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Fiscal autonomy and quality of governance in OECD countries

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Abstract

Using a panel of 24 OECD countries, we study the link between the autonomy of sub-national governments and the quality of governance of a country. The results show that fiscal autonomy worsens citizens' perceptions of governance quality. In particular, the delegation of policy responsibilities to the regional level produces a robust negative effect on quality.

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1. Introduction

A process of decentralization of the administrative, fiscal, and political powers has taken place in most OECD countries in recent decades. The main purpose of such reforms is to increase the quality of governance by locating institutions closer to citizens (geographically, and in terms of preferences). Several strands of the economic literature are cited in support of these policies: the theory of fiscal federalism claims that decentralization contributes to a more efficient allocation of resources – according to Oates' theorem (Oates, 1972), a local government can provide public policies closer to citizens' preferences; the public choice approach sees decentralization as a way to decrease the monopolistic power of the government, thus 'taming the leviathan' (Brennan and Buchanan, 1980); and finally, the political economy literature considers decentralization as a way to increase policy makers' accountability (Seabright, 1996). The literature, however, has also pointed out possible negative effects of the decentralization process, such as the possibility that fiscal competition may lead to a 'race to the bottom', or that sub-national governments may attract businesses by being lenient in application of the law (Cai and Treisman, 2004). From a theoretical point of view, therefore, it is not clear whether decentralization increases or decreases the quality of governance.

In a recent empirical analysis, Kyriacou and Roca-Sagalés (2011) find that fiscal decentralization has a positive impact on quality, but this effect is reduced by the presence of three institutional factors: regional elections, federalism, and bicameralism. In another contribution, Enikopolov and Zhuravskaya (2007) investigate the impact of decentralization on governance quality, taking into account the country's political structure. They find a positive relation with the degree of stability and diversification of political parties, while the election of the sub-national government does not have any significant impact. Both studies use the share of sub-national revenues on total revenues as a proxy for the degree of fiscal decentralization. We believe, however, that a measure of decentralization should *also* be based on the degree of autonomy – i.e., the power autonomously to decide how to raise and spend resources – of sub-national governments. For instance, allocating resources to the regional level and at the same time imposing strict rules on their management is more like the creation of a local branch than a real process of fiscal decentralization.

The main aim of our study is to investigate how the degree of fiscal autonomy of the sub-central government affects the quality of governance. We address this issue by explicitly taking into account the degree of fiscal autonomy of the highest sub-national tier of government (in many cases the regional level). Our empirical analysis shows that autonomy – in particular, policy responsibilities – worsens the quality of governance. These results are in contrast with the empirical evidence of Enikopolov and Zhuravskaya (2007) and Kyriacou and Roca-Sagalés (2011), which were based on a quantitative measure of decentralization. Our analysis shows that taking account only of the amount of resources devolved to the sub-central levels of government can be misleading.

2. Data

The empirical analysis is conducted on a balanced panel of 24 OECD[1] countries from 1996 to 2006. The quality of governance is captured by a synthetic index of quality, *QI*, which is the simple

[1] Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxemburg, Netherlands, New Zealand, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland, United Kingdom, United States.

average of four indicators[2] accounting for citizens' perceptions of government effectiveness, regulatory quality, rule of law, and control of corruption (Kaufman *et al*., 2010).[3] *QI* assumes values between -2.5 and 2.5, with the highest value indicating strong governance performance. This indicator captures the capacity of the public administration to supply goods and services and to provide a sound environment for economic and social interactions.

Data for regional autonomy are taken from the Regional Scores Dataset (Hooghe *et al*., 2008), which provides a series of qualitative indicators on the structure of the regional government (regional authority indexes, *RAIs*). Since the quality of governance refers to the whole country, we use the national aggregation of the regional indicators, which are provided in the same dataset. Amongst the RAI indicators, our analysis is focused on fiscal autonomy and administrative autonomy, using the following indicators:

- *tax autonomy*, which measures the extent to which the regional government can independently tax its jurisdiction (whether it can decide the tax rate, the tax base, or both);
- *policy scope*, which measures the extent to which the regional government can independently conduct the following policies: economic, cultural-educational, and welfare;
- *institutional depth*, which accounts for administrative autonomy; that is, the measure of whether the regional government is just a branch of the central administration or whether it enjoys a larger general-purpose administrative autonomy.

As controls we include the logarithms of the following variables: per-capita Gross Domestic Product (*lnGDPpc*), at constant 2000 US$, the population size (*lnPop*), the percentage of the population living in urban areas (*lnUrban*). Following Enikopolov and Zhuravskaya (2007), we also control for the effects of the direct election of sub-national governmental bodies, *elected state/prov* variable, political party strength effects, average longevity of the main parties (*Party Age*), and the fractionalization of government parties (*GovFrac*). A detailed data description is provided in the Appendix, while descriptive statistics of the variables are shown in Table 1.

Table 1. Descriptive statistics

Variable	Mean	St.Dev. (all)	St.Dev. (Within)	b/w ratio	Min	Max
QI	1.53	0.48	0.08	6.02	0.35	2.14
Tax autonomy	1.93	1.72	0.14	12.82	0.00	4.80
Policy scope	2.26	1.56	0.26	6.00	0.00	5.00
Institutional depth	2.71	1.41	0.28	5.08	0.00	5.70
LnPop	16.20	1.51	0.02	67.97	12.51	19.52
LnUrban	4.30	0.16	0.01	13.15	3.95	4.58
LnGDPpc	9.87	0.63	0.09	7.30	8.14	10.90
PartyAge	61.09	36.17	9.19	3.88	1.00	154.5
GovFrac	0.33	0.27	0.11	2.25	0.00	0.83
Elected state/prov	1.35	0.75	0.23	3.20	0.00	2.00

Observations No.= 264.

[2] We replace missing data for 1997, 1999 and 2001 with data computed as intertemporal average of the year immediately before and after.

[3] Kyriacou and Roca-Sagalès (2011) and Enikopolov and Zhuravskaya (2007) use the same indicator of quality.

3. Model and methodology

Our empirical analysis is based on the following econometric specification:

$$QI_{it} = c + \alpha RAIs_{it} + \beta X_{it} + \upsilon_i + \tau_t + \varepsilon_{it} \quad (1)$$

where QI_{it} is the indicator of governance quality for country *i* in period *t*; *RAIs* is the regional autonomy indicator; υ_i and τ_t are unobserved country and time specific effects, respectively; *c* is the constant term; and ε_{it} is the error term with zero mean random disturbance and constant variance. Since the *RAIs* indicators are strongly correlated with each other, we introduce them into the model separately.

The estimation of Equation (1) is conducted with the fixed-effect (FE) estimator because the Hausman (1978) test indicates that this is more appropriate in our case (see Table 2, columns - 4-6). The FE estimator, however, produces inefficient estimations in the case of rarely changing variables i.e., with low within-variance (Plümper and Troeger, 2007). Unfortunately, we run into this problem. As shown in Table 1, the within-variance of the *RAI indicators* is low: it ranges between 0.14 and 1.01. Moreover, the high values of the ratio of the between-variance with respect to the within-variance (i.e. the "b/w ratio") suggest that the FE estimator may perform poorly (Plümper and Troeger, 2007). In order to cope with this problem, we use the three stages '*fixed effects vector decomposition'* estimator (FEVD) developed by Plümper and Troeger (2007). In stage 1, a standard FE model with time-varying variables is estimated. In stage 2, the estimated unit effects from stage 1 are regressed on rarely changing variables. In stage 3, a pooled ordinary least squares (OLS) model is estimated with the inclusion of all variables and the estimated residuals from stage 2. Given the presence of high correlation between some of the explanatory variables and the unit effects, the instrumental variable (IV) version of the FEVD estimator is implemented, using the low correlated variables as instrumental variables (Plümper and Troeger, 2011; Breusch *et al*. 2011).

4. Results

We start our empirical analysis by estimating the pooled version of model (1) with the ordinary least square (OLS) estimator. Columns 1-3 in Table 2 show that the *RAIs* indicators have a negative effect on *QI* and are significantly different from zero with the exception of *Institutional depth*. The FE model, in columns 4-6, confirms the negative impact of the *RAIs* indicators on *QI,* but only the coefficient of *Policy Scope* is now statistically significant.[4]

Because of the low within-variance of the RAIs and some control variables, the point estimates of the FE estimator are unreliable. Therefore, we perform the more efficient FEVD[5] estimator. In columns 1-3 of Table 3, the FEVD estimates show that only the coefficients of *Policy Scope* have a significant negative sign. In fact, the coefficients of *Tax autonomy* and *Institutional depth*, although negative, are not statistically significant. The high correlation (about 0.70) between the RAIs indicators and the estimated fixed effects suggests that we should instrument the FEVD estimator.[6] The IV-FEVD results confirm the negative and significant impact of *Policy Scope* on *QI*. The coefficient of *Institutional depth* now becomes statistically significant, whereas the coefficient of *Tax autonomy* is still negative but not significant.

[4] This Within estimation results are robust to heteroschedasticity problems in the structure of the error term.

[5] Version beta 4.0 of the Stata program developed by Vera E. Troeger and Thomas Plümper was performed.

[6] The IV-FEVD estimates also account for the high correlation (about 0.90) between population size and the estimated fixed-effects.

Table 2. OLS and FE estimation results

	OLS-Pooled			Within-FE		
	1	2	3	4	5	6
Tax autonomy	-0.038***			-0.059		
	(-3.12)			(-1.36)		
Policy scope		-0.081***			-0.052**	
		(-4.05)			(-2.19)	
Institutional depth			-0.025			-0.023
			(-1.10)			(-0.81)
LnPop	-0.023	0.015	-0.026	-0.580	-0.710	-0.710
	(-1.57)	(0.79)	(-1.15)	(-0.88)	(-1.03)	(-0.98)
LnUrban	0.373**	0.362**	0.238*	-1.259*	-1.377**	-1.249*
	(2.94)	(2.99)	(1.82)	(-1.89)	(-2.07)	(-1.92)
LnGDPpc	0.413***	0.460***	0.406***	0.380	0.360	0.422*
	(10.00)	(10.65)	(9.62)	(1.55)	(1.50)	(1.72)
Party Age	0.004***	0.003***	0.003***	-0.002	-0.002	-0.002
	(5.10)	(3.56)	(4.42)	(-1.63)	(-1.56)	(-1.47)
GovFrac	0.313***	0.372***	0.299***	-0.058	-0.053	-0.053
	(3.80)	(4.40)	(3.65)	(-0.67)	(-0.62)	(-0.61)
Elected state/prov	0.057**	0.081***	0.043	0.102***	0.117***	0.106***
	(2.04)	(2.70)	(1.45)	(4.59)	(3.76)	(3.82)
c	-4.10***	-5.03***	-3.39***	12.70	15.51	14.20
	(-6.62)	(-7.07)	(-4.94)	(1.33)	(1.54)	(1.36)
R-sq	0.702	0.714	0.696			
Within R-sq				0.302	0.314	0.298
$F_{(23, 223)}$ stat.				135.05***	131.62***	137.65***
Hausman-stat. $\chi^2_{(7)}$				20.34***	22.71***	18.32**
Obs. No.	264	264	264	264	264	264

t statistics in parentheses * p<0.10, ** p<0.05, *** p<0.01.

As regards fiscal decentralization, our analysis shows that policy autonomy has a negative and significant impact on the quality of governance, and that this result remains robust to several estimation techniques and model specifications. This finding fits with the idea advanced by Cai and Treisman (2004) that sub-national governments compete to attract tax base by implementing laws and regulations in a lenient way, with consequent detriment to the rule of law – one of the components of the quality index, *QI*. Also the level of tax autonomy has a negative impact on quality, but this result is not robust; the statistical significance of the estimated coefficient disappears when estimation techniques are changed. The level of administrative autonomy, captured by the *Institutional depth* indicator, has a negative impact on quality, but the associated coefficient is statistically significant only in the IV-FEVD estimation.

The direct election of the members of sub-national governments significantly improves citizens' perceptions of the quality of governance. This result provides empirical support for the contention that political accountability is important for a successful decentralization process (Seabright, 1996). Another significant political determinant of governance quality is political party fractionalization, which impacts positively and significantly on *QI* with the exception of the within results. The impact of the longevity of the main political parties is also significant but only with regard to the OLS-pooled estimation. It mainly depends on the misspecification of the pooled model. In fact, the coefficient has a negative sign on estimating the FE model, although it is not statistically significant.

Table 3. FEVD and IV-FEVD estimation results

	FEVD			IV-FEVD		
	1	2	3	4	5	6
Tax autonomy	-0.053			-0.185		
	(-1.02)			(-1.10)		
Policy scope		-0.127**			-0.461***	
		(-2.29)			(-5.38)	
Institutional depth			-0.087			-0.480***
			(-1.37)			(-5.11)
LnPop	-0.001	0.589	0.032	0.797***	0.207**	0.282***
	(-0.01)	(1.07)	(0.53)	(4.57)	(2.43)	(3.17)
LnUrban	0.682	0.611	0.421	1.59	0.804	0.002
	(1.42)	(1.44)	(0.94)	(1.02)	(1.22)	(0.00)
LnGDPpc	0.600***	0.624***	0.586***	0.910**	0.728***	0.641***
	(4.99)	(5.58)	(5.07)	(2.37)	(4.24)	(3.76)
Party Age	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002
	(-1.58)	(-1.56)	(-1.39)	(-0.54)	(-1.06)	(-0.98)
GovFrac	0.263	0.381*	0.303	1.888**	0.652**	0.658***
	(1.12)	(1.79)	(1.36)	(2.49)	(1.98)	(2.00)
Elected state/prov	0.085	0.121	0.088	-0.447	0.390***	0.293**
	(0.88)	(1.33)	(0.93)	(-1.44)	(2.77)	(2.11)
c	-7.30***	-8.12***	-6.47***	-26.76***	-12.08***	-8.58***
	(-3.08)	(-4.00)	(-3.32)	(-3.51)	(-3.88)	(-2.99)

Note: a) instrumental variables: *LnGDPpc*, *LnUrban*, *GovFrac*, *Party Age*, *year effects*; b) In stage 3, the estimated coefficient of the residual extracted regressing the unit-specific effects on the rarely changing variables is 1.00; Obs. No. 264. t statistics in parentheses * p<0.10, ** p<0.05, *** p<0.01.

In regard to the demographic and economic determinants, we find that per capita GDP impacts positively and significantly on *QI*. The percentage of urban population has a significant effect only on the pooled and FE estimates. The fact that the coefficient changes sign depends on the misspecification of the pooled model. In fact, the *F*-test results reported in Table 2 reject the null-hypothesis of identical individual intercepts at 1% level of significance. The impact of population size on quality of governance is positive and statistically significant only in the IV-FEVD estimation.

5. Concluding comments

The foregoing analysis of the impact of sub-central government fiscal autonomy on the quality of governance has suggested a negative relationship. The more fiscal autonomy is devolved to sub-central entities, the lower the perceived quality of governance in the country. In particular, the negative effect of the devolution of policy competences is robust to different specifications of the model and econometric techniques. By contrast, the possibility to elect the members of the sub-central government has a positive impact on quality, in line with the theory of electoral accountability. Our study sounds a note of caution for analysis of the impact of decentralization on the quality of governance, which calls for further research considering both dimensions of decentralization: the amount of resources and the degree of autonomy.

Appendix

Variable	Data description	Data source
QI	The simple average of four indicators: Government Effectiveness, Regulatory Quality, Rule of Law, Control of Corruption. QI assumes values approximately from -2.5 (weak) to 2.5 (strong) governance performance.	World Bank - Worldwide Governance Indexes (Kaufman *et al*., 2010); Authors' compilation.
Tax autonomy	Extent to which a regional government can independently tax its population: 0: the central government sets the base and rate of all regional taxes; 1: the regional government sets the rate of minor taxes; 2: the regional government sets the base and rate of minor taxes; 3: the regional government sets the rate of at least one major tax: personal income, corporate, value added or sales tax; 4: the regional government sets the base and rate of at least one major tax: personal income, corporate, value added or sales tax.	Regional Scores Dataset (Hooghe *et al*., 2008)
Policy scope	Range of policies for which a regional government is responsible: 0: no authoritative competences over economic policy, cultural-educational policy, welfare policy; 1: authoritative competences in one area: economic policy, cultural-educational policy, welfare policy; 2: authoritative competences in at least two areas: economic policy, cultural-educational policy, welfare policy; 3: authoritative competences in at least two of the above areas, and in at least two of the following: residual powers, police, authority over own institutional set-up, local government; 4: regional government meets the criteria for 3 and has authority over immigration or citizenship.	Regional Scores Dataset (Hooghe *et al*., 2008)
Institutional depth	Extent to which a regional government is autonomous rather than deconcentrated: 0: no functioning general-purpose administration at the regional level; 1: deconcentrated, general-purpose, administration; 2: non-deconcentrated, general–purpose, administration subject to central government veto; 3: non-deconcentrated, general–purpose, administration not subject to central government veto.	Regional Scores Dataset (Hooghe *et al*., 2008)
Pop	Population, total.	World Development Indicators (WDI) of the World Bank
Urban	Population in urban area (% of the total population).	WDI of the World Bank
GDP	Per-capita gross domestic product (GDP) at constant 2000 US$.	WDI of the World Bank
Party Age	The average of the ages of the first government party, the second government party, and the first opposition party, or the subset of these for which age of party is known.	Database on Political Institutions (Beck *et al*., 2001), version of the 2009.
GovFrac	The probability that two deputies picked at random from among the government parties will be of different parties. Missing if there is no parliament, if there are any government parties where seats are unknown or if there are no parties in the legislature. Scale from 0 to 1.	Database on Political Institutions (Beck *et al*., 2001), version of the 2009.
Elected state/prov	0 if neither local executive nor local legislature are locally elected; 1 if the local executive is appointed, but the local legislature elected; 2 if they are both locally elected. In the case of multiple levels of sub-national government, the highest level as the "state/province" level is considered.	Database on Political Institutions (Beck *et al*., 2001), version of the 2009.

Note: The RAIs variables aggregated at country level are differently scaled.

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