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**FISCAL DECENTRALIZATION AND GOVERNANCE**

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## **Fiscal decentralization and governance**

### **Abstract**

The literature on the economics of fiscal decentralization stresses the potential for both positive and negative effects on the quality of governance in a country. The empirical evidence on the issue is scant. In this paper, we add to the empirical evidence by testing for a relationship between fiscal decentralization and changes in indicators of the quality of governance in a cross-section of developed and developing economies. We find that greater fiscal decentralization is consistently associated with improvements in the quality of governance and that this result is robust to different institutional frameworks governing decentralization, to different estimation methodologies, to variations in the country sample, and to controlling for the influence of variables that other studies have identified as affecting the quality of governance. Our results support the view that one justification for greater fiscal decentralization is the beneficial impact on a country's governance that may result.

JEL classification: C31, H11, H77

Keywords: Cross-section, Revenue decentralization, Governance

## **Fiscal decentralization and governance**

### **1. Introduction**

The literature on the economics of fiscal decentralization stresses the potential for both positive and negative effects on the quality of governance in a country. However, empirical evidence to this effect is limited to a few studies that have rather mixed results. In this paper, we add to the empirical literature by testing for evidence of a relationship between fiscal decentralization and changes in the quality of governance in a cross-section of developed and developing economies. We find that greater fiscal decentralization is consistently associated with improvements in the quality of governance and that this result is robust to different institutional arrangements for fiscal decentralization, to different estimation methodologies, to variations in the country sample, and to controlling for the influence of variables that other studies have identified as affecting the quality of governance. With some possible exceptions that we describe later, our results support the view that one justification for greater fiscal decentralization is that it may be beneficial for a country's governance.

The paper is organized as follows. Section 2 provides a brief summary of the main arguments in the literature on how fiscal decentralization can affect the quality of governance. Sections 3 and 4 describe the data and our methodology, respectively. The empirical results are presented in section 5, and a final section concludes.

### **2. How fiscal decentralization can improve governance**

Several economists have made the case for fiscal decentralization as a means of promoting better governance. For example, Oates (1972) argues that decentralized governments will be better informed about local conditions and better able to satisfy citizen preferences; Seabright (1996) and Tabellini (2000) make the case based on citizens being better informed about the activities of local

governments and therefore better placed to reward or punish local politicians according to their performance; Weingast (1995) and Montinola et al., (1995) argue that fiscal decentralization means that economic agents have the ability to leave more corrupt regions, which would tend to drive down the degree of corruption; and Inman and Rubinfeld (1999) and de Mello (2000) show that it strengthens social capital and encourages political participation

Others economists have argued that fiscal decentralization can undermine governance. Bardhan and Mookherjee, (2000), Tanzi (1995), and Prud'homme (1995) argue that local officials are more susceptible to capture by local economic interests; Prud'homme (1995) and Tabellini (2000) suggest that harmful effects may result because local government activities are less intensely monitored than central government activities; Hommes (1995) The World Bank (1999) and Fukasaku and de Mello (1999) argue that fiscal decentralization may lead to poor accountability and governance if expenditures and revenue mobilization functions are not clearly assigned across different levels of government.

The few relevant empirical studies have focused mainly on the corruption aspect of governance and have had rather mixed results. Cross-country studies in this vein include De Mello and Barenstein (2001), who report that a range of governance indicators improve as the share of sub-national government spending in total spending increases (controlling for the level of GDP per capita and population size); Fisman and Gatti (2002), who find that revenue and expenditure decentralization reduce corruption (controlling for civil liberties, government size, ethnic fractionalization, GDP per capita, population size; and federal structure); and Enikolopov and Zhuravskaya (2007), who report that governance indicators improve when fiscal decentralization is combined with strong national parties. In contrast, Treisman (2002) finds that any relationship between corruption and fiscal decentralization seems to break down if one controls for population composition based on religion; and Dreher (2006) finds that fiscal decentralization is consistent with improvements in key governance indicators mainly in low income countries.

### 3. Data description

Our indicator of governance is the quality of governance index produced by the International Country Risk Guide (2001), which is a composite of three indices, namely: an index of bureaucratic quality, an index of corruption in government, and an index of the rule of law. All three indices are clearly linked to governance, with the latter index aimed at reflecting the government's administrative capacity in enforcing the law, and the potential for rent-seeking associated with weak legal systems and insecure property rights. Each index is subjective and is scaled from 0 to 6, with higher values indicating, respectively, a higher quality of bureaucracy, less corruption, and better law and order enforcement; the composite quality of governance index, therefore, is an 18-point scale.

Our indicator of fiscal decentralization is the share of sub-national government revenues in total government revenue, which is drawn from the International Monetary Fund's (IMF) Government Finance Statistics and World Economic Outlook databases. Though commonly used, this indicator is flawed because it does not distinguish between revenues from tax sharing that involve little real autonomy on the part of sub-national governments, and these governments' 'own-source' tax revenues, over which they exercise some degree of control over the tax rate, the tax base, or both (Darby et al., 2003; Jourmard and Kongsrud, 2003; Thornton, 2007ab). In addition, tax sharing arrangements sometimes leave sub-national governments with little or no power to influence the revenues accruing to them individually, and even when they have such powers they are sometimes reluctant to use them. Nonetheless, the IMF data are the most consistent series available and thus the most suitable for cross-country analysis. We try to control for the shortcomings of our measure as an indicator of true revenue decentralization by including three institutional indicators of sub-national fiscal autonomy in our initial estimates. These are: a dummy variable to indicate whether the country has a federal constitution, on the assumption that such countries will have more devolved fiscal responsibilities; a dummy variable to indicate whether the bottom tier of government is directly elected, on the assumption that directly elected sub-national governments are more likely to have been devolved some fiscal responsibility; and a dummy variable to indicate whether the sub-national

government tier has limited autonomy under the country's constitution. The first of these variables is derived from The CIA World Factbook 2010,<sup>1</sup> and the other two variables are from Treisman (2000).

Many variables have been found to affect the quality of governance (e.g., La Porta et al., 1999; Swamy et al., 2001; Treisman, 2002, 2006) and we also control for several of these in our estimates. Our baseline control variables are a country's population and its GDP per capita, which are drawn from Heston et al., (2009). Population is included as an indicator of country size to capture economies of scale in establishing effective institutions (Srinivasan, 1986; Knack, 2001), and because there is some evidence larger (more populous) countries tend to be more decentralized but also to have lower government quality (Treisman, 2002). Per capita GDP is included to capture increases in the volume and size of transactions, which would increase the benefits of developing institutions such as commercial codes and their associated adjudication and enforcement mechanisms (Knack, 2001; Rosenberg and Birdzell, 1986). In addition, richer countries tend to be more decentralized (Panizza, 1999) and have better government quality since economic development makes better quality institutions more affordable (Islam and Montenegro, 2002), and will tend to create a demand for better government (La Porta et al., 1999).

We also report results from estimates that include three further control variables selected because their influence on governance has been found to be robust in a range of empirical studies (Serra, 2006). These are: a dummy variable equal to 1 if a country achieved colonial independence after 1945, the data for which is derived from The CIA World Factbook 2010; a country's degree of ethnic fractionalization, the data for which is taken from Alesina et al., (2003); and a dummy variable equal to 1 if a country has maintained democratic institutions for a continuous period since 1950, which is taken from Serra (2006). Colonial independence after 1945 is included because public institutions take time to create and adapt to local circumstances, meaning that younger countries may be more prone to poor governance; in addition, institutions inherited from a former colonial power may be ill-

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<sup>1</sup> The CIA data can be downloaded at: <https://www.cia.gov/library/publications/the-world-factbook/>

suited to local needs and become vulnerable to irregular practices. Ethnic fractionalization is included because political theories predict that, as ethnic heterogeneity increases, governments become more interventionist and less efficient, the quality of public goods falls and political freedoms are restricted (La Porta et al. 1999). In addition, Tanzi (1995a) suggests that in developing countries noneconomic ties are strong and government officials tend to benefit their next of kin and ethnic group. Continuous democracy is included because governance has been found to be better in democratic countries and in those with a freer press and more vigorous civic associations (Treisman, 2000). In addition, democracy is likely to be negatively related to corruption since it makes politicians more accountable (Adserà et al., 2003). Finally, we control for the religious composition of the population, because of Treisman's (2000) finding the relationship between corruption and governance is not robust to its controlling for this variable.

The dataset comprises annual observations for 59 developed and developing economies for the period 1982-2007, though observations are not available for all countries for all years. The countries in the dataset are listed in Appendix Table 1.

#### **4. Methodology**

If fiscal decentralization improves the quality of governance, then countries that are more decentralized should see larger improvements in the quality of governance index over time. Accordingly, our dependent variable is the change in the quality of governance index,  $\Delta QGOV$ , which we measure as the end-of-period value of the index minus the initial value of the index. In our baseline estimates we include as explanatory variables: the average ratio of sub-national government revenues to GDP,  $REVY$ , to capture the impact of revenue decentralization on governance; the initial value of the quality of governance index,  $IQGOV$ , to capture regression-to-the-mean effects and to control for the limited opportunity of low- and high-rated countries, respectively, to decrease and increase their scores; population change,  $\Delta POP$ , and the change in real GDP per capita,  $\Delta YCAP$ ; the change in population over the sample period expressed as a fraction of its initial value,  $\Delta POP$ ; and the

change in per capita GDP over the sample period expressed as a fraction of its initial value,  $\Delta\text{GDP}$ .

Therefore, our baseline specification is:

$$\Delta\text{QGOV}_i = \alpha + \beta_1\text{REVY}_i + \beta_2\text{IQGOV} + \beta_3\Delta\text{POP}_i + \beta_4\Delta\text{GDP}_i + \varepsilon_i \quad (1)$$

OLS estimates of equation (1) could suffer from endogeneity bias in the sense that fiscal decentralization may also be influenced by the quality of governance. For example, Fisman and Gatti, 2002 note that corrupt officials of the central government might be reluctant to allow fiscal decentralization, as this would attenuate their ability to extract rents, or corruption. The presence of endogeneity has generally been dealt with in cross-section analyses through the use of instrumental variables (IV). We deal with the possible endogeneity of fiscal decentralization by adapting a methodology used by Lee and Gordon (2005) in which they instrument taxation by the average of tax rates in neighboring countries. Thus, one of our instruments for revenue decentralization is the average ratio of sub-national government taxes to total government revenue in neighboring countries, where neighboring countries revenue decentralization ratios are weighted by the inverse of the distance between the two countries.<sup>2</sup> The correlation between the actual revenue decentralization ratio and the revenue decentralization ratio in neighboring countries is high (0.73) but the level of governance in a country that is small relative to the regional and world economy should have virtually no effect on the revenue decentralization revenue in these other countries. There seems to be little reason to expect revenue decentralization ratios in neighboring countries to impact on a county's governance other than through its influence on that country's revenue decentralization ratio. As additional instruments, we use dummies identifying countries' legal origins (British, French, Socialist, Germanic, or Scandinavian) because of their success in other studies relating public sector activities to governance indicators (e.g., Fisman and Gatti, 2002; Mauro, 1998; de Mello and Barenstein, 2001). The instruments predict the actual revenue decentralization ratio reasonably well, with the  $R^2$  for the first-stage being 0.61.

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<sup>2</sup> Distance measures between two countries come from CEPIL, Centre D'Etudes Prospectives et D'Informations Internationales, (<http://www.cepii.fr/>). Geodesic distances are calculated following the great circle formula, which uses latitudes and longitudes of the most important cities/agglomerations in terms of population.



## 5. Empirical results

Table 2 reports OLS and IV estimates of equation (1) and of extensions to show how indicators of sub-national fiscal autonomy interact with revenue decentralization to influence the quality of governance. The coefficients on the revenue decentralization ratio in the baseline estimates are positive and highly significant (columns 1 and 5). The OLS estimate (column 1) indicates that a 23 percentage point rise in the sub-national government share of total government revenue increases the quality of governance index by 1 point. The IV estimate (column 5) indicates that a similar impact is felt when sub-national government revenue as a share of total government revenue increases by about 9 percentage points. These are large increases in revenue decentralization but they are well within the observed range of revenue decentralization ratios in the country sample (Appendix Table 1).<sup>3</sup> As regards the coefficients on other variables in the baseline equation, there is a very strong regression-to-the-mean effect: other things being equal, a country with an initial quality of governance index value 1 unit greater than another country will experience a decline of about one half of a point in both the OLS and IV estimates. Changes in population have no significant effect. Increases in GDP per capita are associated with improvements in the quality of governance in the IV estimate (column 5), with each 10 percent increase in income associated with about a 0.12 point increase in the quality of governance index. The instruments used in the IV estimates appear to be valid. For example, the *p*-values for the Sargan test of over-identifying restrictions and the Durbin-Wu-Hausman endogeneity test for the estimate in column 5 are 0.804 and 0.046, respectively.

Columns 2 to 4, and 6 to 8 of Table 2 report the OLS and IV results, respectively, of extending equation (1) to include the indicators of the real autonomy that sub-national governments have over sub-national revenues. Revenue decentralization continues to have a positive and significant impact on the quality of governance taking the different institutional arrangements into account. In the OLS

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<sup>3</sup> The revenue decentralization ratios in the country sample range from 1.1 percent (Jamaica) to 49 percent (Canada).

estimates, the dummy variables indicating that a country is federation and that the sub-national government tier has some limited constitutional authority interact with revenue decentralization to reduce its overall impact on the quality of governance. In the first case, the overall impact of revenue decentralization on the quality of government (i.e. the sum of the coefficients on revenue decentralization ratio and on the interaction variable) is similar in size to that of the coefficient on the revenue decentralization ratio in the baseline estimate; in the second case, the overall impact is about 40 percent less than in the baseline case. Finally, the dummy variable indicating a directly elected bottom tier of government interacts with revenue decentralization to have a strong and positive effect on the quality of governance, with the overall impact of revenue decentralization about 27 percent greater than in the baseline case.

The results of the IV estimates are broadly similar. The interaction variables have the same signs as in the OLS estimates but those involving the federation and limited constitutional authority dummies are not statistically significant, while the revenue decentralization variable remains positive and highly significant. The dummy variable for a directly elected bottom tier of government again interacts with revenue decentralization to have a strong positive effect on the quality of governance. We interpret these results as implying that while the share of sub-national government revenue in total government revenue has shortcomings as an indicator of the real autonomy that sub-national governments have over sub-national revenues, it is a reasonable approximation of fiscal decentralization for our purposes.

Table 3 replicates the baseline IV regression from Table 2 using the same set of instruments but substituting as the dependent variable changes in each of the three components of the quality of governance index. Correlations among the changes in three separate components of the quality of governance index range from 0.36 to 0.79, indicating that the strength of the decentralization-governance relation could vary substantially across the three governance indicators. The results are similar to the baseline estimates in Table 2. Revenue decentralization is positively and significantly related to improvements in bureaucratic quality (99 percent confidence level), the rule of law (90

percent level), and to corruption in government (10 percent level). In each case there is a strong regression-to-the-mean effect, changes in population are not statistically significant, and changes in GDP per capita have positive and significant effects on bureaucratic quality and the rule of law. The bottom row of the table reports the OLS and standard errors for the coefficient on the revenue decentralization ratio. In these tests, revenue decentralization is positively and significantly related to improvements in bureaucratic quality and corruption in government, but not to the rule of law.

In Table 4, we report results from IV estimates that include the additional control variables found by Serra (2006) to be robust in their relation to governance indicators. Specifically, the results show how colonial independence, ethnic fractionalization, continuous democracy, and the religious composition of the population interact with taxation to affect the quality of governance. The interaction variable involving post-1945 colonial independence reduces the impact of revenue decentralization on governance, but the coefficient on the interaction variable is not significant and the net impact of revenue decentralization on the quality of governance is positive and highly significant (column 1). Ethnic fractionalization also interacts with revenue decentralization to reduce the overall impact of the latter on the quality of governance: this time the coefficient on the interaction variable is statistically significant, though the net impact of revenue decentralization remains positive (column 2).

Continuous democracy since 1950 interacts with revenue decentralization to have a positive and highly significant effect on the quality of governance (column 3); the interaction variable is more important for governance than the revenue decentralization ratio alone, with the coefficient on that variable no longer statistically significant. Finally, we include the interaction of revenue decentralization with the proportion of the population that is protestant in light of Triesman's (2002) finding that the relationship between corruption and fiscal decentralization reported by Fisman and Gatti (2002) breaks down when it is included. Our results indicate that a having a large proportion of the population that is protestant interacts positively and significantly with revenue decentralization to improve the quality of governance, and that the interaction with continuous democracy is more

important for governance than the revenue decentralization ratio alone, with the coefficient on that variable no longer statistically significant (column 4).<sup>4</sup> The last rows of Table 4 report the OLS results for the tax revenue and interaction variables. These results indicate that revenue decentralization may actually have adverse effects on the quality of governance in newly independent countries and in the presence of ethnic fractionalization: in both cases the (negative) coefficients on the interaction variables are larger than the (positive) coefficients on the revenue decentralization variable. The OLS results with respect to the continuous democracy and religion interaction variables are in line with the IV estimates.

#### *Other robustness tests*

As an alternative methodology (to OLS and IV), we organized the sample into quintiles according to the progress made in improving the quality of governance and employed probit estimation. In this case, the dependent variable was equal to 1 if a country was located in the highest quintile of improvement in the governance indicator and zero otherwise. The result turns out to be similar to the baseline OLS and IV results reported in Table 2. The coefficient (and standard error) on the revenue decentralization ratio in an equation that includes the change in population and the change in GDP per capita as control variables is 0.0476 (0.0233), which is significant at the 95 percent level of confidence. The full probit regression result is reported in Appendix Table 2.

We also checked the robustness of our results to reasonable changes in the sample and report summary IV and OLS results from these tests in Table 5. Row 1 of the table reports the coefficients on the revenue decentralization ratio from the baseline estimates in Table 2 for comparison purposes. The remaining rows show the corresponding (IV and OLS) results for the revenue decentralization ratio for various alternative samples.

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<sup>4</sup> We also ran the IV estimates with revenue decentralization and a dummy variable indicating continuous democracy as separate variables and found both variables to have positive and statistically significant effects on the quality of governance.

Row 2 reports the results after deleting from the sample small countries with a population below one million, to ensure that the results are not driven by a small number of relatively unimportant countries.<sup>5</sup> The coefficients on the revenue decentralization ratio remain positive and statistically significant and are somewhat larger than in the baseline cases.

Row 3 deletes from the sample those countries that have only a very limited degree of revenue decentralization. We drew the cut-off at less than 5 percent of total government revenues, which we recognize is arbitrary but we needed to be mindful of sample size.<sup>6</sup> The coefficients on the revenue decentralization ratios are again positive and statistically significant, though slightly smaller than in the baseline cases.

The countries in our sample that performed particularly poorly with respect to developments in the governance indicators were the African countries; these countries also had amongst the smallest levels of revenue decentralization. Row 4 deletes these countries from the sample. The coefficients on the revenue decentralization ratio are positive and statistically significant, and slightly smaller than in the baseline cases.

Finally, many economists have argued that governance could be undermined if countries receive substantial non-tax revenues—for example, from foreign aid inflows or natural resource rents—because citizens are likely to be less motivated to scrutinize how government revenues are collected and spent (e.g., Bräutigam and Knack, 2004; Collier and Hoeffler, 2005; Collier, 2007; Leite and Weidmann, 2002). Presumably this argument could apply even if these revenues were decentralized. The main recipients of foreign aid funds in our sample are the African countries and we have shown that their exclusion from the sample makes little difference to the results. Row 5 deletes from the

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<sup>5</sup> These countries are Bahrain, Iceland and Malta.

<sup>6</sup> These countries are Albania, Bahrain, Costa Rica, the Dominican Republic, Ethiopia, Gambia, Indonesia, Malta, Panama, Paraguay, and Trinidad and Tobago.

sample counties receiving substantial fiscal revenues from hydrocarbon exports. The coefficients on the revenue decentralization ratio remain positive and statistically significant, and are slightly larger than in the baseline cases.

## **6. Conclusions**

The fiscal decentralization literature stresses both positive and negative effects of decentralization on the quality of governance in a country. Using data on a cross-section of developed and developing countries, we find that revenue decentralization consistently improves the quality of governance. Our results are statistically significant and are robust to different institutional arrangement governing decentralization, to different estimation methodologies, to variations in the country sample, and to controlling for the influence of other variables that have been shown to have robust effects on the quality of governance. If there are exceptions to our general result, they are likely to be found where revenue decentralization has taken place in newly independent countries and in countries with a high degree of ethnic fractionalization: these are characteristics that may interact with fiscal decentralization in a way that can undermine the quality of governance. With these exceptions, we believe that our results support the notion that policies aimed at fiscal decentralization can be justified on the basis of the greater accountability of government that may result.

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Table 1. Summary statistics

| Variable                                     | N  | Mean  | Standard<br>Deviation | Minimum | Maximum |
|--|----|-------|-----------------------|---------|---------|
| Revenue decentralization ratio <sup>1</sup>  | 59 | 14.25 | 12.03                 | 1.08    | 48.97   |
| Change in quality of governance index        | 59 | -0.08 | 2.62                  | -5.00   | 6.00    |
| Initial quality of governance index          | 59 | 9.90  | 4.32                  | 2.00    | 16.00   |
| Population change/initial population         | 59 | 0.41  | 0.35                  | -0.16   | 1.29    |
| GDP per capita change/initial GDP per capita | 59 | 0.59  | 0.49                  | -0.59   | 1.71    |

1. Revenue decentralization ratio is the share of sub-national government revenue in total government revenue.