government derives additional utility from staying in power. Following Brennan and Buchanan’s interpretation (1980), it is assumed that the utility that the government obtains from staying in power is a function of the budget it controls. Given the discretionary power of the agenda setter, the central government will always be able to extract some rent. The level of democracy measures how much of this rent the central government is willing to extract as well as the level of utility that the government derives from the budget.

The government maximises its utility function by solving the model backward. The last decision (and therefore the first to analyse) is on the type of pub-

lic good. The next step is to determine the amount of the public good to be provided in equilibrium. By applying the median voter theorem, it is possible to show that the optimal quantity of public good is a weighted average of the median distance from the national median and the jurisdiction median and that the equilibrium level of fiscal centralisation is decreasing in: (i) the level of taste differentiation; (ii) the level of democracy; (iii) the level of income per capita and (iv) country size.<sup>4</sup>

### What do the data say?

The model discussed above generates four predictions. First, it suggests that, other things equal, countries with polarised preferences for the type of public good should be more decentralised than countries with homogeneous preferences. Hence, we should find a negative correlation between the level of centralisation and heterogeneity in the demand of public goods. Economic theory indicates that the key factors in determining demand are tastes and income. Since the model assumes constant income, the empirical analysis concentrates on the role of taste heterogeneity.

The second result focuses on the role of democracy and suggests that we should find a negative correlation between the level of democracy and the degree of centralisation. The theoretical model suggests that perfect democracies should set centralisation equal to zero, and very repressive dictatorships should be fully centralized. The majority of countries included in the empirical analysis fall between these two extremes. Most of the real world governments are neither perfect democracies (because they are run by self-interested politicians with some agenda-setting power) nor perfect dictatorships (even dictators need to rely on the support of the group of people who put them in power). Furthermore, some public goods cannot be efficiently produced by the local governments (these are goods with large spillover; defense is an example of such a good). Hence, even perfect democracies will have levels of centralisation greater than zero.

<sup>3</sup> The assumption of sequential decision-making reflects the budget process adopted in many countries (Alesina and Perotti 1999). The model considers two types of median voters: the “national” median voter and the median voter of a given jurisdiction. Given the assumption on the spatial distribution of individuals, the median voters are located at the center of the country and at the center of their jurisdictions, respectively.

<sup>4</sup> The relationship between decentralisation and democracy is in line with Alesina and Spolaore’s finding (1997) that democratisation should be positively correlated with the equilibrium number of countries and it confirms the claim that their analysis can be applied to the division of a country into jurisdictions. This result is also consistent with Ales and Glaeser’s (1995) finding that dictatorships tend to have larger capital cities.

The third result focuses on the relationship between decentralisation and the level of development. It suggests that we should find a negative correlation between centralisation and income per capita.

The fourth result highlights the role of size. It suggests that, other things being equal, the bigger the country, the larger the ideological distance from the center, and hence the smaller the quantity of public good provided in equilibrium. Therefore, we should find a negative correlation between centralisation and country size.

#### The Data

To test the predictions of the model it is necessary to build a data set of measures of fiscal centralisation. Identifying such measures is not an easy task. The main issue is finding a method to quantify the activity of local governments that results from independent decision-making. Oates (1972) discusses the conceptual problems involved in the choice of the right measure of fiscal centralisation. These problems can be summarised as follows: (i) Different levels of local governments should be weighted in different ways. (ii) Sometimes the local governments collect revenues or make expenditure but have no autonomy in deciding the tax amount to be collected or the type of expenditure to be made. (iii) The role of intergovernmental grants.

The available data do not allow the problems listed above to be addressed. They distinguish between the central government and local governments as a group. Information on the appropriate decision units and on the use of intergovernmental grants is not available. It is therefore impossible to apply a weighing scheme to different levels of local governments or to identify the number of relevant jurisdictions. Therefore, I define centralisation ratios as the percentage of revenues (or expenditure) of the central government out of the total revenues (or expenditure) of the public sector. Two measures of fiscal centralisation (Total Revenues and Total Expenditure) for 1975, 1980 and 1985 are built using data from the IMF's Government Finance

Statistics Yearbook. For most measures, former Yugoslavia is the most decentralised country. Among the industrialised countries Switzerland, Canada and the United States are the most decentralised.

Another key variable is the one that measures heterogeneity in the preferences for public goods. Since tastes are not directly observable, it is necessary to find a proxy for this variable. It is not unlikely that different ethnic groups may diverge in their tastes for publicly provided goods (education is an important example). In fact, Alesina, Baqir and Easterly (1999) quote a vast sociological literature that finds that preferences and conflicts over public policies are more strongly correlated with ethnic as opposed to income differences. Therefore, I proxy differences in tastes with a measure of ethnic fractionalisation originally collected by the Department of Geodesy and Cartography of the State Geological Committee of the Soviet Union and popularized by Mauro (1995). These data show that most African countries are highly ethnically fractionalised (nine out of the ten most fractionalised countries are in Africa, the tenth one is India). Among the industrialised countries, Canada has the highest degree of ethnic fractionalisation, followed by Belgium, Switzerland and the United States.

To test the link between decentralisation and democracy, I use the data on political rights assembled by Gastil (1990) rescaled on a 0 to 1 ranking, where 0 corresponds to dictatorship and 1 to full democracy.

Revenues centralisation ratios, Tobit estimations for 1985

	(1)	(2)	(3)	(4) Dropping Yugoslavia and Zaire
<i>Area</i>	- 3.202 (- 3.865)***	- 3.85 (- 5.129)***	- 3.253 (- 3.949)***	- 3.37 (- 5.49)***
<i>Y</i>	- 10.961 (- 5.638)***	- 7.736 (- 3.098)***	- 8.937 (- 3.488)***	- 5.23 (- 2.66)***
<i>Fract</i>	- 18.438 (- 2.724)***		- 18.435 (- 2.732)***	- 10.49 (- 2.06)**
<i>Dem</i>		-6.876 (-1.008)	- 8.247 (- 1.192)	- 15.85 (- 2.99)***
Const.	225.481 (10.69)***	204.559 (9.17)***	214.361 (9.417)***	187.26 (11.06)***
N. Obs.	56 37	60 39.2	56 38.43	54 52.48
t statistics in parentheses. - *** Denotes a parameter that is statistically significant at 1% confidence level.				

*Estimations of the determinants of fiscal centralisation*

I start the analysis by estimating two regressions where measures of ethnic fractionalisation (Fract) and democracy (Dem) are added, one at a time, to a basic specification that includes income per capita (Y) and country size (Area). For all regressions, Y and Area are negatively correlated with centralisation and have large and statistically significant coefficients (baseline results for revenues centralisation are reported in Table 1). If we focus on 1985, we find that both ethnic fractionalisation and democracy have the expected negative sign, but while the coefficient on ethnic fractionalisation is statistically significant (columns 1 and 3) the one of democracy is not significant at the conventional confidence level (columns 2 and 3). There are two important outliers in the data: the former Yugoslavia and the Democratic Republic of Congo (Zaire). Both countries have high levels of ethnic fragmentation and low levels of democracy, but Yugoslavia has the most decentralised fiscal structure and Zaire one of the most centralised. To explore the role of these two countries, I have dropped them from the sample and find that both democracy and ethnic fractionalisation are significant (column 4). I find similar results by applying semi-parametric estimations to the full sample.

*The role of history*

Some political scientists have pointed out that intergovernmental fiscal relations are the outcome of a bargaining process that is generally unpredictable (Oates 1972). In some cases, this bargaining process generated a structure of intergovernmental fiscal relations that, although optimal at the time the process took place, may not reflect the current preferences of the citizens. Since the process of adjusting to the optimal fiscal structure requires time, many countries may still be far away from their optimal level of centralisation.

Although the model discussed above is static, it is interesting to study whether some of the countries included in the sample are out of equilibrium and slowly adjusting towards it. An ideal way to control for the role of history would be to include in the regression fiscal centralisation measured at the time a given country achieved its independence, but this variable is not available. An alternative method is to augment the regression with the lagged value of fiscal centralisation. The results of

this experiment confirm that history is very important. The lagged value of fiscal centralisation absorbs most of the variance of the regression (but its coefficient is significantly lower than 1) and reduces the explanatory power of the other variables. If we accept the idea that some countries are out of equilibrium, the residuals of the regression should be correlated with changes in fiscal centralisation over time. Countries where the actual level of centralisation is higher than the predicted value (i.e.  $u_i > 0$ ) should be moving towards a more decentralised system and vice-versa. In fact, Belgium, France, Italy, Spain and the United Kingdom are all countries where, in 1985,  $u_i > 0$ . Since then, all these countries have moved or are moving towards a more decentralised system. The situation is more complex for Canada (for which  $u_i < 0$ ); the strong movement for the independence of Quebec seems to indicate that the country is too centralised (and therefore contrasts with the negative residual). Another possible interpretation is that, in order to prevent secession, the central government is “bribing” Quebec with “too much” autonomy. This idea finds some support in the results of the referendum in which the residents of Quebec voted against secession from the rest of Canada.

The idea that the central government can decentralise to prevent secession is the focus of Panizza (1998). In that paper, I use a model similar to the one discussed above but I focus on the trade-off between the benefits of decentralisation and the costs of secession. In that set-up, voters can induce the government to decentralise with a threat of secession. Such a threat is credible only if utility under secession exceeds utility under union. Also in this case, I find that the benefits of secession are increasing with country size and preference heterogeneity and conclude that larger and more ethnically different countries will need to decentralise more in order to preserve national unity.

## Conclusions

It has been claimed that it is not possible to find a single set of variables explaining the cross-country differences in the degree of fiscal centralisation. Oates' (1972) attempt seems to support this view. The work described in this article is more optimistic on the possibility of finding empirical regularities explaining decentralisation and suggest that country size, income per capita, ethnic frac-

tionalisation, and the level of democracy are negatively correlated with fiscal centralisation.

These findings seem consistent with the fact that, in the real world, democratisation has often been followed by decentralisation. This happened in Spain, where the death of Francisco Franco and the return to a democratic system was soon followed by a massive process of decentralisation. Other examples are Poland, Czechoslovakia, Russia, and Ukraine. The end of the Cold War also favored the rise of secessionist (or pro-decentralisation) political movements in countries that, although democratic, used to have an extremely rigid political situation. In Italy, for instance, the end of the “Cold War equilibrium” was soon followed by the rise of a separatist political party.

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