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Power to the People? The Impact of Decentralization on Governance

Power to the People? The Impact of Decentralization on Governance

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Abstract

The paper analyzes the impact of decentralization on governance employing four indicators of governance and five measures of decentralization. Depending on data availability, cross-sections for a maximum of 129 countries are estimated. Results for a panel of about 70 countries over the period 1984-2001 are also presented. The results show that decentralization – measured as the share of sub-national employment, revenues or, respectively, expenditures – improves governance. This is particularly true for low income countries but – depending on the indicator employed – to some extent for high income countries also. However, the number of sub-national government tiers exerts a negative impact on some dimensions of governance.

Keywords: Decentralization, Governance, Legal Quality, Judicial Independence, Federalism, Institutions

JEL-Codes: H40, H71, H72, H77

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Introduction

Decentralization of the politico-administrative system is meant to make governments more honest and efficient, as it brings officials closer to the people. According to the World Bank (2004a: p. 53), decentralization "permits a degree of institutional competition between centres of authority that can ... reduce the risk that governments will expropriate wealth". The economic theory of bureaucracy and the literature on institutional competition demonstrate that competition among public agencies reduces bureaucratic waste (e.g., Niskanen 1971), improves respect for regional differences in preferences (Tiebout 1961), serves as a discovery procedure (Hayek 1968), strengthens democratic control ("voice") and protects minorities by facilitating "exit" (Hirschman 1970).[1] Decentralization forces politicians to compete, leading to the improvement of local democracy and political accountability (Betz 1996). Voters can use the performance of other regions as a benchmark ("yardstick competition") to judge the efficiency of their own (Besley and Case 1995). Consequently, local governments are likely to provide local public goods more efficiently. Governance – defined as the traditions and institutions by which authority in a country is exercised for the common good – improves.[2]

However, the positive impact of decentralization on governance is not as obvious as it might look at first sight. Decentralization can create coordination problems thereby delaying or preventing reforms.[3] According to Tsebelis (1999), central governments will be less reform-oriented the more players have a veto over policy enactment. Competition might imply a "race to the bottom", driving local tax rates below the level necessary to finance public goods – governance would consequently deteriorate.[4] Horizontal information externalities might imply the underprovision of policy innovation, preventing sensible institutional reforms (Rose-Ackerman 1980, Strumpf 2002).[5] Kessing, Konrad and Kotsogiannis (2005) show that decentralization is significantly associated with lower foreign direct investment, which might also imply institutional disadvantages as compared to more

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[1] Oates (1999) provides a recent survey.

[2] Work (2002, p. 3) defines governance as "the system of values, policies and institutions by which a society organizes collective decision-making and action related to political, economic and socio-cultural and environmental affairs through the interaction of the state, civil society and the private sector. Governance comprises the complex mechanisms, processes and institutions through which citizens and groups articulate their interests, mediate their differences and exercise their legal rights and obligations."

[3] Prud'homme (1995) and Sewell (1996) provide support for this view.

[4] Empirical evidence is, however, not in favour of this hypothesis. For example, Dreher (2006) does not find a significant impact of an index of globalization on tax competition in the OECD.

[5] However, Kotsogiannis and Schwager (2005) show that policy innovation might even occur more frequently in decentralized systems once politicians' electoral motives are taken into account.

centralized countries. Case study evidence suggests that the benefits of decentralization have been substantially overestimated. As Bierschenk and de Sardan (2003) report from their in depth case study in Benin, decentralization complicated political games at the local level and thereby increased the local veto power and the number of people benefiting from the state. In Benin, decentralization seems to have increased fragmentation of political arenas. Whether and to what extent this relationship holds more generally is, of course, an open question.

As one problem in quantifying the impact of decentralization on governance, neither decentralization nor 'good' governance lend themselves to measurement easily.[6] Actually testing whether decentralization really improves governance is thus no easy task – particularly, results depend on the quality of the underlying data. While the impact of decentralization on corruption and various aspects of public goods provision has recently been estimated in cross-country studies,[7] to the best of my knowledge the test for other indicators of governance is still lacking.[8] Given the importance of good governance on growth and poverty reduction,[9] this is a surprising omission.

This paper fills the gap. It employs four indicators of governance and five measures of decentralization resulting in a cross-section of up to 129 countries over the period 1991-2001 and panel data for about 70 countries in 1984-2001. As the reasons for decentralizing – and thus the impact of decentralization on governance – are likely to differ among high and low income countries,[10] the overall sample is split in two sub-groups containing countries with low and, respectively, high income.

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[6] See Treisman (2002) for an extensive treatment of measuring different dimensions of decentralization. Kaufman et al. (2003) measure certain dimensions of governance. See Bjørnskov (2005) for a critique of their concept.

[7] The evidence on the link between decentralization and corruption is, however, inconclusive. Fisman and Gatti (2002) report that fiscal decentralization reduces corruption, while Treisman (2000a, 2000b) finds the opposite. Treisman (2000b) also finds decentralization to reduce the quality of public health services. The focus of Khaleghian (2003) is on immunization coverage, while Barankay and Lockwood (2005) analyze the impact of decentralization on productive efficiency in Swiss cantons.

[8] The only exception is Huther and Shah (1998) who, however, only provide simple correlations.

[9] On the positive impact of governance on economic growth see, e.g., Knack and Keefer (1995) and Kaufmann and Kray (2002). According to Kofi A. Annan, Secretary General of the United Nations, "Good governance is perhaps the single most important factor in eradicating poverty and promoting developmet" (cited in Work 2002, p. 3).

[10] According to Ebel (1998), Western countries mainly decentralize in order to provide public services in a more cost-effective way, whereas low income countries pursue decentralization mainly to overcome macroeconomic instability and ineffective governance.

The paper is organized as follows. The next section describes the data and derives the hypotheses, while the method of estimation is outlined in section 3. The fourth section presents the results; section 5 provides extensions and discussion. Finally, section 6 concludes.

Data and Hypotheses

The data for this study are drawn from a wide range of sources. Appendix B lists all variables with the exact sources and definitions, while Appendix C reports descriptive statistics.

I employ five measures of decentralization. The number of sub-national employees relative to central government employees is based on the World Bank's Cross-National Data on Government Employment & Wages. It is available for the years 1995 and 2000 for 112 countries. The second and third measures of decentralization are taken from the IMF's Government Finance Statistics (GFS), as presented in a dataset compiled by the World Bank.[11] The numerator of these measures is the total revenue of sub-national governments and, respectively, total expenditure, while the denominator is total spending by all levels of government. Data are employed for the period 1984-2001 for about 70 countries. However, these measures are not free of problems. Kessing, Konrad and Kotsogiannis (2005) provide a summary: First, these data do not contain information about the distribution of power among the central and sub-national governments. Second, the sources of the revenues, intergovernmental transfers, and other grants are not taken into account. And third, they to not account for the extent to which the jurisdictions' tax bases overlap.[12] Nevertheless these data seem to be those used most widely in empirical studies on the effects of centralization (e.g. Lijphart 1984, Fisman and Gatti 2002).

Fourth, a dummy for countries with a federal structure according to the definition of Elazar (1996) is used.[13] And finally, I employ a variable measuring the number of tiers of government in a country. This variable has been constructed by Treisman (2000b) for 145 countries. According to the definition of Treisman, a level of territorial subdivision of a state constitutes a tier of national government if the subdivisions have an executive with

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[11] See http://www1.worldbank.org/publicsector/decentralization/fiscalindicators.htm (September 10, 2005).

[12] See Treisman (2002) and Ebel and Yilmaz (2002) for a more detailed discussion.

[13] All these countries share a constitutionally defined autonomy for subnational governments. The countries are Argentina, Austria, Australia, Belgium, Bosnia and Herzegovina, Brazil, Germany, Canada, Comoros, Ethiopia, India, Malaysia, Mexico, Nigeria, Pakistan, Russia, Spain, Switzerland, St. Kitts and St. Nevis, United Arab Emirates, USA, Venezuela, and Yugoslavia.

government authority, this sub-national executive has responsibility for general administration, and the superior tier is subdivided territorially into units of this type.

The number of sub-national government tiers represents a measure of vertical decentralization. However, as more tiers do not necessarily imply greater fiscal decentralization they might simply measure the greater number of actors encroaching the common tax base (Kessing, Konrad and Kotsogiannis 2005).

Regarding measures of governance and institutional quality, the focus is on four proxies, all of which measure some aspects of governance. Only one of these proxies shows extensive time series variation: the index of *law and order* from the International Country Risk Guide (ICRG) of the PRS Group. The law and order indicator assesses the strength and impartiality of the legal system as well as the popular observance of the law. It ranges from zero to six, where a higher number indicates a better system of law and order. This index is available over the period 1984-2001 for a maximum of 140 countries.

The second proxy has recently been constructed by the World Bank. It measures the *costs of opening a new business*. Specifically, the data measure the costs of the start-up of commercial or industrial firms with up to 50 employees and start-up capital of 10 times the economy's per-capita Gross National Income. All procedures required to register a firm are counted, including screening procedures by overseeing government entities, tax- and labour-related registration procedures, health and safety procedures, and environment-related procedures. The costs of these procedures as a percentage of income per capita are calculated for 155 countries.

The third proxy of governance is part of the Fraser Institute's Economic Freedom Index (Gwartney and Lawson 2004). The *judicial independence* index measures whether the judiciary is independent and not subject to interference by the government or parties in disputes. The index ranges between one and ten, with higher values representing greater independence. Data are available for the years 1995, 2000, 2001, and 2002 for a maximum of 80 countries.

The fourth proxy for governance is the World Bank's *rule of law* index. The index covers about 200 countries for five time periods: 1996, 1998, 2000, 2002 and 2004. It is based on several hundred individual variables measuring perceptions of governance, drawn from 37 separate data sources. In the sample employed for this study, the index ranges from -2.31 to 2.36.

As already outlined in the introduction, the impact of decentralization on governance can be positive as well as negative. This implies the following hypotheses:

Hypothesis 1a: Decentralization improves law and order, and the rule of law, reduces the costs to start a business, and increases judicial independence.

Hypothesis 1b: Decentralization deteriorates law and order, and the rule of law, increases the costs to start a business, and decreases judicial independence.

The selection of covariates follows Fisman and Gatti's (2002) study of decentralization and corruption. I include the (logarithm of) per capita GDP and the (logarithm of) the country's population (both from the World Bank, 2003). An index measuring civil liberties is also included. This index has been developed by Gastil (2002). It ranges from 1 to 7, where higher values reflect less liberty.

GDP per capita controls for the level of development, while population is included as larger countries show reduced ability to keep self-interested bureaucrats in check, thus worsening governance (Treisman 2000b). In smaller states governments must include a larger share of the population in their patronage network. Patronage thus becomes less attractive in buying political support (Bueno de Mesquita and Root 2000), potentially improving governance. The index of civil liberties is employed to capture the extent by which citizens can influence governance and institutions. More liberty is likely to improve governance.

Method

As many variables employed in this study are not available for a sufficient number of years, most results presented below are based on cross section regressions. The data are averaged over the period 1991-2001 to increase the number of observations. The sample is then split into two income groups, where – according to the definition of the World Bank – the first group comprises low income and lower middle income countries, and the second consists of upper middle and high income countries.[14] As the number of observations in some of the sub-samples is rather small, the results for these sub-groups have to be interpreted cautiously. The regressions take the following form:

$$gov_{ji} = \alpha + \beta_1 decentr_{ki} + \beta_2 \log(GDP_i) + \beta_3 civil_i + \beta_4 \log(pop_i) + \varepsilon_i \; , \tag{1}$$

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[14] Countries are in the first group if their 2004 GNI per capita does not exceed $3,255, and in the second otherwise. I choose to split the sample instead of using interaction terms as specification tests reject most of the regressions including all countries but accept most sub-sample regressions.

where gov$_j$ represents the jth measure of governance, and decentr$_k$ is the kth indicator of decentralization. I do not include the decentralization indices at the same time due to their high correlation.[15] The exception is the number of sub-national government tiers, which is included in the extension of section 5 to regressions also including one other measure of decentralization at the time. All standard errors are estimated robustly.

Clearly, there is reason to expect governance and decentralization to be jointly determined by specific country characteristics. Decentralization might thus be endogenous to governance. I employ instrumental variables to deal with this potential endogeneity problem. In selecting appropriate instruments, I again follow Fisman and Gatti (2002), instrumenting for the decentralization indices with dummy variables indicating the legal origin of a country (introduced by La Porta et al. 1998). There is good reason to expect legal origin to perform well as an instrument for decentralization. As Fisman and Gatti (2002: p. 332) point out, "legal scholars have noted the 'affinity' of a Civil (as opposed to Common) legal code for government centralization, since the Civil law system emphasizes the need to conform to the constraints of statutes laid down by (federal) legislators". Fisman and Gatti also plausibly argue that legal origin is only indirectly related to governance, which is supported by the empirical work of Rajan and Zingales (1999). The second equation thus takes the form:

$$decentr_{ki} = \gamma_1 origin_{zi} + \varepsilon_i , \qquad\qquad (2)$$

with origin representing British, French, Socialist, and Scandinavian legal origin (and German origin being the base category). F-tests on the joint significance of the legal origin dummies show that they are good predictors of the degree of decentralization. In most (but not all) cases, the overidentifying restrictions are also accepted.

As the *law and order* index is available on a yearly basis for a sufficiently long period of time, I also estimate pooled time-series cross-section (panel data) regressions for the two measures of decentralization showing sufficient time series variation: sub-national revenues and expenditures. The annual data cover the years 1984-2001 and extend to a maximum of 70 countries. Since some of the data are not available for all countries or years, the panel data are unbalanced and the number of observations depends on the choice of explanatory variables. There are significant fixed country effects in all specifications. However, the coefficients of the country effects are not reported in the tables. Again I also present results employing

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[15] Correlation between expenditure share and revenue share is 0.94. The correlations with employment share and the federal dummy are 0.58 and, respectively 0.50. Only correlation with the number of sub-national tiers is rather low (0.05). Treisman (2002) also reports that vertical decentralization (as measured by the number of tiers) is not closely related to other measures of decentralization.

instrumental variables (without including the country dummies as they are collinear with the instruments). Equations (1) and (2) transform to:

$$gov_{jit} = \alpha + \beta_1 decentr_{kit} + \beta_2 \log(GDP_{it}) + \beta_3 civil_{it} + \beta_4 \log(pop_{it}) + \eta_i + \varepsilon_{ti}, \qquad (3)$$

$$decentr_{kit} = \gamma_1 origin_{zit} + \varepsilon_{it}. \qquad (4)$$

The next section presents the results.

Results

To keep the presentation manageable, the main body of the paper only contains the full presentation of cross-sectional results for one decentralization proxy, sub-national revenues.[16] Results for the other three proxies are summarized in one table, while the detailed results are presented in Appendix A. I also present the detailed results for the panel estimations.

Table 1 starts with the results for *law and order*. As can be seen, law and order is more likely with higher per capita GDP, with a coefficient significant at the one percent level in the samples covering all and, respectively, only high income countries. Civil liberties and population size do not affect law and order consistently across the regressions. Most importantly for this analysis, however, law and order is significantly more likely with a higher share of sub-national revenues. The table shows that this relationship holds in the full sample and the low income sample, but not for the sample including high income countries only. The coefficient of the decentralization variable is significant at the five percent level at least and is quantitatively important. The coefficients of the IV estimates show that an increase in the sub-national revenue share by ten percentage points increases the index by 0.5 points in the full sample and 0.6 points in the low income sample. This is the difference between, e.g., Lebanon (1.5) and Morocco (2.0). The goodness of fit statistics show some problems in the full sample however, while they accept the model in the low income sample.[17] The Sargan test accepts the overidentifying restrictions in the 2SLS regressions of columns (2) and (4). The partial leverage plot of figure 1 illustrates that the result for the impact of the sub-national revenue share on law and order is not driven by outliers.

Table 2 turns to the *costs of starting a business*.[18] Again, the results show no consistent picture, with the covariates being insignificant in most specifications. However,

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[16] This proxy has been widely used in the literature. See, e.g., Lijphart (1984).

[17] Note, however, that the number of countries included in the small income sample is only 26.

[18] Initial results showed to be influenced by a small number of extreme outliers with costs above 150 percent of personal income: Bolivia, Nicaragua, Paraguay, Zimbabwe. These outliers have been excluded from the regressions.

regarding decentralization, the results again show a positive impact. In the 2SLS specifications, the costs to start a business rise significantly with a lower share of sub-national revenues. This result prevails in the overall sample and the two sub-groups, while the coefficient is insignificant in the OLS specification for high income countries only. Again, the coefficients show a substantial quantitative impact. An increase in the sub-national revenue share by one percentage point reduces the costs of opening a business by 0.67 percent of per capita GNI according to the IV estimates for the overall sample. In low income countries the impact amounts to a staggering 1.4 percent. The partial leverage plot of figure 2 further illustrates the relation between the costs to start a business and the sub-national revenue share.

Results for *judicial independence* are reproduced in Table 3. They show that judicial independence is significantly more likely with more civil liberties. When controlled for the endogeneity of decentralization, the sub-national revenue share positively determines independence of the judiciary in the overall sample, with a coefficient significant at the five percent level. Also at the five percent level, the same is true in the sample of high income countries. The coefficients show a similar magnitude for the impact of decentralization. A ten percentage points increase in the sub-national revenue share increases the index by about 0.8 points.

Table 4 presents the results for the *rule of law*. As can be seen, the results are in line with those presented previously. Again, decentralization significantly improves governance in the full IV sample. Again, the same is true for the sample consisting of high income countries only. An increase in the share of sub-national revenues by ten percentage points increases the rule of law index by almost 0.2 points.

In the full sample, the rule of law also improves with higher per capita GDP (at the one percent level) and more civil liberties (also at the one percent level). Civil liberties remain significant in the low income country sample, while the coefficient of GDP per capita is insignificant.

Before turning to the results of the panel regressions, Table 5 summarizes the estimations of the decentralization proxies for all regressions (presented in detail in Appendix A). The table shows that the results for the overall sample fully correspond to those for the low income sample for all four measures of government, while there are less significant coefficients in the high income sample.

When the endogeneity of decentralization is taken into account, the results are strongly in favour of the positive link from decentralization to governance. In the full country sample, *law and order* significantly improves with a higher sub-national share in employment (in the

2SLS regression), expenditures, and revenues. The number of sub-national tiers, to the contrary significantly reduces the quality of law and order according to the IV estimates, while the dummy for federal structure shows no significant coefficient. The result is in line with Treisman (2000b) finding this measure of decentralization to increase perceived corruption and worsening public health services. The result supports the hypothesis that vertical administrative decentralization generates roadblocks to any change of the status quo, thereby deteriorating governance. The issue will be investigated in more detail below.

The *costs to start a business* show the same pattern as those for law and order.[19] Again, the number of sub-national tiers has a negative impact in the overall and low income sample – i.e., it increases the costs significantly, while costs are declining with the share of the sub-national government in employment, revenues, and, respectively, expenditures. The dummy for federal states is completely insignificant.

Results for *judicial independence* and the *rule of law* are again similar in the overall sample. As can be seen in the table, judicial independence and the rule of law significantly improve with a higher share of sub-national expenditures and, respectively, revenues – with the 2SLS coefficient being significant at the five percent level. However, contrary to the previous results, this seems to be driven by the sample of high income countries, while there is no significant impact of decentralization in the sample of low income countries. According to the 2SLS regressions for high income countries, the number of sub-national tiers again reduces governmental quality, but only at the ten percent level of significance.

The results of Table 5 show that the quantitative impact of the sub-national expenditure share is comparable to those of revenues discussed above. An increase in relative sub-national employment by one point increases the *law and order* index by 0.25 points and reduces the *costs to open a business* by almost 16 percent of per capita GNI (based on the IV estimates for the full sample). An additional sub-national tier reduces the *law and order* index by almost 1.4 points and the *costs of opening a business* by 215 percent of GNI per capita (again based on the IV estimates for the full sample).

Finally, we turn to the results of the panel regressions. Table 6 contains the estimates for sub-national expenditures, Table 7 those for revenues. In the full sample, the number of observations is almost 700. The share of the variation of the dependent variable that is explained by the regressors is well above 80 percent in the OLS (fixed effects) regressions, it is still about 50 percent in the instrumental variables regressions. The increased sample size

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[19] Again, initial results showed to be influenced by a small number of extreme outliers. These outliers have been excluded from the regressions.

substantially reduces the standard errors, resulting in an overall increase in the t-statistics. As can be seen, the *rule of law* significantly improves with a higher GDP per capita and more civil liberties. The rule of law significantly improves with population size in the within-groups regressions, while it deteriorates significantly in the 2SLS estimations. One possible explanation is the high correlation between population size and the share of sub-national revenues and expenditures (0.29 and, respectively, 0.35).

Turning to the impact of decentralization, the results show a clear picture. Relatively higher sub-national expenditures significantly improve the rule of law in all but the final specification. Regarding revenues, the same results hold for the overall and low income sample, but only when endogeneity is taken into account. The coefficients show a quantitative impact comparable to the cross section estimates.

In summary, there is some evidence that decentralization improves governance, particularly in low income countries.

Further Discussion

The results presented above show that, overall, decentralization improves governance. They also show, however, that vertical decentralization, measured by the number of sub-national government tiers tends to deteriorate governance. Given the low correlation between the number of tiers and the other measures of decentralization (reported in footnote 15) it seems valid to include this variable to the regressions also containing one other (significant) decentralization variable at the time. This allows distinguishing the effect of administrative decentralization from those of fiscal decentralization. The results show that the number of sub-national tiers becomes insignificant in all regressions, while the significance of the other variables remains (not reported in the tables). Overall, these results are in line with the hypothesis that fiscal competition improves governance, while vertical administrative decentralization does not (or is even harmful). The results thus support the hypothesis that the vertical division of labor produces considerable free riding, deteriorating governance.[20]

An important issue in cross section regression studies is the potential influence of outliers. I therefore check the significant OLS results for the influence of outliers using an algorithm that is robust to them. The robust regression technique weighs observations in an iterative process. Starting with OLS, estimates are obtained through weighted least squares

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[20] One recent example is hurricane Katrina devastating New Orleans. Arguably, one of the reasons for the dimension of the catastrophe might be that the state did not maintain the dikes around the city properly, because they hoped that the federal government would eventually bail them out.

where observations with relatively large residuals get smaller weight. This results in estimates not being overly influenced by any specific observation. Overall, the robust regressions confirm the previous results when the robust regression technique is used. Most (but not all) significant coefficients remain significant at the ten percent level at least (not reported in tables).

Finally, one of the main challenges in empirical analysis is coming up with a reliable and robust model. Frequently, the results of empirical models change substantially if other – equally plausible – explanatory variables are included to the regression. I therefore test the robustness of my results to the inclusion of additional covariates. In the literature on governance, a number of control variables has been suggested. I include the following variables to the regressions (for the overall sample) one at the time: total aid flows in percent of GDP (as suggested by Knack 1999), a countries' Polity IV democracy score, openness to trade (suggested by Treisman 2000a), ethnolinguistic fractionalization, latitude, the share of Protestant people in population, and religious fractionalization (La Porta et al. 1998). The results are quite robust to the inclusion of these additional variables. In the 2SLS regressions, most coefficients remain significant at the ten percent level at least.[21] Most of the OLS results are also unchanged.[22]

The next section presents a summary and concludes.

Conclusions

The paper analyzed the impact of decentralization on governance employing four indicators of governance and five measures of decentralization. The results show that decentralization to some extent improves governance. This is particularly true for low income countries but also – depending on the indicator employed – for countries with high income. Overall, the results thus support the Tieboutian idea that decentralized governments improve the functioning of the state. The results also show that vertical administrative decentralization, as measured by the number of sub-national government tiers, does not improve governance. If the other

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[21] The exceptions are the impact of sub-national employment on the costs to start business when a countries' (absolute) latitude is included, and those of the share in sub-national revenue or expenditure on judicial independence and the rule of law, when Protestant religion is added.

[22] There are some exceptions: sub-national expenditures no longer significantly affect law and order and the rule of law when latitude and, respectively, latitude, the share of Protestants in population, or religious fractionalization are included. The number of sub-national tiers no longer affects the costs to start business when openness to trade is included. The effect of sub-national employment is not robust to the inclusion of aid and trade openness.

measures of decentralization employed in this paper are omitted from the regressions, the impact of more government tiers even tends to deteriorate governance. Fiscal decentralization as measured by sub-national shares in revenues and expenditures and higher relative sub-national employment improves governance.

Clearly, the quantitative effects obtained in this study only represent the average impact of decentralization. There is, however, good reason to believe that decentralization might block reforms under certain conditions, potentially deteriorating governance and institutional quality, while it improves governance in other situations.[23] Under which conditions decentralization improves governance remains an interesting area for future research.

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[23] Bardhan and Mookherjee (1998), in their theoretical model, compare the delivery of public goods under centralized and decentralized provision, and show that the welfare consequences depend on the political context.

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Table 1: Law and Order and Sub-national Revenues, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Sub-national revenue share	0.018	0.049	0.025	0.058	-0.002	0.011
	(2.42**)	(3.68***)	(2.19**)	(2.64**)	(0.34)	(1.26)
(log) GDP per capita	0.489	0.419	0.006	0.088	0.706	0.790
	(4.62***)	(3.33***)	(0.03)	(0.3)	(3.92***)	(3.55***)
Civil liberties, index	-0.132	-0.136	-0.098	-0.147	-0.228	-0.225
	(1.34)	(1.26)	(0.67)	(0.97)	(1.75*)	(1.42)
(log) Population	-0.056	-0.145	-0.062	-0.148	-0.039	-0.057
	(0.93)	(1.79*)	(0.69)	(1.32)	(0.65)	(0.86)
constant	1.416	2.873	4.639	5.157	-0.310	-1.163
	(0.83)	(1.47)	(1.57)	(1.53)	(0.14)	(0.48)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.63	0.56	0.15	0.00	0.65	0.72
Number of observations	63	59	26	26	37	33
F-test (Prob>F)	0.00	0.00	0.20	0.17	0.00	0.00
Normality test (Prob>chi2)	0.00		0.02		0.12	
Heteroscedasticity test (Prob>chi2)	0.01		0.85		0.00	
RESET (Prob>F)	0.07		0.83		0.75	
Sargan test (Prob>F)		0.36		0.61		0.03

* denotes significant at 10% level; ** significant at 5% level; ***** significant at 1% level.

Table 2: Costs to Start Business and Sub-national Revenues, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Sub-national revenue share	-0.480	-0.666	-1.009	-1.402	-0.149	-0.334
	(3.1***)	(3.19***)	(3.89***)	(4.02***)	(1.37)	(2.17**)
(log) GDP per capita	-3.458	-2.839	-5.588	-6.598	-7.654	-8.163
	(1.4)	(0.98)	(0.97)	(1.04)	(2.01*)	(1.91*)
Civil liberties, index	2.423	2.794	5.949	6.585	-0.777	-0.793
	(0.96)	(1)	(1.26)	(1.33)	(0.32)	(0.32)
(log) Population	2.025	2.326	2.862	3.797	0.631	0.687
	(1.22)	(1.28)	(0.96)	(1.15)	(0.58)	(0.55)
constant	14.363	7.096	10.031	5.484	76.463	85.027
	(0.55)	(0.26)	(0.25)	(0.13)	(1.75*)	(1.7)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.46	0.46	0.50	0.44	0.46	0.50
Number of observations	55	51	23	23	32	28
F-test (Prob>F)	0.00	0.00	0.00	0.00	0.00	0.00
Normality test (Prob>chi2)	0.00		0.00		0.00	
Heteroscedasticity test (Prob>chi2)	0.00		0.18		0.00	
RESET (Prob>F)	0.00		0.49		0.57	
Sargan test (Prob>F)		0.15		0.34		0.04

* denotes significant at 10% level; ** significant at 5% level; ***** significant at 1% level.

Extreme outliers with costs above 150 percent of per capita income excluded: Bolivia, Nicaragua, Paraguay, Zimbabwe.

Table 3: Judicial Independence and Sub-national Revenues, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Sub-national revenue share	0.017	0.078	0.002	-0.025	0.006	0.079
	(0.85)	(2.62**)	(0.08)	(0.54)	(0.26)	(2.28**)
(log) GDP per capita	0.875	0.655	0.454	0.505	0.975	0.602
	(2.25**)	(1.51)	(0.66)	(0.74)	(2.43**)	(1.33)
Civil liberties, index	-0.762	-0.718	-0.954	-0.937	-0.904	-0.705
	(2.06**)	(1.89*)	(3***)	(2.51**)	(2*)	(1.29)
(log) Population	0.234	-0.024	0.834	0.956	-0.061	-0.336
	(1.4)	(0.12)	(2.85**)	(2.8**)	(0.43)	(1.65)
constant	-3.967	1.011	-10.282	-12.393	0.361	6.607
	(0.99)	(0.2)	(1.2)	(1.43)	(0.08)	(1.23)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.66	0.58	0.46	0.44	0.64	0.48
Number of observations	57	53	20	20	37	33
F-test (Prob>F)	0.00	0.00	0.03	0.05	0.00	0.01
Normality test (Prob>chi2)	0.68		0.23		0.04	
Heteroscedasticity test (Prob>chi2)	0.16		0.89		0.02	
RESET (Prob>F)	0.23		0.17		0.03	
Sargan test (Prob>F)		0.00		0.00		0.12

* denotes significant at 10% level; ** significant at 5% level; ******* significant at 1% level**.**

Table 4: Rule of Law and Sub-national Revenues, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Sub-national revenue share	0.007	0.017	0.006	0.008	-0.001	0.017
	(1.56)	(2.28**)	(0.86)	(0.96)	(0.1)	(2.07**)
(log) GDP per capita	0.451	0.438	0.053	0.061	0.604	0.501
	(5.78***)	(7.13***)	(0.49)	(0.56)	(7.29***)	(4.94***)
Civil liberties, index	-0.229	-0.224	-0.353	-0.358	-0.210	-0.178
	(2.88***)	(3.74***)	(5.22***)	(5.55***)	(2.58**)	(2.13**)
(log) Population	0.001	-0.033	0.091	0.085	-0.035	-0.100
	(0.04)	(0.82)	(2.76**)	(2.63**)	(0.99)	(1.91*)
constant	-2.727	-2.244	-0.975	-0.954	-3.441	-1.811
	(2.94***)	(2.65***)	(0.73)	(0.74)	(3.26***)	(1.31)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.86	0.84	0.62	0.61	0.82	0.71
Number of observations	67	63	29	29	38	34
F-test (Prob>F)	0.00	0.00	0.00	0.00	0.00	0.00
Normality test (Prob>chi2)	0.94		0.22		0.01	
Heteroscedasticity test (Prob>chi2)	0.05		0.20		0.01	
RESET (Prob>F)	0.01		0.26		0.15	
Sargan test (Prob>F)		0.04		0.04		0.52

* denotes significant at 10% level; ** significant at 5% level; ******* significant at 1% level**.**

Table 5: Impact of Decentralization, cross sections, summary

	All		Low Income		High Income	
	OLS	2SLS	OLS	2SLS	OLS	2SLS
Law and Order						
Sub-national employment share	0.057	0.249	0.052	0.221	-0.032	0.153
	(1.24)	(2.6**)	(1.16)	(2.36**)	(0.5)	(1)
Sub-national expenditure share	0.015	0.048	0.011	0.047	0.000	0.029
	(2.15**)	(3.67***)	(1.07)	(2.29**)	(0.06)	(1.7*)
Sub-national revenue share	0.018	0.049	0.025	0.058	-0.002	0.011
	(2.42**)	(3.68***)	(2.19**)	(2.64**)	(0.34)	(1.26)
Federal structure, dummy	-0.226	-1.094	-0.138	4.497	-0.413	-1.191
	(0.99)	(1.21)	(0.34)	(0.57)	(2.11**)	(1.46)
Number of tiers	0.066	-1.385	0.047	-2.347	-0.054	-0.663
	(0.57)	(2.85***)	(0.33)	(2.04**)	(0.39)	(1.74*)
Costs to Start Business						
Sub-national employment share	-3.291	-13.291	-3.559	-14.322	-0.305	-5.884
	(3.38***)	(2.87***)	(2.83***)	(2.63**)	(0.12)	(1.56)
Sub-national expenditure share	-0.365	-0.667	-0.717	-1.23	-0.078	-0.432
	(2.54**)	(3.09***)	(2.48**)	(3.57***)	(0.61)	(1.43)
Sub-national revenue share	-0.48	-0.666	-1.009	-1.402	-0.149	-0.334
	(3.1***)	(3.19***)	(3.89***)	(4.02***)	(1.37)	(2.17**)
Federal structure, dummy	3.726	77.974	-32.621	-1664.59	-7.031	-0.189
	(0.24)	(1.03)	(1.03)	(0.7)	(1.41)	(0.02)
Number of tiers	15.69	154.331	19.789	205.442	3.419	-3.756
	(2.72***)	(3.07***)	(2.2**)	(2.59**)	(0.54)	(0.2)
Judicial Independence						
Sub-national employment share	0.038	0.03	-0.096	-0.264	0.218	0.837
	(0.41)	(0.17)	(1.4)	(1.56)	(1.03)	(1.95*)
Sub-national expenditure share	0.023	0.074	0.009	-0.014	0.012	0.077
	(1.17)	(2.44**)	(0.33)	(0.25)	(0.54)	(2.23**)
Sub-national revenue share	0.017	0.078	0.002	-0.025	0.006	0.079
	(0.85)	(2.62**)	(0.08)	(0.54)	(0.26)	(2.28**)
Federal structure, dummy	-0.311	4.451	-0.105	23.447	-0.504	-0.409
	(0.58)	(1.61)	(0.13)	(1.2)	(0.83)	(0.28)
Number of tiers	0.109	0.012	-0.108	-24.694	-0.375	-4.069
	(0.49)	(0.01)	(0.32)	(0.23)	(1.16)	(1.77*)
Rule of Law						
Sub-national employment share	-0.018	-0.005	-0.019	-0.031	-0.018	0.246
	(1.72*)	(0.23)	(2.37**)	(1.5)	(0.36)	(1.57)
Sub-national expenditure share	0.008	0.014	0.007	0.008	0	0.019
	(1.82*)	(2.29**)	(1.16)	(1)	(0.04)	(2.09**)
Sub-national revenue share	0.007	0.017	0.006	0.008	-0.001	0.017
	(1.56)	(2.28**)	(0.86)	(0.96)	(0.1)	(2.07**)
Federal structure, dummy	-0.097	0.387	-0.122	2.821	-0.241	-0.268
	(0.72)	(0.86)	(0.77)	(0.88)	(1.6)	(0.84)
Number of tiers	0.042	-0.037	0.067	0.23	-0.066	-0.445
	(0.62)	(0.16)	(1.22)	(0.93)	(0.78)	(1.9*)

* denotes significant at 10% level; ** significant at 5% level; ***** significant at 1% level.**

The detailed results are presented in Tables 1 to 4 and A-1 to A-16 (Appendix A).

Table 6: Rule of Law and Sub-national Expenditures, panel

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Sub-national expenditure share	0.021	0.064	0.049	0.083	0.083	0.018
	(1.96**)	(4.4***)	(2.84***)	(3.46***)	(3.46***)	(0.9)
(log) GDP per capita	1.300	0.581	1.895	0.507	0.507	1.242
	(5.03***)	(6.53***)	(4.5***)	(2.4**)	(2.4**)	(6.62***)
Civil liberties, index	-0.083	-0.031	-0.209	-0.115	-0.115	0.100
	(1.89*)	(0.89)	(3.34***)	(2.13**)	(2.13**)	(2.17**)
(log) Population	2.427	-0.157	2.585	-0.160	-0.160	-0.014
	(4.02***)	(1.77*)	(3.01***)	(0.98)	(0.98)	(0.12)
constant	-46.779	0.694	-53.687	1.293	1.293	-6.936
	(5.34***)	(0.41)	(4.21***)	(0.42)	(0.42)	(2.63***)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Fixed Effects	Yes	No	Yes	No	Yes	No
Adjusted R2	0.87	0.52	0.04	0.04	0.43	0.48
Number of countries	70	66	31	31	39	1
Number of observations	677	661	234	234	443	427
F-test (Prob>F)	0.00	0.00	0.00	0.00	0.00	0.00
Normality test (Prob>chi2)	0.38		0.83		0.00	

* denotes significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Table 7: Rule of Law and Sub-national Revenues, panel

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Sub-national revenue share	-0.003	0.069	0.053	0.103	-0.012	0.007
	(0.25)	(5.51***)	(1.52)	(5.84***)	(0.79)	(0.4)
(log) GDP per capita	1.313	0.573	1.749	0.210	1.655	1.368
	(5.06***)	(7.53***)	(4.21***)	(1.33)	(5.34***)	(8.12***)
Civil liberties, index	-0.088	-0.075	-0.240	-0.120	0.098	0.087
	(1.99**)	(2.13**)	(3.79***)	(2.03**)	(1.82*)	(1.92*)
(log) Population	2.804	-0.134	3.267	-0.264	1.167	0.063
	(4.67***)	(1.98**)	(4***)	(2.64***)	(1.26)	(0.67)
constant	-52.607	0.693	-63.966	5.115	-29.245	-9.060
	(5.98***)	(0.51)	(5.24***)	(2.48**)	(2.21**)	(3.88***)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Fixed Effects	Yes	No	Yes	No	Yes	No
Adjusted R2	0.87	0.50	0.73	0.04	0.81	0.46
Number of countries	69	65	31	31	38	34
Number of observations	668	662	236	236	432	416
F-test (Prob>F)	0.00	0.00	0.00	0.00	0.00	0.00
Normality test (Prob>chi2)	0.70		0.84		0.00	

* denotes significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Figure 1: Law and Order and Sub-national Revenues, partial leverage plot
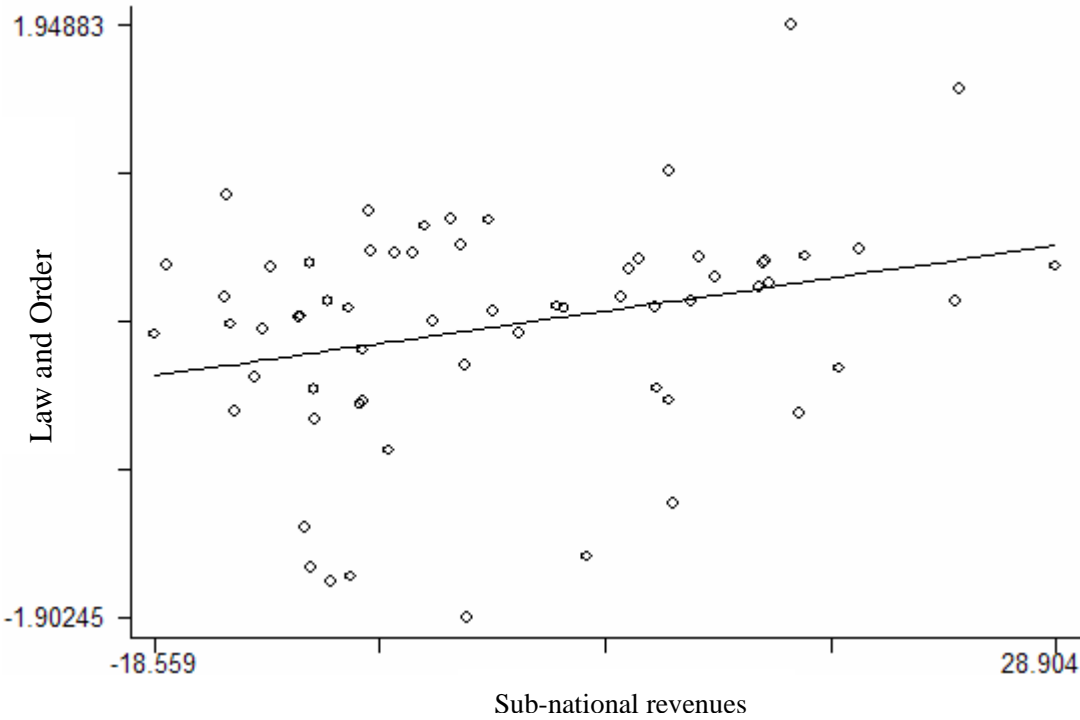
Note: Leverage plot is based on Table 1, column 1.

Figure 2: Costs to Start Business and Sub-national Revenues, partial leverage plot
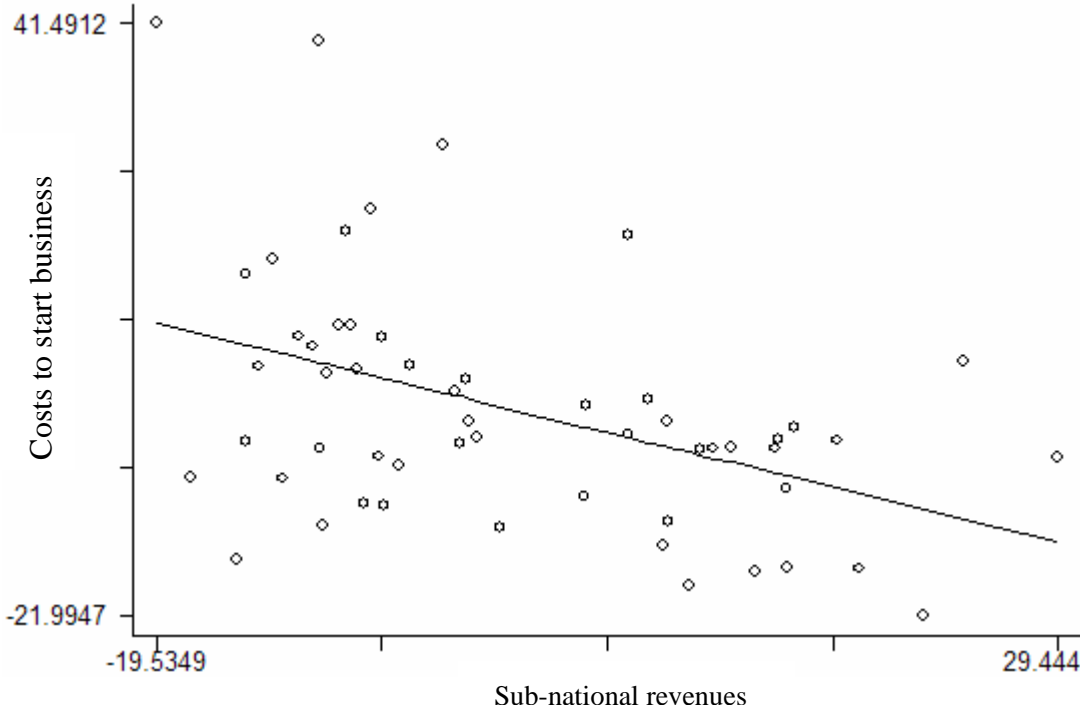
Note: Leverage plot is based on Table 2, column 1.

Appendix A: Detailed Results

Table A-1: Law and Order and Sub-national Employment, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Sub-national employment share	0.057	0.249	0.052	0.221	-0.032	0.153
	(1.24)	(2.6**)	(1.16)	(2.36**)	(0.5)	(1)
(log) GDP per capita	0.516	0.468	0.195	0.099	0.731	0.790
	(6.68***)	(5.37***)	(0.86)	(0.4)	(5.09***)	(4.79***)
Civil liberties, index	-0.107	-0.165	0.047	-0.058	-0.239	-0.207
	(1.42)	(1.93*)	(0.36)	(0.33)	(2.88***)	(2.12**)
(log) Population	0.003	-0.130	0.042	-0.089	-0.066	-0.136
	(0.05)	(1.59)	(0.45)	(0.76)	(0.79)	(1.8*)
constant	0.334	2.778	1.127	4.102	-0.080	0.143
	(0.22)	(1.62)	(0.42)	(1.34)	(0.04)	(0.08)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.55	0.43	0.09	0.00	0.65	0.69
Number of observations	91	85	48	46	43	39
F-test (Prob>F)	0.00	0.00	0.29	0.12	0.00	0.00
Normality test (Prob>chi2)	0.17		0.03		0.04	
Heteroscedasticity test (Prob>chi2)	0.01		0.50		0.00	
RESET (Prob>F)	0.01		0.25		0.92	
Sargan test (Prob>F)		0.10		0.16		0.03

* denotes significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Table A-2: Law and Order and Sub-national Expenditures, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Sub-national expenditure share	0.015	0.048	0.011	0.047	0.000	0.029
	(2.15**)	(3.67***)	(1.07)	(2.29**)	(0.06)	(1.7*)
(log) GDP per capita	0.509	0.414	0.089	0.155	0.746	0.682
	(5.11***)	(3.33***)	(0.35)	(0.49)	(4.43***)	(2.86***)
Civil liberties, index	-0.080	-0.073	0.023	-0.026	-0.199	-0.176
	(0.88)	(0.69)	(0.17)	(0.16)	(1.51)	(1.05)
(log) Population	-0.058	-0.188	-0.064	-0.172	-0.034	-0.139
	(1.01)	(2.12**)	(0.71)	(1.39)	(0.63)	(1.45)
constant	1.126	3.193	3.854	4.603	-0.897	0.565
	(0.68)	(1.6)	(1.28)	(1.27)	(0.47)	(0.2)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.60	0.51	0.05	0.00	0.62	0.60
Number of observations	64	60	25	46	39	35
F-test (Prob>F)	0.00	0.00	0.44	0.32	0.00	0.00
Normality test (Prob>chi2)	0.00		0.01		0.15	
Heteroscedasticity test (Prob>chi2)	0.03		0.80		0.00	
RESET (Prob>F)	0.01		0.35		0.58	
Sargan test (Prob>F)		0.51		0.88		0.08

* denotes significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Table A-3: Law and Order and Federal Structure, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Federal structure, dummy	-0.226	-1.094	-0.138	4.497	-0.413	-1.191
	(0.99)	(1.21)	(0.34)	(0.57)	(2.11**)	(1.46)
(log) GDP per capita	0.530	0.566	0.295	0.593	0.782	0.931
	(8.78***)	(7.62***)	(2.02**)	(1.15)	(6.12***)	(6.62***)
Civil liberties, index	-0.133	-0.154	-0.073	0.196	-0.165	-0.150
	(2.38**)	(2.78***)	(0.66)	(0.44)	(2.75***)	(2.63**)
(log) Population	0.102	0.186	0.124	-0.315	0.065	0.160
	(1.9*)	(1.83*)	(1.24)	(0.44)	(1.2)	(1.44)
constant	-1.260	-2.693	-0.379	3.368	-2.824	-5.591
	(1.11)	(1.42)	(0.21)	(0.52)	(1.87*)	(2.27**)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.57	0.52	0.12	0.37	0.62	0.57
Number of observations	129	123	75	73	54	50
F-test (Prob>F)	0.00	0.00	0.13	1.10	0.00	0.00
Normality test (Prob>chi2)	0.54		0.02		0.12	
Heteroscedasticity test (Prob>chi2)	0.01		0.75		0.00	
RESET (Prob>F)	0.01		0.25		0.76	
Sargan test (Prob>F)		0.00		0.02		0.26

* denotes significant at 10% level; ** significant at 5% level; **** significant at 1% level.

Table A-4: Law and Order and number of tiers, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Number of tiers	0.066	-1.385	0.047	-2.347	-0.054	-0.663
	(0.57)	(2.85***)	(0.33)	(2.04**)	(0.39)	(1.74*)
(log) GDP per capita	0.525	0.160	0.248	-0.601	0.787	0.794
	(7.88***)	(1.01)	(1.52)	(1.08)	(5.12***)	(5.01***)
Civil liberties, index	-0.157	-0.166	-0.181	0.021	-0.153	-0.174
	(2.59**)	(1.84*)	(1.61)	(0.08)	(2.1**)	(1.98*)
(log) Population	0.091	0.434	0.168	0.750	0.026	0.147
	(1.5)	(3.14***)	(1.91*)	(2.74***)	(0.39)	(1.49)
constant	-1.253	1.530	-0.535	4.443	-2.245	-2.201
	(1.17)	(0.8)	(0.29)	(0.94)	(1.3)	(1.04)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.61	0.00	0.14	0.00	0.61	0.46
Number of observations	110	105	59	58	51	47
F-test (Prob>F)	0.00	0.00	0.07	0.08	0.00	0.00
Normality test (Prob>chi2)	0.03		0.00		0.88	
Heteroscedasticity test (Prob>chi2)	0.02		0.87		0.00	
RESET (Prob>F)	0.02		0.68		0.22	
Sargan test (Prob>F)		0.39		0.68		0.75

* denotes significant at 10% level; ** significant at 5% level; **** significant at 1% level.

Table A-5: Costs to Start Business and Sub-national Employment, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Sub-national employment share	-3.291	-13.291	-3.559	-14.322	-0.305	-5.884
	(3.38***)	(2.87***)	(2.83***)	(2.63**)	(0.12)	(1.56)
(log) GDP per capita	-20.678	-15.857	-35.787	-22.890	-10.614	-11.933
	(4***)	(2.64***)	(3.18***)	(1.58)	(2.56**)	(2.38**)
Civil liberties, index	2.042	8.666	6.310	21.248	3.210	1.929
	(0.42)	(1.22)	(0.64)	(1.37)	(0.67)	(0.41)
(log) Population	-4.724	1.691	-9.141	-1.761	-1.512	0.581
	(1.42)	(0.34)	(1.67)	(0.23)	(0.46)	(0.18)
constant	282.744	135.020	435.496	184.532	132.308	122.397
	(3.16***)	(1.28)	(2.9***)	(0.98)	(1.96*)	(1.54)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.33	0.11	0.26	0.02	0.28	0.28
Number of observations	89	82	50	47	39	35
F-test (Prob>F)	0.00	0.00	0.00	0.01	0.00	0.00
Normality test (Prob>chi2)	0.00		0.00		0.00	
Heteroscedasticity test (Prob>chi2)	0.00		0.00		0.00	
RESET (Prob>F)	0.01		0.50		0.00	
Sargan test (Prob>F)		0.49		0.26		0.56

* denotes significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Extreme outliers with costs above 400 percent of per capita income excluded: Angola, Cambodia, Zimbabwe.

Table A-6: Costs to Start Business and Sub-national Expenditures, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Sub-national expenditure share	-0.365	-0.667	-0.717	-1.230	-0.078	-0.432
	(2.54**)	(3.09***)	(2.48**)	(3.57***)	(0.61)	(1.43)
(log) GDP per capita	-4.761	-3.817	-8.226	-9.745	-9.475	-7.961
	(2.02**)	(1.32)	(1.56)	(1.49)	(2.65**)	(1.95*)
Civil liberties, index	0.431	0.741	2.578	3.276	-1.605	-1.443
	(0.19)	(0.27)	(0.58)	(0.62)	(0.71)	(0.46)
(log) Population	1.949	2.829	3.187	4.376	-0.160	0.901
	(1.13)	(1.39)	(1.04)	(1.21)	(0.14)	(0.42)
constant	31.933	16.543	33.876	33.569	107.965	86.300
	(1.17)	(0.61)	(0.79)	(0.82)	(2.53**)	(1.7)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.39	0.36	0.40	0.28	0.43	0.42
Number of observations	56	52	22	22	34	30
F-test (Prob>F)	0.00	0.00	0.02	0.02	0.00	0.00
Normality test (Prob>chi2)	0.00		0.00		0.00	
Heteroscedasticity test (Prob>chi2)	0.00		0.07		0.01	
RESET (Prob>F)	0.05		0.74		0.86	
Sargan test (Prob>F)		0.34		0.68		0.15

* denotes significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Extreme outliers with costs above 150 percent of per capita income excluded: Bolivia, Nicaragua, Paraguay, Zimbabwe.

Table A-7: Costs to Start Business and Federal Structure, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Federal structure, dummy	3.726	77.974	-32.621	-1664.593	-7.031	-0.189
	(0.24)	(1.03)	(1.03)	(0.7)	(1.41)	(0.02)
(log) GDP per capita	-35.353	-38.949	-70.353	-149.749	-7.490	-10.564
	(2.91***)	(4.45***)	(3.66***)	(1.07)	(1.67)	(2.07**)
Civil liberties, index	10.838	12.329	25.263	-49.341	6.138	5.666
	(1.14)	(1.23)	(1.27)	(0.43)	(1.55)	(1.4)
(log) Population	-9.082	-18.973	-18.221	145.626	0.559	-1.084
	(1.46)	(1.91*)	(1.76*)	(0.62)	(0.27)	(0.4)
constant	452.855	625.334	761.989	-973.933	65.208	121.126
	(3.7***)	(3.44***)	(4.47***)	(0.39)	(1.03)	(1.55)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.25	0.23	0.24	0.00	0.31	0.34
Number of observations	125	118	81	78	44	40
F-test (Prob>F)	0.00	0.00	0.00	0.50	0.04	0.04
Normality test (Prob>chi2)	0.00		0.00		0.00	
Heteroscedasticity test (Prob>chi2)	0.00		0.00		0.00	
RESET (Prob>F)	0.00		0.11		0.01	
Sargan test (Prob>F)		0.01		0.38		0.92

* denotes significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Table A-8: Costs to Start Business and number of tiers, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Number of tiers	15.690	154.331	19.789	205.442	3.419	-3.756
	(2.72***)	(3.07***)	(2.2**)	(2.59**)	(0.54)	(0.2)
(log) GDP per capita	-22.706	11.210	-44.733	21.054	-7.716	-11.558
	(4.28***)	(0.75)	(4.16***)	(0.56)	(1.63)	(1.88*)
Civil liberties, index	-1.471	-0.247	-8.125	-30.632	6.263	5.190
	(0.31)	(0.02)	(1.05)	(1.41)	(1.45)	(1.59)
(log) Population	-8.550	-41.751	-14.238	-58.382	-0.978	-0.482
	(2.4**)	(2.93***)	(2.44**)	(2.54**)	(0.36)	(0.12)
constant	313.836	62.494	558.976	189.303	78.095	134.879
	(3.76***)	(0.38)	(4.2***)	(0.61)	(1.25)	(1.52)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.40	0.36	0.35	0.00	0.30	0.31
Number of observations	100	95	58	57	42	38
F-test (Prob>F)	0.00	0.00	0.00	0.00	0.03	0.01
Normality test (Prob>chi2)	0.00		0.00		0.00	
Heteroscedasticity test (Prob>chi2)	0.01		0.00		0.00	
RESET (Prob>F)	0.00		0.69		0.02	
Sargan test (Prob>F)		0.82		0.31		0.84

* denotes significant at 10% level; ** significant at 5% level; *** significant at 1% level.

Extreme outliers with costs above 400 percent of per capita income excluded: Angola, Cambodia, Congo (Dem. Rep.), Niger, Zimbabwe.

Table A-9: Judicial Independence and Sub-national Employment, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Sub-national employment share	0.038	0.030	-0.096	-0.264	0.218	0.837
	(0.41)	(0.17)	(1.4)	(1.56)	(1.03)	(1.95*)
(log) GDP per capita	0.731	0.774	0.232	0.393	1.142	0.979
	(2.91***)	(3.03***)	(0.48)	(0.74)	(4.57***)	(4.35***)
Civil liberties, index	-0.442	-0.386	0.086	0.204	-0.585	-0.294
	(1.94*)	(1.7*)	(0.23)	(0.55)	(2.4**)	(1.08)
(log) Population	-0.014	-0.060	0.367	0.562	-0.486	-0.929
	(0.07)	(0.25)	(1.12)	(1.59)	(3.02***)	(3.13***)
constant	1.037	1.351	-4.070	-8.693	5.102	12.593
	(0.3)	(0.32)	(0.68)	(1.17)	(1.52)	(2.59**)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.49	0.50	0.08	0.00	0.61	0.48
Number of observations	72	68	32	32	40	36
F-test (Prob>F)	0.00	0.00	0.69	0.44	0.00	0.00
Normality test (Prob>chi2)	0.53		0.01		0.10	
Heteroscedasticity test (Prob>chi2)	0.15		0.91		0.01	
RESET (Prob>F)	0.00		0.85		0.03	
Sargan test (Prob>F)		0.00		0.00		0.11

* denotes significant at 10% level; ** significant at 5% level; ******* significant at 1% level**.**

Table A-10: Judicial Independence and Sub-national Expenditures, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Sub-national expenditure share	0.023	0.074	0.009	-0.014	0.012	0.077
	(1.17)	(2.44**)	(0.33)	(0.25)	(0.54)	(2.23**)
(log) GDP per capita	0.777	0.557	0.461	0.565	0.722	0.288
	(1.91*)	(1.26)	(0.63)	(0.72)	(1.7*)	(0.58)
Civil liberties, index	-0.736	-0.647	-0.905	-0.907	-0.982	-0.746
	(1.96*)	(1.7*)	(2.43**)	(2.15**)	(2.14**)	(1.38)
(log) Population	0.112	-0.175	0.771	0.911	-0.134	-0.452
	(0.7)	(0.86)	(2.43**)	(2.06*)	(0.94)	(2.1**)
constant	-1.331	3.935	-9.564	-12.255	3.925	11.153
	(0.31)	(0.73)	(1.06)	(1.16)	(0.82)	(1.89*)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.63	0.57	0.44	0.42	0.60	0.40
Number of observations	58	54	19	19	39	35
F-test (Prob>F)	0.00	0.00	0.08	0.12	0.00	0.00
Normality test (Prob>chi2)	0.73		0.44		0.22	
Heteroscedasticity test (Prob>chi2)	0.06		0.99		0.01	
RESET (Prob>F)	0.30		0.22		0.04	
Sargan test (Prob>F)		0.00		0.00		0.04

* denotes significant at 10% level; ** significant at 5% level; ******* significant at 1% level**.**

Table A-11: Judicial Independence and Federal Structure, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Federal structure, dummy	-0.311	4.451	-0.105	23.447	-0.504	-0.409
	(0.58)	(1.61)	(0.13)	(1.2)	(0.83)	(0.28)
(log) GDP per capita	0.621	0.380	0.061	0.818	1.085	1.040
	(2.85***)	(1.18)	(0.17)	(0.82)	(3.31***)	(3.07***)
Civil liberties, index	-0.625	-0.420	-0.389	1.075	-0.702	-0.647
	(2.81***)	(1.47)	(1.16)	(0.79)	(2.39**)	(2.22**)
(log) Population	0.170	-0.414	0.257	-2.531	0.031	0.001
	(1.37)	(1.08)	(0.98)	(1.12)	(0.22)	(0)
constant	-0.562	9.435	0.737	34.173	-2.354	-1.529
	(0.21)	(1.26)	(0.17)	(1.05)	(0.59)	(0.28)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.49	0.03	0.05	0.00	0.53	0.49
Number of observations	95	91	47	47	48	44
F-test (Prob>F)	0.00	0.00	0.74	0.73	0.00	0.00
Normality test (Prob>chi2)	0.33		0.00		0.30	
Heteroscedasticity test (Prob>chi2)	0.07		0.46		0.02	
RESET (Prob>F)	0.00		0.00		0.20	
Sargan test (Prob>F)		0.00		0.85		0.02

* denotes significant at 10% level; ** significant at 5% level; ***** significant at 1% level.**

Table A-12: Judicial Independence and number of tiers, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Number of tiers	0.109	0.012	-0.108	-24.694	-0.375	-4.069
	(0.49)	(0.01)	(0.32)	(0.23)	(1.16)	(1.77*)
(log) GDP per capita	0.654	0.645	-0.099	-13.045	0.976	0.042
	(2.72***)	(1.7*)	(0.24)	(0.23)	(2.98***)	(0.05)
Civil liberties, index	-0.562	-0.532	-0.211	7.117	-0.797	-1.874
	(2.39**)	(2.27**)	(0.55)	(0.22)	(2.68**)	(1.99*)
(log) Population	0.147	0.155	0.300	2.011	0.089	1.240
	(1.07)	(0.51)	(1.17)	(0.23)	(0.53)	(1.7*)
constant	-1.085	-0.836	0.865	134.022	-0.995	3.712
	(0.4)	(0.26)	(0.16)	(0.23)	(0.25)	(0.46)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.47	0.47	0.05	0.00	0.52	0.00
Number of observations	84	80	39	39	45	41
F-test (Prob>F)	0.00	0.00	0.74	0.99	0.00	0.04
Normality test (Prob>chi2)	0.37		0.01		0.23	
Heteroscedasticity test (Prob>chi2)	0.08		0.21		0.03	
RESET (Prob>F)	0.00		0.28		0.45	
Sargan test (Prob>F)		0.00		0.94		0.94

* denotes significant at 10% level; ** significant at 5% level; ***** significant at 1% level.**

Table A-13: Rule of Law and Sub-national Employment, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Sub-national employment share	-0.018	-0.005	-0.019	-0.031	-0.018	0.246
	(1.72*)	(0.23)	(2.37**)	(1.5)	(0.36)	(1.57)
(log) GDP per capita	0.469	0.460	0.214	0.231	0.667	0.578
	(10.58***)	(10.13***)	(3***)	(3.02***)	(7.26***)	(4.52***)
Civil liberties, index	-0.122	-0.141	-0.084	-0.069	-0.196	-0.164
	(2.92***)	(3.24***)	(1.77*)	(1.21)	(3.16***)	(1.96*)
(log) Population	0.025	0.003	0.053	0.055	-0.067	-0.178
	(0.92)	(0.09)	(1.83*)	(1.67*)	(1.61)	(2.4**)
constant	-3.396	-2.902	-2.360	-2.521	-3.523	-1.297
	(5.63***)	(4.56***)	(3.34***)	(3.03***)	(3.23***)	(0.78)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.80	0.81	0.33	0.32	0.76	0.61
Number of observations	109	101	64	60	45	41
F-test (Prob>F)	0.00	0.00	0.00	0.00	0.00	0.00
Normality test (Prob>chi2)	0.27		0.04		0.32	
Heteroscedasticity test (Prob>chi2)	0.74		0.20		0.01	
RESET (Prob>F)	0.00		0.77		0.25	
Sargan test (Prob>F)		0.00		0.03		0.28

* denotes significant at 10% level; ** significant at 5% level; ******* significant at 1% level**.**

Table A-14: Rule of Law and Sub-national Expenditures, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Sub-national expenditure share	0.008	0.014	0.007	0.008	0.000	0.019
	(1.82*)	(2.29**)	(1.16)	(1)	(0.04)	(2.09**)
(log) GDP per capita	0.448	0.440	0.066	0.069	0.587	0.456
	(6***)	(5.82***)	(0.62)	(0.62)	(7.54***)	(4.81***)
Civil liberties, index	-0.218	-0.210	-0.346	-0.347	-0.212	-0.168
	(2.81***)	(2.62**)	(4.88***)	(5***)	(2.58**)	(1.97*)
(log) Population	-0.011	-0.039	0.083	0.080	-0.041	-0.126
	(0.31)	(0.94)	(2.31**)	(2.46**)	(1.11)	(2.12**)
constant	-2.576	-2.201	-1.007	-0.998	-3.210	-1.129
	(2.88***)	(2.41**)	(0.76)	(0.77)	(3.29***)	(0.84)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.86	0.86	0.62	0.62	0.81	0.72
Number of observations	68	64	28	28	40	36
F-test (Prob>F)	0.00	0.00	0.24	0.00	0.00	0.00
Normality test (Prob>chi2)	0.91		0.32		0.01	
Heteroscedasticity test (Prob>chi2)	0.04		0.36		0.01	
RESET (Prob>F)	0.01		0.37		0.10	
Sargan test (Prob>F)		0.01		0.04		0.34

* denotes significant at 10% level; ** significant at 5% level; ******* significant at 1% level**.**

Table A-15: Rule of Law and Federal Structure, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Federal structure, dummy	-0.733	-1.260	0.249	10.005	-1.162	-2.862
	(1.73*)	(0.81)	(0.35)	(1.2)	(2.76***)	(1.71*)
(log) GDP per capita	0.993	1.020	0.729	1.075	1.508	1.783
	(8.88***)	(6.25***)	(2.68***)	(2.44**)	(7.25***)	(7.42***)
Civil liberties, index	-0.180	-0.184	-0.023	0.423	-0.241	-0.188
	(1.55)	(1.63)	(0.11)	(0.99)	(1.75*)	(1.22)
(log) Population	0.157	0.217	0.094	-0.831	0.147	0.346
	(1.49)	(1.15)	(0.44)	(1.11)	(1.15)	(1.51)
constant	-3.187	-4.297	-1.143	9.213	-7.523	-12.975
	(1.46)	(1.09)	(0.31)	(0.93)	(2.3**)	(2.51**)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.54	0.54	0.14	0.00	0.60	0.50
Number of observations	117	113	63	63	54	50
F-test (Prob>F)	0.00	0.00	0.74	0.16	0.00	0.00
Normality test (Prob>chi2)	0.14		0.22		0.46	
Heteroscedasticity test (Prob>chi2)	0.09		0.52		0.35	
RESET (Prob>F)	0.03		0.50		0.46	
Sargan test (Prob>F)		0.04		0.34		0.79

* denotes significant at 10% level; ** significant at 5% level; ******* significant at 1% level**.**

Table A-16: Rule of Law and Number of tiers, cross section

	All		Low Income		High Income	
	(1)	(2)	(3)	(4)	(5)	(6)
Number of tiers	0.042	-0.037	0.067	0.230	-0.066	-0.445
	(0.62)	(0.16)	(1.22)	(0.93)	(0.78)	(1.9*)
(log) GDP per capita	0.445	0.428	0.163	0.207	0.701	0.629
	(11.4***)	(7.19***)	(2.5**)	(2.1**)	(9.07***)	(6.55***)
Civil liberties, index	-0.152	-0.152	-0.197	-0.208	-0.112	-0.127
	(4.1***)	(4.27***)	(4.69***)	(4.9***)	(2.8***)	(2.41**)
(log) Population	0.015	0.031	0.040	-0.002	-0.009	0.068
	(0.48)	(0.51)	(0.99)	(0.03)	(0.25)	(1.22)
constant	-3.128	-2.943	-1.650	-1.864	-4.799	-4.045
	(6.14***)	(4.82***)	(2.34**)	(2.31**)	(5.61***)	(3.27***)
Method	OLS	2SLS	OLS	2SLS	OLS	2SLS
Adjusted R2	0.80	0.80	0.42	0.31	0.74	0.59
Number of observations	125	120	72	71	53	49
F-test (Prob>F)	0.00	0.00	0.00	0.00	0.00	0.00
Normality test (Prob>chi2)	0.80		0.05		0.08	
Heteroscedasticity test (Prob>chi2)	0.66		0.92		0.02	
RESET (Prob>F)	0.00		0.12		0.13	
Sargan test (Prob>F)		0.00		0.10		0.84

* denotes significant at 10% level; ** significant at 5% level; ******* significant at 1% level**.**

Appendix B: Sources and Definitions

Variable	Description	Source
GDP per capita	GDP per capita (constant 2000 US$).	World Bank (2003)
Civil liberties	Index ranging from 1 to 7, where higher values reflect less liberty.	Gastil (2002)
Population	Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship - except for refugees not permanently settled in the country of asylum, who are generally considered part of the population of their	World Bank (2003)
Law and order	Assesses the strength and impartiality of the legal system as well as the popular observance of the law. It ranges from zero to six, where a higher number indicates a better system of law and order.	ICRG
Costs to start business	Measures the costs of the start-up of commercial or industrial firms with up to 50 employees and start-up capital of 10 times the economy's per-capita Gross National Income. All procedures required to register a firm are counted, including screening procedures by overseeing government entities, tax- and labour-related registration procedures, health and safety procedures, and environment-related procedures. The costs of these procedures are calculated as percentage of income per capita.	World Bank (2004b)
Judicial independence	Measures whether the judiciary is independent and not subject to interference by the government or parties in disputes. The index ranges between one and ten, with higher values representing greater independence.	Gwartney and Lawson (2004)
Rule of law	Based on several hundred individual variables measuring perceptions of governance.	Kaufman et al. (2003)
Sub-national employment	Number of sub-national employees relative to the number of central government employees.	World Bank (2001)
Sub-national expenditures	Sub-national Expenditures (% of total expenditures).	GFS, IMF
Sub-national revenues	Sub-national Revenues (% of total revenues).	GFS, IMF
Federal Structure	Dummy for countries with a constitutionally defined autonomy for subnational governments.	Elazar (1995)
Number of tiers	The number of sub-national government tiers, where a level of territorial subdivision of a state constitutes a tier of national government if the subdivisions have an executive with government authority, this sub-national executive has responsibility for general administration, and the superior tier is subdivided territorially into units of this type.	Treisman (2000b)

Appendix B: Sources and Definitions (continued)

Variable	Description	Source
Aid	Actual international transfer of financial resources or of goods or services valued at the cost to the donor, less any repayments of loan principal during the same period. Grants by official agencies of the members of the Development Assistance Committee are included, as are loans with a grant element of at least 25 percent, and technical cooperation and	World Bank (2003)
Democracy	0-10 (0 = low; 10 = high) democracy score. Measures the general openness of political institutions.	Marshall and Jaggers (2000)
Openness to Trade	Trade is the sum of exports and imports of goods and services measured as a share of gross domestic product. Data are in percent of GDP.	
Ethnolinguistic Fractionalization	$\text{Fractionalization}_j = 1 - \sum_{i}^{n} s_{ij}^2$ with s_{ij} being the share of group i in country j.	Alesina et al. (2003)
Latitude	Absolute value of latitude.	Easterly and Sewadeh (2001)
Share of Protestants in population	Share of Protestants in population (in percent).	Persson and Tabellini (2003)
Legal origin	Dummies representing French, Socialist, and Scandinavian legal origin (and German origin being the base category).	La Porta et al. (1999)
Religious Fractionalization	$\text{Fractionalization}_j = 1 - \sum_{i}^{n} s_{ij}^2$ with s_{ij} being the share of group i in country j.	Alesina et al. (2003)

Appendix C: Descriptive Statistics

Variable	Mean	Minimum	Maximum	Standard Deviation
GDP per capita (log)	7.49	4.57	10.53	1.53
Civil liberties	3.92	1.00	7.00	1.90
Population (log)	15.22	10.46	20.86	2.05
Law and order	3.55	0.69	6.00	1.48
Costs to start business	79.90	0.00	861.30	134.67
Judicial independence	5.29	0.35	9.43	2.34
Rule of law	0.01	-1.82	6.00	0.97
Sub-national employment	1.85	0.00	29.69	3.93
Sub-national expenditures	21.65	1.70	76.50	15.65
Sub-national revenues	17.05	0.86	75.18	14.70
Federal Structure	0.11	0.00	1.00	0.31
Number of tiers	3.69	1.00	6.00	0.94
Aid	5.75	-0.18	99.45	10.14
Democracy	4.28	0.00	10.00	4.05
Openness to Trade	79.32	3.11	361.18	46.11
Ethnolinguistic	0.44	0.00	0.93	0.26
Latitude (absolute)	24.86	0.23	64.23	16.35
Share of Protestants in population	17.63	0.00	97.80	25.52
Religious Fractionalization	0.44	0.00	0.86	0.23