Decentralization and Political Institutions*

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Abstract:

Does fiscal decentralization lead to more efficient governance, better public goods, and higher economic growth? This paper tests hypotheses posed by theoretical literature that the results of decentralization depend on features of political institutions. Using data from up to 95 countries for 25 years, we show that the effect of decentralization on economic growth, quality of government, and public goods provision strongly depends on two aspects of political centralization: 1) strength of national party system (measured by the age of the main parties and fractionalization of the government parties) and 2) subordination (whether local and state executives are appointed or elected). We find solid support for Riker's theory (1964) in developing countries: Strong parties significantly improve the results of fiscal decentralization in terms of economic growth, quality of government, and public goods provision. There is also some evidence that subordination of local to higher-level governments improves the effect of decentralization on growth and public goods provision (in developed and developing countries) and government quality (in developing countries).

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1. Introduction

Modern economic literature has little doubt that economic decentralization affects the quality of government, economic growth, and efficiency of public goods provision. The effect of decentralization depends on political and economic incentives of local public officials. Economic incentives that help to align politicians' private interests with public goals are provided by such mechanisms as interjurisdictional competition (Tiebout, 1956; Qian and Roland, 1998; Maskin, Qian, and Xu, 1999) and fiscal autonomy (Jin et al., 1999; Qian and Weingast, 1997; and Zhuravskaya, 2000). Political incentives, i.e., local governments' accountability, are provided by political institutions which ensure that careers of local politicians depend on whether they pursue efficient policies. In the absence of accountability, strong economic incentives at the local level may result in corruption, provincial protectionism, and capture by vested interests (Tanzi, 1996; Sonin, 2003).

Even though it is a well established fact that accountability of local public officials is necessary to prevent inefficient local policies in a decentralized economy, there is little agreement in the literature about what institutions can effectively ensure accountability.[1] On the one hand, democratic elections with free access to information and developed civil society may provide local governments with sufficient political incentives to guarantee efficient decentralization. This argument is based on the view that local governments are more accountable compared to the central governments (Seabright, 1996; Persson and Tabellini, 2000). On the other hand, democratic mechanisms fail in many developing and transition countries, leading to corruption and

[1] See Bardhan (2002) for an excellent survey of the literature.

capture of the local governments. In addition, local governments accountable only to local constituencies in decentralized states have incentives to pursue policies that have negative externalities on other jurisdictions of the country, i.e. issuing money surrogates, erecting trade barriers, etc (Tanzi, 1996; Besley and Coate, 2000). In these cases, strong administrative control of local by central authorities may help efficient economic decentralization (Blanchard and Shleifer, 2000). This reasoning requires lower probability of capture at the national compared to the local level.[2] Riker (1964) pointed out that the structure of party system is also extremely important for the effectiveness of local governments. He argued that strong national party systems mitigate externalities from local policies and are more affective in disciplining local politicians than administrative or constitutional arrangements. Thus, decentralization may have the opposite results in countries with different sources of local governments' accountability.

This paper sheds light on this debate by evaluating the effects of fiscal decentralization on the quality of government, public goods provision, and economic growth, taking into account the structure of political institutions. In particular, we analyze how the level of political centralization changes the results of fiscal decentralization. Previous empirical literature on the effects of decentralization produced mixed results that vary with countries and time periods.[3] This can be partly explained by the fact that it overlooked the importance of political institutions.

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[2] Bardhan and Mookherjee (1999) studied determinants of capture in different levels of government.

[3] Fisman and Gatti (2002) and de Mello and Barenstein (2001) found negative effect of decentralization on corruption; Treisman (2000) reported no relationship. Zhang and Zou (1998) reported negative effect of decentralization on provincial growth in China. Jin et al. (1999) showed that this relationship is positive once one filters out cyclical effects. Lin and Liu (2000) confirmed this result. Akai and Sakata (2002) reported positive effect of decentralization on growth of US states in early 1990s. Xie et al. (1999) showed no long-term relationship between these variables in the US for 50 years. Woller and Phillips (1998) found no link between decentralization and growth in developing countries. In contrast, Davoodi and Zou (1998)

Using data from up to 95 countries for the last 25 years, we show that the effect of decentralization on economic growth, quality of government, and public goods provision strongly depends on the following two aspects of political centralization: 1) strength of the party system (measured by the age of the main parties and fractionalization of the government parties) and 2) administrative subordination (whether local and province-level politicians are appointed or elected). We find solid support for Riker's theory in developing and transition countries: strong party systems substantially improve the results of fiscal decentralization. In developed countries, the two measures of party strength have different effects. As in developing countries, fractionalization of governing parties impairs the results of decentralization for public goods provision. In contrast, decreased age of main parties increases efficiency of decentralization. This effect can be attributed to an increase in political competition at the national level.[4] In addition, we find some evidence that subordination of local authorities to higher-level governments improves the effect of decentralization on growth, public goods provision (both in developing and developed countries), and government quality (in developing countries). Most of the results come from cross-section of countries. Therefore, we cannot rule out the possibility that unobserved cross-country heterogeneity accounts for the results.

The remainder of the paper is organized as follows. Section 2 presents hypotheses. Section 3 describes the data. Section 4 describes the methodology. In

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reported negative, marginally significant, relationship in developing countries and no effect in developed countries. Robalino et al. (2001) found negative cross-country relationship between decentralization and infant mortality. Zhuravskaya (2000) reported positive effect of marginal decentralization on healthcare and education outcomes in Russian municipalities.

[4] The government fractionalization as a measure of party strength is of lower quality, however; the results based on this measure are subject to an alternative explanation.

section 5, we present the results and discuss their robustness. In section 6, we summarize and interpret our empirical findings. Conclusions follow in section 7.

2. Hypotheses and the measures of political institutions

The theoretical argument first made by Riker (1964) that party systems - the strength of national parties and the relationship between the national and subnational parties – are important determinants of political incentives of the local governments, is behind our first hypothesis. In the case of strong political parties, the career of politicians in the local government depends on their party's political and financial support to get reelected, as well as on the possibility of promotion to the national government. National governing parties, in turn, are interested in supporting local politicians whose policies do not impose significant negative externalities on other jurisdictions in the country, and, thus, on overall national performance. Thus, strong parties provide political incentives for local politicians to conduct efficient policies and help to internalize externalities of local policies.[5] It is important to note that strong national party systems provide political incentives for local governments irrespective of whether local politicians are appointed or elected. Even when local politicians do not need support during elections, career concerns play an important role (Maskin, Qian, and Xu, 1999).

The best available measures of the strength of party systems are the average age of main parties (the average age of the two main governmental parties and the main opposition party) and fractionalization of governing parties (the probability that two members of parliament picked at random from governing parties belong to different

[5] This effect, however, may be attenuated by a weak link between national and regional parties when national parties do not have much influence over regional politicians. Uslaner (2000) argues that Canada provides an example of weak link between national and regional parties. Unfortunately, the data available do not allow us to take into account the relationship between national and regional parties.

parties). An assumption behind the first measure is that older parties are stronger than younger ones. Higher age of main parties indicates more stable party system important for career concerns. An assumption behind the second measure is that high fractionalization of government parties is an indicator of many small relatively weak parties, while low fractionalization indicates that government consists of a small number of strong parties.[6]

Both of these measures are highly imperfect. Since the age of main parties may reflect the age of democracy (that can affect decentralization outcomes) rather than the party strength, we control for the age of democracy to rule this explanation out (see sensitivity section 5.1 below).

Fractionalization of government parties as a measure of party strength has more serious drawbacks, however. First and the most serious, the differences in fractionalization of parties across countries depend on differences in the degree of geographical segregation of voters with different political preferences (for instance, ethnic groups). Efficiency of fiscal decentralization may also be affected by country's geographical voter segregation because in countries with high regional segregation decentralization is party driven by central government's inefficient policies to appease possible secessionist tendencies. So far we have no data on within country regional homogeneity; thus, we cannot rule out this alternative explanation of results based on government fractionalization. Second, literature on comparative politics stresses the systematic differences between party structures – fractionalization, in particular – in

[6] We take fractionalization of governing parties rather than fractionalization of parliament as one of the two main proxies for the party strength because it is more closely related to career concerns. Fractionalization in small opposition parties and the number of independent members of parliament has little effect on local politicians' career concerns determined by political weights of their parties. Nonetheless, the results are robust to using fractionalization of parliament as an alternative measure (see sensitivity section 5.1).

presidential and parliamentary systems and majoritarian and proportional electoral rules (see Duverger, 1972, Shugart and Carey, 1992, and Myerson, 1999); these differences likely but not necessarily reflect party strength (Duverger, 1972). Moreover, electoral rules and government systems may directly affect corruption (Myerson, 1999; Persson, Tabellini, and Trebbi, 2001) and public goods provision (Persson and Tabellini, 1999; Persson, Roland, and Tabellini, 2000). Thus, in order to use fractionalization of governing parties as a measure of party strength in our analysis, we need to make sure that our results are not driven by the electoral rules or government systems. Empirical strategies used to do this are described in the sensitivity section 5.1 below.

To the best of our knowledge there is little comparative quantitative analysis of the strength of party systems, thus, it is hard to check whether the average age of main parties and the fractionalization of government parties serve as good measures of party-system strength across countries. Literature, however, provides some estimates of over-time changes in the strength of parties in several countries. For these countries, we are able to check whether the reported changes in the strength of party systems are reflected in behavior of our measures. For example, Mexico and Peru in 1990's experienced a substantial decline in party strength. A large number of independent candidates and candidates from recently formed new parties were elected as mayors, governors, and legislators (Camp, 1998; Carrion, 1998). Our data shows a significant decrease in the average age of the main parties and a significant increase in the fractionalization of government parties in both countries at that time. Thus, in these cases our measures adequately capture the change in party strength. As is usual for cross-country

comparisons, there are few countries for which the two measures perform very poorly as proxies of the party strength.[7]

Use of the two measures of party strength allows us to formulate testable prediction of Riker's theory: Young age of main parties and high fractionalization of government parties reduce efficiency of decentralization affecting economic growth, quality of government, and public goods provision.

An excessively strong party system can, however, be an indication of low political competition. In this case few parties (in the extreme case, only one party) dominate elections and constituencies have lower influence on the election outcome. Thus, when political competition is low, national parties become less concerned about negative externalities of local policies of party members. As a result, efficiency of fiscal decentralization is reduced in a system with excessively strong parties. Diaz-Cayeros et al. (2003) argue that Mexico between 1930s and early 1990s provides an example of inefficiently small political competition. High age of the parties may also indicate that the parties have extremely loyal electorate with some social groups voting for their party regardless of actual policies it implements, which also reduces accountability.[8] These considerations point to the alternative hypothesis that the age of main parties and low government fractionalization may undemine the efficiency of decentralization.

A basic premise of the representative democracy paradigm is that public officials should be elected. There are different views in the literature, however, on whether

[7] Columbia, for example, has relatively low level of fractionalization and the highest average age of parties in the world. Under our assumptions this indicates a very strong party system. In reality, Columbia has one of the weakest party systems, since parties do not have control over their own party label which allows existence of different lists with the same party label. This is, however, a unique phenomenon to Colombia and neighboring Ecuador (Roland, 2000).

[8] Shachar (2003) studies the party loyalty of electorate.

elections of local officials help the outcomes of decentralization. Seabright (1996) shows that under certain assumptions elected officials at the local level are more accountable compared to the central level. His conjecture motivates a testable proposition that the effect of decentralization on economic growth, quality of government, and public goods provision is better in the case of elected provincial and municipal executives compared to the case when they are appointed.

Blanchard and Shleifer (2000) built a model to illustrate that in transition economies the results of economic decentralization may conversely depend on the presence of local elections. To show this they assumed that the central government has higher incentives to promote economic growth than local governments, as the latter are more likely to be captured.[9] In addition, direct administrative subordination internalizes externalities from local policies. This logic implies that the outcomes of decentralization would be better in the case of appointed provincial and municipal executives compared to the case when they are elected. We test Seabright's and Blanchard and Shleifer's theories against each other using dummy variables that tell whether municipal and state/provincial executives are elected or appointed as measures of the administrative side of political centralization.

3. Data

We use data on political institutions, fiscal decentralization, government performance, economic growth, outcomes of public goods provision, and various control

[9] This is certainly a strong assumption (see discussion in Bardhan, 2002). Nonetheless, one can argue that competition for influence on authorities under certain distributions of wealth between and within federal jurisdictions may be much tougher at the central level than at the local level. This means that competition on the national market for capture can substantially reduce captor's rents leading to breakdown of capture market at the national level, while monopolistic rents of local captors remain intact.

variables for up to 95 countries for the years 1975-2000.[10] Not all the variables are available for all countries and all years: some regressions cover as few as 50 countries. The definitions and the sources of all variables are given in Table A2 in appendix. Summary statistics and correlations between the variables are also presented in appendix (Tables A3 and A4).

As measures of fiscal decentralization we use the share of subnational revenues and expenditures in total government revenues and expenditures. The data come from the IMF's *Government Finance Statistics*. These measures are the most commonly used in the empirical literature on the effects of fiscal decentralization. Although they are highly imperfect and do not reflect information on the distribution of decision-making authority between the levels of government, they provide a useful proxy for the relative level of countries' fiscal decentralization.[11] The share of subnational expenditures is a better measure of fiscal decentralization "on average," while the subnational revenue share is a better measure of "marginal" fiscal decentralization because in many countries marginal retention rates do not change and are equal to the average share of revenues.[12]

All measures of political centralization (described in the previous section) were taken from the *Database on Political Institutions* (Beck et al., 2001). To check the robustness of results we use the fractionalization of parliament (the probability that any two members of parliament picked at random belong to different parties) as an alternative measure of party strength.

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[10] The list of countries that constitute our sample is given in Table A1 in appendix.

[11] An important shortcoming of these data is that they do not distinguish between state and municipal expenditures and revenues; the breakdown of subnational revenues onto state and municipal is available only for a very limited number of countries.

[12] "Marginal" fiscal decentralization is based on the fraction of additional revenues collected in a local jurisdiction that goes to the local budget, while "average" fiscal decentralization is based on the overall fraction of revenues that goes to the local budget.

As measures of the quality of government we use an index of corruption by Transparency International and the World Bank indices of control over corruption, quality of governance, regulatory quality, and rule of law. To measure the quality of public goods provision we use data on the DPT immunization, infant mortality, illiteracy rate, and pupil-to-teacher ratio level from *World Development Indicators* by the World Bank.[13] To measure economic growth we take changes in GDP per capita PPP.

4. Methodology

We use standard growth-regressions methodology (Barro and Sala-i-Martin, 1995; Barro, 1997; Sala-i-Martin, 1997) and the methodology for regressions of the quality of government (La Porta et al., 1999 and Treisman, 2000) and add explanatory variables that describe the level of fiscal decentralization, political institutions and - in our focus - their interaction term.

Influence of political institutions on the results of fiscal decentralization, as well as the quality of our data, may differ for developing and transition countries, on the one hand, and developed countries, on the other hand. Therefore, we split the sample in the two subsamples of the developed countries (the members of the Development Assistance Committee of OECD and Iceland) and the developing and transition countries (all other countries). We do the regression analysis separately for the two subsamples.[14]

[13] We considered and rejected enrollment in schools as another possible measure of the quality of education because of its nonlinear relation to the level of education in the country: for countries with high quality of education, it takes values around 100%, while for countries with lower level of education it takes values significantly lower or higher than 100%. School enrollment takes values above 100% when adults go to school.

[14] Pooling of the two subsamples together and allowing only the coefficients of interest to differ between the subsamples is rejected by econometric tests.

To analyze the influence of political institutions on the effect of fiscal decentralization on indices of corruption and governance quality we use the following cross-section regression model:

$$Y_i = ?_1 + ?_2 Polit_i + ?_3 Decentr_i + ?_4 Polit_i * Decentr_i + ?_5 Control_i + ?_i \quad (1)$$

where Y_i is an index of corruption and governance quality for country i in year 2001.[15] $Polit_i$ denotes the variable that describes political institutions in country i (average for the period 1995-2000). $Decentr_i$ denotes the variable measuring fiscal decentralization in country i (average for the period 1995-2000). $Control_i$ is the set of control variables that includes logarithm of GDP per capita PPP in 1995, logarithm of population in 1995, share of Protestants, ethnolinguistic fractionalization, latitude, legal origin, democratic traditions by the year 1995, and current level of democracy (average for the period 1995-2000). In these regressions we weight observations by the inverse of the standard errors of indices of corruption and governance quality, which are provided along with the indices.

To analyze the influence of political institutions on the effect of fiscal decentralization on economic growth and measures of outcomes of public goods provision we take two alternative approaches: we study cross-country differences in economic growth and public goods with cross-section regressions and short-run changes in public goods within countries with panel-data regressions.[16] First, we use the same regression model (1) in which Y_i stands for the logarithm of change in GDP per capita

[15] Quality of government data are available for one year only with the exception of TI corruption index that exists for several years. We use TI corruption index for the year 2001 in our benchmark regressions and the index for the year 2000 to check the robustness of our results.

[16] We were unable to use panel regressions for the analysis of economic growth due to the insufficient number of observations in five-year averaged regressions.

PPP between 2000 and 1975 or average measure of public goods for years 1975-2000 in country *i*, $Polit_i$ denotes the variable that describes political institutions in country *i* (average for the period 1975-2000), $Decentr_i$ denotes the variable measuring fiscal decentralization in country *i* (average for the period 1975-2000), and $Control_i$ is the set of control variables. Regressions with measures of public goods as dependent variables include the same control variables as in the regressions for indices of governance quality where averages were taken for the period 1975-2000. In the regression for economic growth we add the level of fixed investments, openness of the economy (measured as the share of exports and imports in GDP filtered for size of country and population), and logarithm of fertility as control variables. All of these control variables were measured in the year 1975 or the year closest to it.[17] In this set of cross-country regressions the weighting was done by the square root of the number of non-missing observations in the interaction term.

For the subsample of the developing and transition countries in addition to OLS specification (1), we estimate 2SLS specification that uses the geographical area of countries as an instrument for fiscal decentralization. We were not able to use the same instrument for the subsample of developed countries because of insufficiently strong correlation between the instrument and fiscal decentralization (see discussion in the section 5.2).

The subsample of developing countries is rather small. To allow for a sufficient number of degrees of freedom, as a baseline we report results from cross-section

[17] We did not include measures of human development (public goods provision outcomes) or corruption as control variables in these regressions because, otherwise, we would have blocked possible channels of influence of fiscal decentralization on economic growth.

regressions for developed countries that exclude several most insignificant control variables. As discussed in section 5.1, the results are robust to the choice of control variables.

Since the influence of political institutions on the effect of fiscal decentralization may differ depending on whether we compare countries or different periods of time in one country, we also used panel regressions with fixed effects to control for country-specific influence:

$$Y_{it} = a_i + b_1 Polit_{it} + b_2 Decentr_{it} + b_3 Polit_{it} Decentr_{it} + b_4 Control_{it} + r_t d_t + e_{it} \qquad (2)$$

where Y_{it} is a measure of an outcome of public goods provision in country i and year t (the only set of dependent variables for which we have time-series observations). $Polit_{it}$ and $Decentr_{it}$ denote variables that describe political institutions and fiscal decentralization respectively in country i and year t, d_t is a year dummy, a_i is a country-specific fixed effect. $Control_{it}$ is the set of control variables that includes PPP GDP per capita for the previous year, logarithm of fertility, democratic traditions and current level of democracy. To eliminate possible endogeneity we instrument democratic traditions; current level of democracy; and variables for political institutions, fiscal decentralization, and their interaction term with their lagged values.

In all regressions for developing and transition countries we exclude observations for socialist countries before the beginning of transition because economic processes and institutions in these countries (in particular, central planning systems) seem to have a different nature.

5. Results

Age of main parties

Table 1 presents results for the subsample of developing and transition countries. Age of main parties improves the effect of decentralization on all indices of government quality except for Transparency International index of corruption.[18] A 10% increase in decentralization at a level of party age lower than the mean by one half of its standard deviation leads to a decrease in government quality indices of approximately one half of their standard deviations, while at a level of age of parties higher than the mean by the same amount the effect of decentralization is close to zero. At the mean age of parties, a 10% increase in decentralization leads to a decrease in indices by quarter of their standard deviations. A threshold level of party age above which decentralization has a positive effect on indices of government quality is such that about 80% of the developing countries have parties younger than this level. Party age also improves the effect of decentralization on immunization, infant mortality, and economic growth in the cross-section regressions.[19] A 10% increase in decentralization at the age of main parties lower than the mean by one half of its standard deviation leads to a decrease in immunization of 11 percentage points, an increase in infant mortality of 0.6 percentage points, and a decrease in 25 years' economic growth of more than 30%. The same size increase in decentralization at age of main parties higher than the mean by one half of its standard deviation leads to a decrease in immunization of five percentage points, a decrease in infant mortality of 0.2 percentage points, and a decrease in economic growth of 2%.

[18] Here and henceforth, the results for revenue and expenditures decentralization are similar unless stated otherwise. Results for the share of subnational expenditures are significant only for government effectiveness index.

[19] Results for the share of subnational expenditures are significant only for economic growth.

From 70% to 90% of the developing countries have party age above a threshold that makes decentralization beneficial for public goods provision and economic growth.[20]

Results of the panel regressions indicate that in developing countries the age of parties also improves the short run effect of decentralization on immunization and pupil-to-teacher ratio.

Table 2 presents results for developed countries. The age of main parties has the opposite effect to the one in developing countries.[21] Older parties significantly hamper the effect of decentralization on all government quality indices (except for the regulatory quality which is insignificant). At a level of age of parties lower than the mean by one half of its standard deviation, a 10% increase in decentralization leads to an increase in the government quality indices of almost one half of their standard deviations. In contrast, at age of parties higher than the mean by one half of its standard deviation, a 10% increase in decentralization leads to a less than 20% of SDs increase in the indices on average.[22] To this date 90% of the developed countries have party age sufficiently young for revenue decentralization not to have a negative effect on the quality of government.

In addition, cross-country regressions for developed countries show that party age hampers the effect of decentralization on infant mortality and economic growth. A 10% increase in decentralization at age of parties lower than the mean by one half of its

[20] At the mean age of parties, a 10% increase in decentralization decreases immunization by eight percentage points, increases infant mortality by 0.2 percentage points, and decreases long-term growth by 17%. Additional ten years of age of the main parties at the mean level of decentralization lead to an increase in economic growth of 3% and immunization of one percentage point and a decrease in infant mortality of 0.2 percentage points.

[21] We suggest an explanation for the difference in the effects of government fractionalization in developed and developing countries in the section 6 below.

[22] At the mean level of party age, a 10% increase in decentralization leads to a 30% of SDs increase in the indices.

standard deviation decreases infant mortality by 0.1 percentage points and increases economic growth by 4%. At age of parties higher than the mean by the same amount, it decreases infant mortality by 0.05 of a percentage point and increases economic growth by less than 1%. A threshold level of party age above which decentralization has a negative effect on public goods and growth is such that more than 80% of the developed countries fall below the threshold. The only significant result in panel regressions for developed countries is that party age hampers the effect of revenue decentralization on immunization level.

Fractionalization of government parties

Table 3 presents the cross-section results for developing and transition countries. In this subsample, fractionalization of government parties significantly hampers the effect of decentralization on all indices of government quality (except for Transparency International index of corruption which is insignificant). A 10% increase in decentralization, at a level of fractionalization lower than the mean by one half of its standard deviation, leads to an increase in government effectiveness of one third of its standard deviation and almost no change in other indices of government quality. In contrast, at a level of fractionalization higher than the mean by one half of its standard deviation, a 10% increase in decentralization leads to no change in government effectiveness and a decrease in other indices of approximately one third of their standard deviations. At the mean level of fractionalization, a 10% increase in decentralization increases the index of government effectiveness and decreases other indices of government quality by approximately 15% of their standard deviations. Almost sixty

percent of the developing countries in our sample have higher fractionalization than needed for decentralization to have a positive effect on the quality of government.

Fractionalization also hampers the effect of decentralization on provision of all public goods considered and economic growth. A 10% increase in decentralization at a level of fractionalization lower than the mean by one half of its standard deviation leads to a 40% increase in 25 years' economic growth, an increase in the level of immunization of one percentage point, a decrease in infant mortality of 0.6 percentage points, no change in illiteracy level, and a 10% decrease in pupil to teacher ratio. In contrast, at a level of fractionalization higher than the mean by one half of its standard deviation, it leads to a 20% increase in economic growth, a decrease in the level of immunization of three percentage points, a decrease in infant mortality of 0.1 percentage points, a decrease in illiteracy of two percentage points, and a 5% decrease in pupil to teacher ratio.[23] Almost half of the developing countries have fractionalization above a threshold which makes the effect of decentralization on immunization, infant mortality, and illiteracy negative, while for the pupil to teacher ratio and economic growth this share is only 10%. Panel regressions for developing countries do not contain any significant results.[24]

Results for developed countries are presented in Table 4. Unlike the results based on age of main parties as a measure of party strength, the results based on government

[23] At the mean level of fractionalization, an increase in decentralization by 10% decreases immunization and increases illiteracy by two and one percentage points, respectively, but also decreases infant mortality by 0.3 percentage points and pupil to teacher ratio by 9%, while economic growth increases by 30%.

[24] To check whether the strength of the party system provides political incentives even in case of appointed executives, we ran the same regressions for the subsample of developing and transition countries with appointed state executives (other possible subsamples did not contain sufficient number of observations). Cross-section results in regressions without instruments for government effectiveness, control over corruption, rule of law, immunization, and infant mortality remain significant. All other results become insignificant, while preserving the sign. In the regressions with instruments all the results become insignificant. But since the bias in uninstrumented regressions attenuates coefficients towards zero (see section 5.2), the loss of significance can be attributed to insufficient number of observations.

fractionalization are consistent for the subsamples of developing and developed countries.[25] The only significant result in cross-country regressions for developed countries is that fractionalization hampers the effect of decentralization on immunization. A 10% increase in decentralization at a level of fractionalization lower than the mean by one half of its standard deviation leads to a decrease in immunization of one percentage point, while at a level of fractionalization higher than the mean by the same amount it leads to a decrease in immunization of four percentage points. At the mean level of fractionalization, a 10% increase in decentralization leads to a decrease in immunization of three percentage points. A threshold level of government fractionalization above which the effect of decentralization on immunization becomes negative is such that 90% of the developed countries have fractionalization above the threshold.

The results of the panel regressions for developed countries indicate that increasing fractionalization hampers the short run effect of decentralization on infant mortality and pupil to teacher ratio.

State executives appointed/elected

Table 5a and 5b present the results of the effect of elections of state executives in developing and transition countries. The effect of decentralization on the indices of government effectiveness, regulatory quality, and rule of law is negative and insignificant in the case of elected state executives and positive insignificant in the case of appointed executives with a significant difference between them. About 40% of the developing

[25] The differences in results based on the two alternative measures are discussed in section 6 below.

countries have decentralization below a threshold which makes the quality of government higher in the case of elected state executives.[26]

Cross-country regressions show that the effect of decentralization on infant mortality, illiteracy, and economic growth is negative and insignificant in the case of elected state executives and positive insignificant in the case of appointed executives with a significant difference between them. More than one half of the developing countries have decentralization below a threshold which makes the public goods provision and economic growth higher in the case of elected state executives.[27] In contrast to cross-country regression results, panel regressions for developing countries show that decentralization has significantly negative effect on public goods provision in the case of appointed state executives, while in the case of elected executives estimated coefficients are insignificant and small in magnitude with a statistically significant difference in slopes. Most of the results of panel regressions for subordination in developing countries, however, turn out to be unrobust. We discuss this in the sections 5.1 and 6 below.

Table 6 presents results for developed countries. Elections of state executives do not significantly affect decentralization outcomes in quality of government. The effect of decentralization on economic growth and alleviation of infant mortality, in the case of appointed state executives, is significantly positive and, in the case of elected executives,

[26] A 10% increase in decentralization in the case of elected state executives decreases these indices by approximately one half of their standard deviations. A comparison of the quality of government for elected and appointed state executives at the mean value of decentralization shows that in the case of elected executives the indices are lower by more than one half of their standard deviations.

[27] A 10% increase in revenue decentralization in the case of elected state executives decreases infant mortality by one percentage point and economic growth by 75%. The effect for expenditure decentralization is twice as low. At the mean level of expenditure decentralization in the case of elected state executives infant mortality is higher by 0.6 percentage points and economic growth is higher by 15%. At the mean level of revenue decentralization in the case of elected state executives infant mortality is higher by 0.1 percentage points and economic growth is lower by 6%.

- insignificant and close to zero, with a statistically significant difference in slopes.[28] A threshold level below which infant mortality is better in the case of elected state executives is such that about one half of the developed countries are below the threshold. For growth this proportion is more than 80%. Panel regression results for developed countries are mixed: presence of elections undermines the positive effect of decentralization on immunization and infant mortality but strengthens it for pupil to teacher ratio.[29]

Municipal executives appointed/elected

Cross-section results for the subsample of developing and transition countries are presented in Table 7. The only two significant results are that local elections worsen the effect of decentralization on economic growth and immunization. The effect is positive and insignificant for appointed municipal executives and negative and insignificant for the elected local executives with a significant difference in slopes.[30] A threshold level above which immunization and growth is higher in countries with elected (compared to appointed) municipal executives is such that more than one half of the developing countries fall below the threshold.

[28] In the case of appointed state executives, a 10% increase in subnational revenue share leads to a decrease in infant mortality of 0.2 percentage points and 10% increase in growth. Overall, countries with elected state executives have better outcomes due to sufficiently low mean decentralization: infant mortality is 0.7 percentage points lower and growth rate is 13% higher at the mean level of decentralization.

[29] The effect of decentralization on immunization level and infant mortality is positive (significant for infant mortality and insignificant for immunization) in the case of appointed state executives and negative and significant in the case of elected executives. The effect of decentralization on the pupil-to-teacher ratio is negative and significant in the case of appointed state executives and positive and insignificant in the case when they are elected.

[30] With elected municipal executives, a 10% increase in decentralization leads to a 14% drop in immunization level and a 40% fall in growth (for expenditure decentralization the fall in economic growth is 8%). At the mean level of decentralization, immunization level is 8% lower and economic growth is 15% higher in the cash of elected municipal executives.

In the panel regressions subordination of municipal officials makes a difference only for the effect of decentralization on the pupil-to-teacher ratio: decentralization has no effect in the case of elected executives and strong significant negative effect in the case of appointed municipal executives.[31]

The results for developed countries are presented in Table 8. The only statistically significant result about government quality is for the government effectiveness index. In the case of elected municipal executives, the effect of decentralization on the government effectiveness index is positive, very close to zero, and insignificant. In the case of appointed executives, it is negative, much larger in absolute value and also insignificant. The difference between slopes of these effects is statistically significant. Government effectiveness is better in countries with elected municipal executives when revenue decentralization is above 26%, leaving more than one half of the developed countries below the threshold level.[32] The cross-section results about public goods provision are the opposite: local elections worsen the decentralization outcomes. The effect of decentralization on immunization, infant mortality, and pupil to teacher ratio in cross-section of developed countries is positive for appointed and elected executives, but the difference in slopes is significant. The threshold level of decentralization above which the outcomes for infant mortality and pupil to teacher ratio are worse in the case of elected municipal executives compared to the case when they are appointed is such that more than one half of the developed countries fall below the threshold. For immunization almost all the developed countries are above the threshold.

[31] Insufficient time variation in whether municipal executives are elected or appointed makes comparisons of the overall effect of this variable on public goods provision in panel regressions meaningless.

[32] The overall effect of municipal elections on the government effectiveness (at the mean of decentralization) is negative: the index is more than one half of its standard deviation lower in the case of elected municipal executives.

Panel regressions for developed countries produce mixed evidence. The effect of expenditure decentralization on the immunization and infant mortality is significantly positive in the case of appointed municipal executives and significantly negative in the case of elected executives. The effect on pupil to teacher ratio is significantly negative in the case of appointed municipal executives and very small (insignificant) in the case of elected municipal executives.

Figures 1 to 8 illustrate some of our empirical results. Figures present plots of the residual values from regressions of the dependent variables on control variables either as a function of the interaction term of decentralization and party strength or as a function of decentralization separately for elected and appointed executives.

The next two sections (5.1 and 5.2) discuss robustness of our results with regard to influential observations, choice of specifications, measurement error, sample selection, and endogeneity. Readers not interested in methodological technicalities can directly skip to section 6 that discusses and summarizes the results.

5.1. Sensitivity analysis

To check sensitivity of the results to presence of influential observations in cross-country regressions, we estimated the same model using robust regressions and excluding China - the most influential observation in cross-section regressions. The results of the robust regressions in most cases are the same as of the baseline regressions. Several results become insignificant while preserving the sign of the coefficients. Few results - insignificant in the baseline setting - become significant. All of these results are in line with the pattern found in the baseline estimation. The effect of excluding China is

similar. Some of the results lose significance, while preserving sign; remaining significant results are consistent with the pattern found in the baseline regressions.

The results of panel regressions were also tested for presence of influential observations. By and large, exclusion of any single country does not lead to significant changes in the magnitude of estimated coefficients and leaves them inside the initial confidence intervals. In cases when exclusion of one country made coefficients insignificant, the loss of significance can be attributed to reduced number of observations and not to the presence of influential observations.

In few cases, however, the exclusion of one country drove estimates of coefficients of the main variables of interest out of their initial confidence intervals. The effect of revenue decentralization on pupil to teacher ratio in case of elected executives becomes insignificant and changes the sign after exclusion of Sweden for the developed countries and Iran or Argentina for the developing countries.[33] The result that decentralization is less harmful in case of elected state executives for illiteracy level, immunization, and infant mortality changes substantially and becomes insignificant with the exclusion of Israel.[34] These changes in the results about the effect of decentralization on education depending on subordination of state executives can not be attributed just to the reduction in the number of observations; thus, these results are to be treated with extreme caution.

The results proved to be robust to the addition of the following control variables: initial GDP per capita squared, federation dummy (Treisman, 2000), regional dummies

[33] The result that expenditure decentralization produces lower pupil to teacher ratios in case of elected state executives can not be made insignificant by exclusion of any single country.

[34] Classification of Israel as a developing country is arbitrary; it can as well be treated as a developed country. Inclusion of Israel in the subsample of developed countries does not lead to significant changes in the results for developed countries.

(Central and Eastern Europe, former Soviet Union, Asia, Africa, Middle East, Latin America), colonial dummies (British, Spanish, French, and other colonies) in cross-section regressions and logarithm of population in panel regressions. In addition, results are robust to replacing the across-time average level of democracy by its initial level in cross-country regressions. After exclusion of countries with authoritarian regimes from the sample some results lost significance while most remain significant and consistent with the baseline results.

In the beginning of transition, many post-communist countries experienced "initial" output fall, deterioration in quality of public goods, and economic decentralization (Roland, 2000). Since we cannot account for the nature of these processes, we verified that the exclusion of observations for the transition countries before 1995 does not affect the results.

To make sure that results of panel regressions do not just reflect trends in decentralization and its effectiveness (for instance, due to better information and monitoring technologies), in addition to year dummies, we included interaction term of year dummies and decentralization to control for these trends and got the same results as in the baseline regressions.[35]

As discussed in section 2, potential drawback of fractionalization of government parties as a measure of party strength is that it may reflect the effects of other political institutions that affect both the fractionalization and the results of decentralization. Such institutions include proportional or majoritarian electoral rule and presidential or parliamentary government system. To make sure that fractionalization of governing

[35] De Figueiredo and Weingast (2002) discuss global decentralization trends.

parties measures the party strength rather than the effect of these other institutions we tried each of the following three options. First, we included dummies for electoral rule and government system as well as their interaction term with the measures of fiscal decentralization in the set of control variables. Second, we used the residuals from the regression of government parties' fractionalization on these dummy variables as an alternative measure of party strength. Third, for developing countries we had sufficient number of observations to re-estimate regressions on the subsample of countries with proportional representation. Each approach produced results very similar to the baseline.

In the cross-country regressions for the subsample of developed countries we face the problem of a small number of degrees of freedom if we include the full set of controls used in the regressions for the subsample of developing countries. We use the following two alternative strategies to check the robustness of the results for developed countries with respect to the choice of control variables: 1) one-by-one exclusion of the least statistically significant control variables (with t-statistics less than unity) from regressions with the full set of controls and 2) one-by-one inclusion of the most economically and statistically significant control variables to the regressions starting with no controls. Regardless of the strategy, we get the same results as in regressions with the full set of controls with the only difference that exclusion of insignificant control variables in some cases makes the results more significant.[36]

As our measures of democratic traditions do not distinguish between younger democracies with good democratic institutions and older democracies with inferior

[36] All the results (from the estimation with the full set of controls) preserve their sign and most remain significant with no control variables included into regressions (except for growth regressions where the initial GDP per capita is an important control). All the results become significant after adding two most significant control variables.

democratic institutions, the results for developing countries based on the age of main parties as a measure of party strength may have an alternative explanation because the age of parties may primarily reflect age of democracy rather then party strength. In this case, institution building processes in young democracies that are likely to affect decentralization outcomes may drive our results. In order to rule this story out, we included a direct measure of the age of democracy in a country together with its interaction term with our measures of fiscal decentralization in all regressions with the party age.[37] The results proved to be very robust.

Overall, sensitivity analysis suggests that our results are generally stable.[38]

5.2. Endogeneity issues

Since fiscal decentralization may be endogenous, we use instruments in the panel regressions (for both subsamples) and cross-country regressions (for the subsample of the developing and transition countries).[39] In the panel regressions we instrument measures of fiscal decentralization, political centralization, their interaction term, and democracy with their lagged values. In the cross-country regressions we use geographical area of countries and its interaction term with measures of political centralization as instruments for fiscal decentralization and the interaction of decentralization and political

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[37] As a proxy for the age of democracy we take the number of years since the democratic regime has been established for the last time as reported in *Polity IV* data base. The age of democracy takes zero value if the current or any future value of *Polity IV* measure of democracy is zero. This measure of the age of democracy is only weakly correlated with the age of main parties.

[38] There are several potential problems with our empirical methodology. First, as in all cross-country studies, there is a possibility of omission of some important variables. It is encouraging, however, that panel regressions for party strength with country fixed effects produce results consistent with cross-section analysis. Second, we were unable to completely rule out potential endogeneity of political variables in cross-country regressions. Finally, it is possible that fractionalization of parliament and average age of main parties capture some other features of political institutions and not the strength of political parties.

[39] See Strumpf and Oberholzer-Gee, 2002 and Fisman and Gatti, 2002 for a discussion of endogeneity of decentralization.

institutions.[40] The intuition behind this instrument is that, ceteris paribus, costs of centralized governance increase with geographical size of the country which leads to higher economic decentralization in countries with larger area. In the subsample of developing and transition countries geographical area is strongly correlated with fiscal decentralization. In the subsample of developed countries, however, the correlation is weaker. As shown in Table A5 in appendix (which reports F-statistics from all the first stage regressions), residual correlation of our instrument with decentralization in OECD countries is prohibitively weak in regressions for measures of party strength. Thus, we report uninstrumented results for the subsample of developed countries. For geographical area to be a valid instrument, it should be uncorrelated with the independent variables other than through its effect on fiscal decentralization. Yet, in the long run, geographical area can be endogenous (Alesina and Spolaore, 1997; Alesina and Wacziarg, 1998; Alesina, Spolaore, and Wacziarg, 2003). We assume that 25 years is sufficiently short horizon to treat the area of countries as exogenous.[41]

Comparison of the results with and without instruments for decentralization shows that the signs of coefficients are the same and the magnitudes increase considerably (by one and a half - two times on average). Some of the results that are insignificant in regressions without instruments become significant with instrumentation.

[40] Other studies (Fisman and Gatti, 2002; de Mello and Barenstein, 2001) used country legal origin as an instrument. It is not an appropriate choice of instrument in our case because legal origin can affect our dependent variables not through fiscal decentralization but through other channels (La Porta et al., 1999). Our results support this notion because legal origin is significant in regressions that include measures of fiscal decentralization.

[41] This assumption is supported by the fact that geographical area is insignificant if added in regressions that include fiscal decentralization. We should note, however, that almost all the countries in our sample for which the area changed since 1975 emerged after the brake up of the former socialist states (Soviet Union, Yugoslavia, and Czechoslovakia). Although their resultant size was historically predetermined, there is a possibility that the brake up and performance of these countries during transition are related in a way that introduces correlation between the geographical area and our dependent variables.

The Hausman test, however, does not reject the hypothesis that both specifications are consistent.[42] In the regressions for the subsample of developed countries that use subordination as a measure of political centralization, the results of regressions with and without instruments are almost identical.[43] Therefore, we conclude that 1) in developing countries there may be a bias that attenuates coefficients towards zero, probably, as a result of a measurement error and 2) results for developed countries are unbiased.

We do not have valid instrument for political institutions in cross-section regressions. To account for possible endogeneity we used the initial levels of the age of the main parties and government fractionalization instead of across-time averages in the cross-section analysis. The results using initial values of political institutions are very similar to those in the baseline regressions; few results lost significance, however.

We use lags as instruments in panel regressions. For the most part instrumentation increases the magnitude of coefficients while preserving their signs. This is also consistent with the measurement error explanation of the bias. The only exception is regressions with government fractionalization as a measure of party strength. Use of instruments in these regressions leads to a negative shift in point estimates of coefficients (we observe occasional alteration of the sign when coefficients are positive in uninsrumented regressions). This shift in the estimates can not be explained by the measurement error. A possible explanation of this bias is as follows. An increase in economic performance (e.g., growth and public goods) can have different effect on fractionalization of governing parties in economically centralized and decentralized

[42] The only exception is the regression of GDP growth with share of subnational revenues and party age, for which the null hypothesis is rejected.
[43] F-statistics are high enough for us to be able to compare the regressions for subnational revenues.

states. In countries with low level of decentralization, better performance leads to relative strengthening of the national governing parties because the success is attributed to national policies. In highly decentralized countries, voters attribute economic success to regional policies that may lead to a relative increase in fractionalization of national government parties due to strengthening of local political organizations. If this is the case, uninstrumented regressions should produce an upward bias in the coefficient of the interaction term between government fractionalization and fiscal decentralization; and the use of instruments should lead to a decrease in the coefficient. This is consistent with our findings.

6. Summary and discussion of empirical results

First we discuss the results about strength of political parties.[44] We find very strong evidence that in developing countries low age of main parties and high fractionalization of government parties worsen the effect of fiscal decentralization on economic growth, government quality, and public goods.[45] This evidence is a solid support for Riker's theory that strong political parties increase political accountability of subnational governments improving the results of decentralization. In developed countries party age has a negative effect on the results of decentralization on economic growth, government quality, and public goods provision in contrast to the results for developing countries. Yet, the effect of government fractionalization in developed countries is weaker but in line with the effect in developing countries: fractionalization of government parties negatively affects the results of decentralization for public goods

[44] Table A6 in the appendix summarizes all the results: it presents signs and significance of coefficients of the cross-term of fiscal decentralization and political institutions.

[45] The fact that political institutions affect results of decentralization in the same way for all the outcomes is remarkable because in many contexts there exist a tradeoff between growth and government quality, on the one hand, and public goods provision, on the other hand (Besley and Coate, 2000; Roland 2000).

provision. As we discussed above, results based on fractionalization of government parties are subject to alternative explanation related to possibilities of secessionist movements. If, however, fractionalization is a valid measure of party strength, the difference in the results highlights the importance of the level of civic development and democratic tradition for functioning of political institutions.[46] Generally speaking, political centralization has two effects on political incentives: an adverse effect of a decrease in political competition and a beneficial effect of an increase in career concerns. The two alternative measures that we use – the age of main parties and fractionalization of governing parties – at different levels of civic development and democratic tradition, capture different aspects of political centralization. Developed countries are characterized by presence of a priori strong political incentives compared to developing countries. At this level of development, an increase in party age captures not only an increase in career concerns but also a decrease in political competition because it reflects lack of entry. In contrast, government fractionalization measure captures the weakness of career concerns rather than political competition because it reflects the relative political weight of any governing party.[47] Under the conditions of the low level of civic capital and absence of long democratic tradition, party strength turns out to have much smaller effect on political competition compared to developed countries. Thus, both of our measures capture career concerns. The reason is that politics in many developing countries is characterized by capture of institutions, electoral institutions and media included. For example, Russia in the 1990s provides a good example of how local and

[46] Note that this difference can not be explained by presence of nonlinear effect because the ranges of values of the party age variable in developed and developing countries significantly overlap.

[47] Fractionalization may actually reflect a decrease in political competition when the largest governing party has the same-size fraction in parliament and the other parties get more fractionalized.

regional-level politicians can manage to eliminate political competition altogether with the help of control over local media and courts.[48] Under these conditions, political competition is a second order effect of party strength compared to disciplining and unifying effect of strong national parties due to career concerns. Thus, an increase in party age in developed countries with a priory high level of political accountability has an overall adverse effect on political incentives because the marginal cost of a decrease in political competition overweighs the marginal benefit of an increase in career concerns. In developing countries political competition plays little role in disciplining politicians in contrast to career concerns that become the source of local political incentives.

Overall, Riker's theory is confirmed by the evidence from developing countries. It is worth noting that the results of cross-section and panel regressions for political centralization are consistent.[49]

Let us turn to the discussion of the results about the effect of subnational elections. The cross-section results for developing countries sharply contrast with the view that local elections provide sufficient political accountability. Elections of state executive officials worsen the effect of decentralization on quality of government, public

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[48] To test the validity of our explanation of difference in party age results for developed and developing countries, we re-estimated regressions for party age separately for the subsamples of developing countries that differ in the level of independence of media. In the subsample of developing countries with freedom of press below the median (measured by the Freedom House index, www.freedomhouse.com), we find some evidence in line with the overall results for developing countries: higher party age improves the effect of decentralization for TI index of corruption and immunization level. In contrast, the evidence from the subsample of developing countries with press freedom above the median resembles the results for developed countries: party age worsens the effect of decentralization on TI corruption index, regulatory quality, and pupil to teacher ratio. At the same time, consistent with our explanation, freedom of media has no effect on the results for government fractionalization. The results of this test at best should be viewed as weak tentative evidence in favor of our explanation because the number of degrees of freedom in these regressions is extremely small. Press freedom index included directly or as interaction in any of our regressions is insignificant. This may be explained by the unreliable cardinal properties of this index.

[49] Besley and Case (1995) provide evidence of influence of political parties on accountability using panel data for the US states.

goods provision, and economic growth in the long run in developing countries. Municipal elections also significantly hurt the results of decentralization for the long run economic growth and provision of some public goods. The overall effect of elections, however, is positive for almost one half of the developing countries that have sufficiently low decentralization.[50] Elections at the subnational levels do not result in better decentralization outcomes in developing countries because of localism, relatively high capture, and provincial protectionism (Bardhan, 2002). Provincial protectionist policies and capture harm economic performance by creating negative externalities due to breakup of national markets as well as undermining interjurisdictional political competition.

The results for developed countries are mixed. There is evidence of a negative effect of subnational elections on the decentralization outcomes for growth, immunization, and infant mortality from cross-section regressions and for immunization and infant mortality from panel regressions. Yet, there is a small positive effect of decentralization on quality of governance. Municipal elections positively significantly affect the results of revenue decentralization for the government effectiveness; in all other regressions for government quality the coefficients of the cross term are positive (but insignificant). Overall, cross-section regressions suggest that elections have a better effect on accountability in developed compared to developing and transition countries.[51]

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[50] Local elections have independent of decentralization effect on governance. First, they help the government to gather and aggregate information about people's preferences. Second, they have an important influence on development of civil society.

[51] Besley and Coate (2000) compare performance of elected to appointed regulators in the US electricity sector and find that elected regulators ensure lower consumer prices but not necessarily better quality of service.

There is a dichotomy between the results for public goods provision in cross-section and panel regressions in developing countries (the same is true for the pupil to teacher ratio in the developed countries subsample). It is particularly striking for elections of state executives: all the panel results suggest that elections result in better outcomes of decentralization; cross-section results state the opposite. One, however, should not place too much value on panel results for the following reasons. First of all, most of the panel results that indicate better effect of decentralization in case of elected state and municipal executives are not robust to exclusion of influential observations (see section 5.1). Second, between 97 and 99.99 percent of total explained variation in dependent variables is accounted for by country fixed effects, in other words, is essentially left unexplained in the panel regressions for subordination.[52] Yet about 60 to 80 percent of variation in point estimates of country fixed effects is explained by the right hand side variables from cross-country regressions. The contribution of the cross-term of political centralization and fiscal decentralization is in range between 1 and 9 percentage points. Finally, panel results for subordination may be driven by reverse causation as very small (compared to overall variation) short run changes in dependent variable can influence the explanatory variables. This situation can occur, for instance, if national government provides more financial assistance to the regions that have temporary troubles in the provision of public goods in the case when the local executives are appointed and less assistance in the case when they are elected. This story produces negative correlation between the short run changes in fiscal decentralization and public goods in the case of appointed local executives and no significant correlation in the case

[52] In panel regressions for party strength, a much larger portion of explained variation (about 12 percent) is due to changes in explanatory variables rather than fixed effects.

of elected executives. Our empirical results confirm these predictions. All the pieces of evidence that point to unrobustness of panel results, reverse causality and poor explanatory power in panel regressions suggest that cross-section results for subordination are the main ones.[53]

7. Conclusions

Our key finding is that political institutions - in particular, political centralization - play an important role in determining the results of fiscal decentralization. In line with the theory of Riker (1964) we find that strong national party system is a very effective way of securing political accountability needed for efficient decentralization in developing countries. In developed countries institutions that strengthen the effect of political centralization on career concerns of politicians improve political accountability just as in developing countries. Political centralization may, however, have an affect on political competition. Therefore, it is particularly important to ensure institutional possibilities for turnover of governing political parties.

Constitutional and administrative arrangements that make local executives directly subordinate to the higher-level authorities also were found to improve political incentives in decentralization (Blanchard and Shleifer, 2000). This, however, does not mean that a policy prescription for large inherently decentralized countries should be to get rid of subnational elections. First, local elections have a substantial (independent of

[53] If, despite of all said above, one takes panel results seriously, the difference between the panel and cross-section results can arise because of a bias in cross-section estimation as a result of unobserved heterogeneity – an omitted variable that is controlled for by fixed effects in the panel estimation. If this is the case, the true results are produced by the panel regressions. It is, however, hard to believe that local elections provide weaker political incentives in developed countries compared to developing: panel results suggest that decentralization brings inferior outcomes of immunization and infant mortality when subnational officials are elected in the developed countries and superior outcomes in developing countries.

decentralization) positive effect on many economic outcomes. Second, they are a necessary prerequisite to developing democratic tradition, civil society, and other components civic capital accumulation. Third, politicians at all levels of government may be subject to capture, and therefore, administrative control of local by central officials does not necessarily align interest of local bureaucrats with the public (Bardhan and Mookherjee, 1999).

Thus, a better remedy to poor governance, public goods provision, and growth in inherently decentralized countries is building strong national political parties. Strong parties help to provide elected local officials with efficient political incentives because their chances of reelection depend both on the national party support (i.e., national interests) and the satisfaction of local constituency (i.e., local interests).

Fiscal decentralization and political institutions affect one another and are influenced by many other factors. Accounting for the determinants of fiscal decentralization and political institutions is the task for future research.

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Table 1. Cross-country and panel regressions. Party age. Subsample of developing and transition countries.

	Quality of Government (Cross-section)±								Public Goods and Growth (Cross section)±								Public Goods (Panel)±					
	Government Effectiveness Index	Regulation Quality index	Control over Corruption Index	Rule of Law index	Government Effectiveness Index	Regulation Quality index	Control over Corruption Index	Rule of Law index	Immunization	Negative of Infant Mortality	Negative of Logarithm (Pupil to Teacher Ratio)	GDP growth	Immunization	Negative of Infant Mortality	Negative of Logarithm (Pupil to Teacher Ratio)	GDP growth	Immunization	Negative of Infant Mortality	Negative or Logarithm (Pupil to Teacher Ratio)	Immunization	Negative of Infant Mortality	Negative of Logarithm (Pupil to Teacher Ratio)
Subnational expenditure share	-0.033	-0.079	-0.078	-0.099					-3.367	-1.912	-0.008	-0.044					-0.849	0.281	-0.004			
	[1.02]	[0.99]	[0.95]	[1.18]					[0.65]	[0.67]	[0.19]	[0.73]					[1.61]	[1.13]	[0.96]			
CROSSTERM: Subnational expenditure share & Age of the main parties	1.023	1.744	1.733	2.121					52.815	43.085	0.316	1.225					31.749	-2.739	0.146			
	[1.82]*	[1.16]	[1.16]	[1.35]					[0.78]	[1.17]	[0.60]	[1.73]*					[2.59]***	[0.70]	[1.46]			
Subnational revenue share					-0.025	-0.058	-0.057	-0.070					-1.429	-0.919	-0.010	-0.049				-1.457	0.068	-0.016
					[1.22]	[1.54]	[1.74]*	[2.29]**					[1.26]	[1.10]	[0.55]	[1.06]				[2.20]**	[0.24]	[1.77]*
CROSSTERM: Subnational revenue share & Age of the main parties					0.892	1.658	1.670	1.880					28.256	31.737	0.370	1.356				49.541	-4.888	0.480
					[1.89]*	[1.81]*	[2.18]**	[2.54]**					[1.87]*	[2.78]***	[1.67]	[3.61]***				[2.96]***	[0.92]	[2.68]***
Age of the main parties	-12.350	-30.267	-30.852	-38.493	-5.118	-28.914	-30.460	-31.498	-840.67	-634.72	-5.48	-20.07	-339.95	-314.04	-4.69	-16.74	-578.68	-123.28	-4.82	-609.27	-139.64	-9.03
	[1.01]	[0.94]	[0.95]	[1.13]	[0.38]	[1.31]	[1.67]	[1.69]	[0.71]	[1.02]	[0.62]	[1.80]*	[1.34]	[1.73]*	[1.34]	[2.69]***	[2.31]**	[1.41]	[2.08]**	[1.75]*	[1.51]	[2.78]***
Logarithm (GDP per capita)	0.451	0.119	0.314	0.230	0.479	0.201	0.415	0.338	-0.108	21.183	0.158	-0.608	1.934	22.726	0.169	-0.530	2.517	-1.110	0.005	4.560	-0.444	0.050
	[3.87]***	[0.51]	[1.27]	[0.85]	[4.33]***	[1.45]	[2.93]***	[2.63]**	[0.01]	[4.40]***	[2.42]**	[5.47]***	[0.55]	[7.63]***	[3.77]***	[3.67]***	[0.96]	[0.65]	[0.19]	[1.50]	[0.23]	[1.14]
Democratic traditions	0.076	0.062	0.184	0.159	0.055	0.011	0.138	0.097	2.327	4.317	0.014	0.051	1.504	3.737	0.014	0.050	-1.656	-0.324	-0.011	-1.463	-0.355	-0.014
	[1.68]	[0.57]	[1.86]*	[1.47]	[2.29]**	[0.27]	[4.43]***	[2.76]**	[0.66]	[1.80]*	[0.44]	[0.89]	[1.12]	[2.17]**	[0.57]	[0.99]	[2.35]**	[0.66]	[1.82]*	[2.01]**	[0.72]	[1.85]*
Current level of democracy	0.043	0.081	0.042	0.082	0.039	0.063	0.024	0.062	0.756	0.211	0.018	0.061	-0.138	-0.203	0.018	0.035	30.354	8.837	0.180	31.571	9.079	0.261
	[2.17]**	[1.95]*	[1.33]	[2.35]**	[1.91]*	[1.64]	[1.02]	[2.52]**	[0.39]	[0.15]	[0.96]	[1.02]	[0.14]	[0.16]	[0.88]	[0.98]	[3.45]***	[2.14]**	[2.47]**	[3.71]***	[2.26]**	[3.37]***
Logarithm (Fertility)												-0.517				-0.653	-84.450	-35.556	-0.328	-79.905	-28.861	-0.131
												[0.60]				[1.63]	[5.67]***	[4.47]***	[2.69]***	[4.90]***	[3.53]***	[0.73]
Logarithm (Population)	0.024	0.106	0.118	0.189	-0.008	-0.009	0.004	0.046	6.382	3.177	-0.018	0.125	0.078	-0.050	-0.011	0.142						
	[0.18]	[0.42]	[0.50]	[0.74]	[0.12]	[0.10]	[0.05]	[0.56]	[0.43]	[0.35]	[0.15]	[0.58]	[0.02]	[0.01]	[0.21]	[0.80]						
Share of protestant	0.006	0.009	0.002	-0.007	0.006	0.009	0.001	-0.009	-0.308	-0.220	-0.004	0.000	-0.257	-0.254	-0.006	-0.006						
	[0.63]	[0.63]	[0.14]	[0.47]	[0.76]	[0.70]	[0.13]	[0.81]	[0.75]	[0.87]	[1.29]	[0.01]	[1.30]	[1.36]	[1.94]*	[0.88]						
Ethnolinguistic fractionalization	0.404	0.569	0.977	1.719	0.386	0.282	0.733	1.359	21.512	-7.042	0.116	-0.287	2.842	-12.362	0.223	0.013						
	[0.50]	[0.32]	[0.65]	[1.05]	[0.61]	[0.25]	[0.94]	[1.45]	[0.34]	[0.19]	[0.21]	[0.37]	[0.16]	[0.81]	[0.70]	[0.02]						
Latitude	0.361	1.160	2.384	3.261	0.337	0.761	1.900	2.760	184.050	70.382	0.666	3.821	68.007	4.866	0.774	3.364						
	[0.22]	[0.30]	[0.59]	[0.80]	[0.23]	[0.29]	[0.84]	[1.34]	[0.62]	[0.45]	[0.29]	[0.98]	[1.02]	[0.12]	[0.83]	[1.24]						
English legal origin	-0.662	-0.860	-1.460	-1.929	.	.	.	.	11.662	-14.679	0.275	-0.313	-4.626	-48.053	0.174	-0.746						
	[1.34]	[0.67]	[1.31]	[1.55]	[.]	[.]	[.]	[.]	[0.45]	[0.58]	[2.19]**	[0.62]	[0.42]	[5.44]***	[1.37]	[2.93]***						
Socialist Legal origin	-0.280	-0.636	-0.653	-1.118	0.176	-0.419	0.231	0.092	21.888	10.393	0.494	-1.656	8.694	-19.111	0.375	-2.119						
	[0.75]	[0.63]	[0.62]	[1.02]	[0.46]	[0.89]	[0.42]	[0.22]	[0.72]	[0.39]	[4.03]***	[3.14]***	[1.02]	[2.40]**	[3.18]***	[6.47]***						
French legal origin	-0.438	-0.077	-0.661	-1.090	0.037	0.327	0.386	0.297	28.675	5.588	0.237	0.093	-0.003	-34.646	0.134	-0.337						
	[1.65]	[0.14]	[1.45]	[1.75]*	[0.17]	[1.00]	[1.37]	[0.88]	[0.59]	[0.18]	[0.78]	[0.20]	[0.00]	[3.13]***	[0.72]	[0.66]						
Fixed investments												-0.007				-0.001						
												[0.39]				[0.09]						
Openness												0.006				0.005						
												[1.72]*				[1.19]						
Annual dummies																	Y	Y	Y	Y	Y	Y
Observations	41	41	41	41	39	39	39	39	70	70	70	70	70	70	70	70	333	223	246	329	219	241
Number of countries																	47	51	45	48	51	45

Robust t-statistics in parenthesis in cross-section regressions, z-statistics in parenthesis in panel regressions

*** - significant at 1% level;** - significant at 5% level;* - significant at 10% level; ± there are no significant results for Transparency International index of corruptiona and illiteracy

Table 2. Cross-country and panel regressions. Party age. Subsample of developed countries.

	Quality of Government (Cross-section)										Public Goods and Growth (Cross-section)±						Public Goods (Panel)±			
	Transparency International index for 2001	Government Effectiveness Index	Regulation Quality index	Control over Corruption Index	Rule of Law index	Transparency International index for 2001	Government Effectiveness Index	Regulation Quality index	Control over Corruption Index	Rule of Law index	Immunization	Negative of Infant Mortality	GDP growth	Immunization	Negative of Infant Mortality	GDP growth	Immunization	Negative of Infant Mortality	Immunization	Negative of Infant Mortality
Subnational expenditure share	0.060	0.033	0.028	0.020	0.013						-0.233	0.229	0.011				-0.178	0.004		
	[1.97]*	[3.42]***	[2.26]**	[1.78]	[1.79]						[0.64]	[3.77]***	[3.11]**				[0.20]	[0.08]		
CROSSTERM: Subnational expenditure share & Age of the main parties	-0.852	-0.233	-0.202	-0.297	-0.146						1.157	-2.282	-0.132				-13.521	-0.064		
	[3.32]***	[2.20]*	[1.56]	[2.24]**	[1.74]						[0.33]	[3.10]**	[3.59]***				[1.52]	[0.10]		
Subnational revenue share						0.091	0.036	0.029	0.041	0.024				0.116	0.265	0.010			1.225	0.100
						[2.97]**	[2.51]**	[2.16]*	[2.74]**	[3.03]**				[0.20]	[3.18]***	[1.65]			[1.23]	[1.84]*
CROSSTERM: Subnational revenue share & Age of the main parties						-0.882	-0.251	-0.195	-0.350	-0.185				-0.411	-2.571	-0.119			-22.721	-0.559
						[3.70]***	[2.04]*	[1.70]	[3.13]**	[2.38]**				[0.09]	[3.61]***	[2.25]**			[2.56]**	[1.01]
Age of the main parties	46.826	14.300	13.408	18.556	8.295	44.157	14.090	12.648	19.262	9.151	-67.81	53.69	8.25	-73.79	43.72	6.97	783.966	12.606	830.197	24.753
	[3.54]***	[2.54]**	[2.71]**	[3.07]**	[1.64]	[3.88]***	[2.56]**	[2.51]**	[3.54]***	[2.14]*	[0.35]	[1.82]*	[4.26]***	[0.43]	[1.41]	[3.31]***	[2.47]**	[0.53]	[2.99]***	[1.34]
Logarithm (GDP per capita)	-3.868	-0.871	-1.544	-1.651	-0.087	-5.507	-1.147	-1.800	-2.548	-0.558	-1.226	-0.446	-0.921	-3.513	-0.305	-0.901	61.304	2.886	37.176	2.764
	[2.01]*	[0.85]	[1.50]	[1.45]	[0.12]	[2.76]**	[1.08]	[1.53]	[2.52]**	[0.89]	[0.20]	[0.58]	[15.39]***	[0.52]	[0.24]	[11.76]***	[3.06]***	[2.83]***	[2.06]**	[2.77]***
Democratic traditions	0.422	0.082	0.131	0.123	0.056	0.584	0.111	0.156	0.208	0.100							-7.172	1.407	-7.272	1.313
	[2.34]**	[0.79]	[1.22]	[1.12]	[0.73]	[2.89]**	[1.01]	[1.23]	[2.00]*	[1.52]							[1.92]*	[4.73]***	[2.08]**	[4.84]***
Current level of democracy											-6.140	-2.446	-0.287	-6.021	-1.823	-0.250	-6.666	-0.034	-6.742	-0.472
											[1.01]	[2.09]*	[4.67]***	[1.05]	[1.28]	[2.53]**	[0.78]	[0.07]	[0.84]	[0.89]
Logarithm (Fertility)																	-25.802	-1.746	-19.448	-1.946
																	[2.45]**	[2.43]**	[1.88]*	[2.69]***
Logarithm (Population)	-0.305	-0.082	-0.088	-0.093	-0.076	-0.378	-0.078	-0.085	-0.132	-0.093	0.166	-0.139	0.017	-0.351	0.070	0.031				
	[3.17]***	[1.67]	[2.17]*	[1.73]	[2.48]**	[4.18]***	[1.81]	[2.01]*	[3.40]***	[3.55]***	[0.08]	[0.80]	[0.44]	[0.19]	[0.37]	[0.90]				
Share of protestant	0.028	-0.002	-0.001	0.011	0.001	0.024	-0.003	-0.001	0.009	0.000	0.234	0.025	0.000	0.233	0.029	0.000				
	[4.71]***	[0.91]	[0.30]	[2.42]**	[0.41]	[4.01]***	[0.79]	[0.40]	[2.37]**	[0.07]	[1.89]*	[3.14]***	[0.13]	[1.80]*	[2.05]*	[0.22]				
Ethnolinguistic fractionalization											47.023	5.312	-0.282	46.156	5.118	-0.285				
											[2.23]**	[3.23]***	[1.97]*	[2.07]*	[1.97]*	[1.56]				
Latitude	-5.104	0.452	-0.560	-1.592	-0.342	-4.740	0.501	-0.449	-1.369	-0.233	1.052	9.401	-0.374	3.461	10.557	-0.353				
	[2.49]**	[0.86]	[0.79]	[1.76]	[0.75]	[2.16]*	[0.70]	[0.66]	[1.39]	[0.47]	[0.04]	[3.96]***	[1.37]	[0.12]	[3.03]**	[1.14]				
English legal origin											-18.732	-0.054	-0.090	-15.993	0.801	-0.074				
											[1.44]	[0.08]	[1.16]	[1.02]	[0.58]	[0.71]				
French legal origin	1.16	0.32	0.40	0.46	-0.08	1.83	0.44	0.49	0.85	0.13	-7.828	-0.084	-0.062	-3.657	1.112	-0.043				
	[1.64]	[0.72]	[0.83]	[1.00]	[0.23]	[2.23]**	[0.83]	[0.84]	[1.76]	[0.41]	[0.48]	[0.10]	[0.67]	[0.18]	[0.60]	[0.31]				
Openness													0.006			0.007				
													[8.96]***			[7.43]***				
Annual dummies																	Y	Y	Y	Y
Observations	20	20	20	20	20	20	20	20	20	20	22	22	22	22	22	22	207	365	207	366
Number of countries																	21	22	21	22
R-squared	0.84	0.68	0.53	0.77	0.8	0.86	0.63	0.48	0.82	0.83	0.72	0.9	0.97	0.71	0.83	0.96				

Robust t-statistics in parenthesis in cross-section regressions, z-statistics in parenthesis in panel regressions

*** - significant at 1% level;** - significant at 5% level;* - significant at 10% level; ± There are no significant results in regressions of pupil-to-teacher ratio and illiteracy

The number of control variables in cross-country regressions is decreased to provide additional degrees of freedom. Regressions with the full set of control variables provide consisten results (see section 5.1).

Table 3. Cross-country regressions. Fractionalization of government parties. Subsample of developing and transition countries.

	Government Quality										Public Goods and Growth±									
	Transparency International index for 2001	Government Effectiveness Index	Regulation Quality index	Control over Corruption Index	Rule of Law index	Transparency International index for 2001	Government Effectiveness Index	Regulation Quality index	Control over Corruption Index	Rule of Law index	Immunization	Negative of Infant Mortality	Negative of Illiteracy	Negative of Logarithm (Pupil to Teacher Ratio)	GDP growth	Immunization	Negative of Infant Mortality	Negative of Illiteracy	Negative of Logarithm (Pupil to Teacher Ratio)	GDP growth
Subnational expenditure share	0.042	0.029	0.006	0.0003	0.003						0.180	0.683	0.054	0.013	0.039					
	[1.07]	[1.97]*	[0.30]	[0.02]	[0.22]						[0.47]	[1.16]	[0.12]	[1.83]*	[2.28]**					
CROSSTERM: Subnational expenditure share & Fractionalization of government parties	-0.083	-0.071	-0.074	-0.075	-0.090						-2.045	-1.939	-1.145	-0.018	-0.062					
	[1.44]	[3.77]***	[2.41]**	[1.97]*	[3.00]***						[5.56]***	[2.71]***	[2.23]**	[1.84]*	[3.19]***					
Subnational revenue share						0.038	0.029	0.011	0.008	0.012						0.333	0.699	0.127	0.011	0.055
						[1.37]	[2.51]**	[0.85]	[0.64]	[1.40]						[0.97]	[1.32]	[0.29]	[1.66]	[1.53]
CROSSTERM: Subnational revenue share & Fractionalization of government parties						-0.092	-0.074	-0.072	-0.074	-0.089						-1.789	-2.068	-0.908	-0.026	-0.086
						[1.26]	[3.20]***	[3.03]***	[2.75]**	[5.46]***						[6.94]***	[3.74]***	[2.04]**	[3.26]***	[3.92]***
Fractionalization of government parties	2.327	1.451	1.439	1.786	1.784	2.268	1.283	1.126	1.558	1.493	24.050	45.900	13.602	0.515	0.962	19.521	46.626	13.271	0.557	1.456
	[1.34]	[2.53]**	[1.80]*	[2.10]**	[2.64]**	[1.11]	[2.08]**	[1.53]	[2.35]**	[3.06]***	[2.98]***	[3.02]***	[1.06]	[2.92]***	[2.29]**	[2.41]**	[3.18]***	[1.11]	[3.43]***	[2.82]***
Logarithm (GDP per capita)	1.224	0.499	0.177	0.346	0.332	1.197	0.511	0.212	0.369	0.359	3.132	19.531	15.152	0.135	-0.579	2.759	19.598	13.988	0.148	-0.381
	[2.72]**	[3.23]***	[1.06]	[2.08]**	[2.38]**	[2.69]**	[3.38]***	[1.28]	[2.41]**	[2.85]***	[1.54]	[5.33]***	[4.74]***	[3.10]***	[5.24]***	[1.26]	[5.24]***	[4.23]***	[3.25]***	[1.84]*
Democratic traditions	0.155	0.054	0.018	0.141	0.099	0.164	0.053	-0.004	0.119	0.074	0.984	4.734	1.710	0.016	0.024	1.035	4.767	1.714	0.018	0.034
	[1.76]*	[1.58]	[0.33]	[2.35]**	[2.71]**	[1.86]*	[1.81]*	[0.09]	[2.64]**	[2.70]**	[0.99]	[2.90]***	[1.30]	[0.78]	[0.62]	[1.02]	[3.00]***	[1.28]	[0.88]	[0.77]
Current level of democracy	-0.044	0.035	0.069	0.030	0.076	-0.048	0.034	0.063	0.021	0.066	0.447	-0.868	0.322	0.010	-0.010	0.243	-0.869	0.078	0.016	-0.028
	[0.72]	[1.21]	[1.76]*	[1.13]	[3.05]***	[0.76]	[1.11]	[1.47]	[0.82]	[2.44]**	[0.78]	[0.74]	[0.34]	[0.67]	[0.23]	[0.34]	[0.75]	[0.08]	[0.97]	[0.55]
Logarithm (Population)	-0.217	-0.052	0.016	0.071	0.094	-0.175	-0.050	-0.036	-0.002	0.012	-0.612	-1.234	2.472	-0.050	-0.054	-1.877	-0.936	1.462	-0.023	-0.064
	[0.76]	[0.48]	[0.10]	[0.45]	[0.74]	[1.03]	[0.65]	[0.40]	[0.03]	[0.18]	[0.25]	[0.30]	[0.79]	[0.96]	[0.52]	[1.00]	[0.29]	[0.56]	[0.53]	[0.37]
Share of protestant	0.027	0.012	0.022	0.015	0.007	0.027	0.011	0.016	0.010	0.001	-0.066	0.025	0.221	-0.002	0.006	-0.105	-0.077	0.153	-0.003	0.003
	[2.01]*	[1.84]*	[3.16]***	[2.87]***	[1.33]	[2.02]*	[1.61]	[1.84]*	[1.77]*	[0.10]	[0.50]	[0.13]	[0.78]	[0.77]	[1.48]	[0.87]	[0.39]	[0.55]	[1.10]	[0.53]
Ethnolinguistic fractionalization	-1.214	-0.034	-0.313	0.026	0.691	-1.087	0.032	-0.335	-0.069	0.582	-11.762	-37.815	-6.963	-0.173	-1.042	-14.40	-36.46	-5.516	-0.101	-1.217
	[0.85]	[0.06]	[0.38]	[0.05]	[1.16]	[0.81]	[0.05]	[0.43]	[0.18]	[1.07]	[1.84]*	[2.77]***	[0.68]	[0.79]	[2.45]**	[2.21]**	[2.97]***	[0.55]	[0.47]	[1.77]*
Latitude	-0.471	-0.984	-1.624	-0.091	-0.159	-0.020	-1.032	-1.599	0.051	-0.019	22.277	-40.14	-5.161	-0.306	-0.741	15.967	-39.3	-14.3	-0.002	-1.162
	[0.15]	[1.06]	[1.37]	[0.08]	[0.19]	[0.01]	[0.94]	[1.14]	[0.04]	[0.02]	[1.02]	[0.83]	[0.19]	[0.57]	[0.64]	[0.86]	[0.97]	[0.68]	[0.00]	[0.57]
English legal origin	1.554	-0.034	-0.004	-0.691	-0.931	.	-0.432	-0.248	-0.715	-0.812	9.775	-20.19	4.570	0.206	-0.135	-1.793	-49.27	-28.44	0.154	-0.514
	[1.45]	[0.09]	[0.01]	[1.33]	[2.32]**	[.]	[1.28]	[0.68]	[1.93]*	[3.18]***	[1.29]	[1.59]	[0.29]	[2.01]**	[0.61]	[0.26]	[5.16]***	[3.51]***	[1.26]	[1.69]*
Socialist Legal origin	0.986	0.297	0.369	0.231	0.107	-0.527	.	.	.	.	26.402	18.468	26.090	0.553	-1.874	13.508	-8.864	-3.870	0.482	-2.107
	[1.41]	[1.53]	[1.67]	[1.04]	[0.61]	[0.51]	[.]	[.]	[.]	[.]	[3.54]***	[1.35]	[1.60]	[4.44]***	[5.82]***	[2.71]***	[1.12]	[0.50]	[4.13]***	[6.28]***
French legal origin	1.310	0.151	0.396	-0.145	-0.540	-0.135	-0.195	0.082	-0.223	-0.485	9.482	-2.051	13.448	0.150	-0.119	-3.477	-31.427	-18.783	0.099	-0.676
	[1.35]	[0.46]	[1.23]	[0.46]	[2.30]**	[0.14]	[0.47]	[0.22]	[0.53]	[1.66]	[1.40]	[0.17]	[0.91]	[1.66]	[0.63]	[0.65]	[2.78]***	[2.43]**	[0.75]	[1.33]
Fixed investments															0.020					0.011
															[1.95]*					[0.99]
Openness															0.001					-0.003
															[0.33]					[0.59]
Logarithm (Fertility)															-1.575					-1.355
															[4.85]***					[3.82]***
Observations	36	41	41	41	41	34	39	39	39	39	73	73	67	73	73	73	73	67	73	73

Robust t-statistics in parenthesis

*** - significant at 1% level;** - significant at 5% level;* - significant at 10% level; ± Panel regressins do not yield any significant results

Table 4. Cross-country and panel regressions. Fractionalization of government parties. Subsample of developed countries.

	Public Goods and Growth (Cross section)±								Public Goods (Panel)					
	Immunization	Negative of Logarithm (Infant Mortality)	Negative of Logarithm (Pupil to Teacher Ratio)	GDP growth	Immunization	Negative of Logarithm (Infant Mortality)	Negative of Logarithm (Pupil to Teacher Ratio)	GDP growth	Immunization	Negative of Infant Mortality	Negative of Logarithm (Pupil to Teacher Ratio)	Immunization	Negative of Infant Mortality	Negative of Logarithm (Pupil to Teacher Ratio)
Subnational expenditure share	-0.002	0.034	0.009	0.006					-0.546	0.030	-0.008			
	[0.01]	[1.22]	[1.39]	[1.59]					[1.15]	[1.10]	[0.87]			
CROSSTERM: Subnational expenditure share & Fractionalization of government parties	-0.991	-0.038	-0.025	-0.008					-1.140	-0.096	-0.087			
	[2.31]**	[0.47]	[1.35]	[0.73]					[1.48]	[1.73]*	[2.38]**			
Subnational revenue share					0.042	-0.010	0.010	0.005				-0.885	0.058	-0.004
					[0.16]	[0.21]	[1.13]	[0.90]				[1.99]**	[1.82]*	[0.17]
CROSSTERM: Subnational revenue share & Fractionalization of government parties					-1.006	-0.057	-0.031	-0.006				-0.515	0.011	-0.078
					[2.26]**	[0.58]	[1.66]	[0.54]				[0.77]	[0.18]	[2.96]***
Fractionalization of government parties	15.537	4.867	0.406	0.432	8.077	4.774	0.420	0.367	30.328	3.116	1.965	7.558	-0.138	1.167
	[1.29]	[1.25]	[0.55]	[0.94]	[0.73]	[1.17]	[0.63]	[0.88]	[1.35]	[1.71]*	[1.82]*	[0.49]	[0.10]	[1.80]*
Logarithm (GDP per capita)	-2.796	0.509	-0.148	-0.943	-3.583	0.663	-0.181	-0.936	79.914	2.888	-0.281	61.633	3.009	-1.277
	[0.62]	[0.48]	[0.56]	[8.47]***	[0.75]	[0.65]	[0.75]	[8.07]***	[4.11]***	[3.01]***	[0.65]	[3.73]***	[3.22]***	[2.38]**
Democratic traditions									-13.838	1.106	0.143	-13.241	1.049	0.193
									[4.12]***	[4.18]***	[1.33]	[3.94]***	[3.91]***	[1.92]*
Current level of democracy	-8.221	-1.525	0.129	-0.098	-9.386	-1.561	0.119	-0.081	-5.665	-0.008	0.029	0.401	-0.233	0.019
	[1.57]	[1.53]	[0.68]	[0.91]	[1.53]	[1.37]	[0.59]	[0.62]	[0.72]	[0.02]	[0.20]	[0.06]	[0.53]	[0.13]
Logarithm (Fertility)									-39.182	-1.973	-1.031	-33.196	-2.358	-0.734
									[3.74]***	[2.82]***	[3.86]***	[3.24]***	[3.33]***	[3.08]***
Share of protestant	0.239	0.023	0.0017	-0.00004	0.219	0.023	0.0015	-0.0001						
	[2.79]**	[2.28]**	[0.54]	[0.04]	[2.66]**	[2.20]*	[0.48]	[0.06]						
Ethnolinguistic fractionalization	49.889	2.026	0.267	-0.135	51.468	3.499	0.299	-0.143						
	[3.83]***	[0.86]	[0.54]	[0.60]	[2.92]**	[0.99]	[0.51]	[0.46]						
Latitude	-15.827	6.068	-0.750	-0.357	-15.177	5.611	-0.908	-0.306						
	[1.01]	[1.14]	[1.50]	[0.69]	[0.93]	[1.08]	[1.78]	[0.68]						
English legal origin	-30.547	0.493	-0.761	-0.039	-32.907	-0.374	-0.827	-0.012						
	[3.11]***	[0.33]	[2.13]*	[0.33]	[2.95]**	[0.20]	[2.00]*	[0.08]						
French legal origin	-16.297	-0.742	-0.462	-0.153	-18.776	-2.140	-0.562	-0.143						
	[1.18]	[0.59]	[1.36]	[1.04]	[1.23]	[0.96]	[1.31]	[0.69]						
Openness				0.006				0.006						
				[3.01]**				[2.94]**						
Annual dummies									Y	Y	Y	Y	Y	Y
Observations	22	22	21	22	22	22	21	22	210	379	165	210	380	165
Number of countries									21	22	20	21	22	20
R-squared	0.8	0.78	0.51	0.92	0.78	0.78	0.52	0.91						

t-statistics in parenthesis for cross-country regressions; z-statistics in parenthesis for panel regressions.

*** - significant at 1% level;** - significant at 5% level;* - significant at 10% level; ± There are no significant results in cross section regressions for measures of the guality of government

The number of control variables in cross-country regressions is decreased to provide additional degrees of freedom. Regressions with the full set of control variables provide consisten results (see section 5.1).

Table 5a. Quality of government regressions. State executives elected/appointed. Subsample of developing and transition countries.

	Quality of Government (Cross section)									
	Transparency International index for 2001	Government Effectiveness Index	Regulation Quality index	Control over Corruption Index	Rule of Law index	Transparency International index for 2001	Government Effectiveness Index	Regulation Quality index	Control over Corruption Index	Rule of Law index
Subnational expenditure share										
(Effect for appointed state executives)	0.066	0.054	0.047	0.002	0.020					
	[1.22]	[1.38]	[1.02]	[0.06]	[0.56]					
CROSSTERM: Subnational expenditure share &										
Elected state executives (Difference in effects)	-0.052	-0.063	-0.077	-0.039	-0.056					
	[0.71]	[2.89]***	[3.40]***	[1.48]	[2.82]***					
Subnational revenue share										
(Effect for appointed state executives)						0.055	0.057	0.056	0.012	0.0296
						[1.10]	[1.50]	[1.26]	[0.46]	[0.94]
CROSSTERM: Subnational revenue share &										
Elected state executives (Difference in effects)						-0.062	-0.078	-0.095	-0.047	-0.068
						[0.61]	[2.37]**	[2.99]***	[1.71]	[2.67]**
Elected state executives	-0.100	0.954	1.414	0.664	0.907	-0.065	0.944	1.314	0.479	0.726
	[0.10]	[2.07]**	[2.77]**	[1.26]	[2.01]*	[0.05]	[1.76]*	[2.03]*	[1.24]	[1.42]
Logarithm (GDP per capita)	1.995	0.833	0.645	0.500	0.634	2.039	0.944	0.797	0.599	0.752
	[1.58]	[3.82]***	[2.72]**	[2.60]**	[3.21]***	[1.67]	[3.51]***	[2.68]**	[3.45]***	[2.93]***
Democratic traditions	0.120	-0.018	-0.096	0.115	0.015	0.148	-0.003	-0.083	0.112	0.018
	[0.88]	[0.26]	[1.17]	[2.78]**	[0.26]	[1.20]	[0.06]	[1.10]	[3.69]***	[0.30]
Current level of democracy	-0.088	0.021	0.081	0.004	0.056	-0.065	0.031	0.088	0.0016	0.056
	[1.01]	[0.50]	[1.65]	[0.20]	[1.67]	[0.73]	[0.58]	[1.38]	[0.06]	[1.19]
Logarithm (Population)	-0.352	-0.181	-0.204	-0.007	-0.063	-0.214	-0.158	-0.212	-0.044	-0.090
	[0.91]	[0.93]	[0.90]	[0.04]	[0.34]	[0.90]	[0.95]	[1.09]	[0.40]	[0.61]
Share of protestant	0.017	0.015	0.021	0.015	0.009	0.021	0.014	0.018	0.011	0.005
	[1.11]	[3.10]***	[5.22]***	[3.19]***	[2.41]**	[1.29]	[2.13]**	[1.89]*	[2.36]**	[0.73]
Ethnolinguistic fractionalization	-0.878	-0.804	-1.074	-0.534	-0.317	-0.575	-0.601	-0.904	-0.557	-0.291
	[0.38]	[1.32]	[1.46]	[1.03]	[0.56]	[0.27]	[0.91]	[1.29]	[1.42]	[0.49]
Latitude	0.529	-1.301	-2.746	0.408	-0.530	0.682	-1.508	-2.767	0.612	-0.424
	[0.15]	[0.72]	[1.14]	[0.28]	[0.33]	[0.18]	[0.69]	[0.90]	[0.42]	[0.20]
English legal origin	1.271	0.537	0.805	-0.105	-0.067	0.000	0.275	0.000	-0.030	0.000
	[1.14]	[1.51]	[2.08]**	[0.32]	[0.21]	[.]	[0.74]	[.]	[0.10]	[.]
Socialist legal origin	0.125	-0.092	0.097	-0.064	-0.247	-0.796	0.000	-0.419	0.000	-0.072
	[0.10]	[0.28]	[0.32]	[0.19]	[0.91]	[0.78]	[.]	[1.07]	[.]	[0.18]
French legal origin	1.576	0.701	1.053	0.297	0.059	0.496	0.712	0.614	0.563	0.385
	[1.32]	[2.33]**	[3.28]***	[0.98]	[0.20]	[0.28]	[1.38]	[1.77]*	[1.04]	[1.04]
Observations	31	39	39	39	39	29	37	37	37	37
Subnational expenditure share in adjacent regressions	0.013	-0.010	-0.030	-0.037	-0.036					
(Effect for elected state executives)	[0.20]	[0.29]	[0.87]	[0.90]	[1.12]					
Subnational revenue share in adjacent regressions						-0.007	-0.021	-0.039	-0.036	-0.038
(Effect for elected state executives)						[0.09]	[0.71]	[1.34]	[1.43]	[1.62]

Robust t-statistics in parenthesis in cross-section regressions, z-statistics in parenthesis in panel regressions
*** - significant at 1% level;** - significant at 5% level;* - significant at 10% level;

Table 5b. Public goods and economic growth regressions. State executives elected/appointed. Subsample of developing and transition countries.

	Public goods and Growth (Cross-section)										Public Goods (Panel)							
	Immunization	Negative of Infant Mortality	Negative of Illiteracy	Negative of Logarithm (Pupil to Teacher Ratio)	GDP growth	Immunization	Negative of Infant Mortality	Negative of Illiteracy	Negative of Logarithm (Pupil to Teacher Ratio)	GDP growth	Immunization	Negative of Infant Mortality	Negative of Illiteracy	Negative of Logarithm (Pupil to Teacher Ratio)	Immunization	Negative of Infant Mortality	Negative of Illiteracy	Negative of Logarithm (Pupil to Teacher Ratio)
Subnational expenditure share (Effect for appointed state executives)	0.305	2.288	0.930	0.022	0.073						-1.029	-0.475	-0.085	-0.031				
	[0.28]	[1.22]	[0.88]	[1.25]	[1.01]						[1.46]	[2.28]**	[1.74]*	[3.03]***				
CROSSTERM: Subnational expenditure share & Elected state executives (Difference in effects)	-1.592	-2.698	-1.682	-0.017	-0.105						2.068	0.659	0.146	0.035				
	[1.36]	[1.96]*	[1.85]*	[1.17]	[2.04]**						[2.50]**	[2.10]**	[2.21]**	[3.04]***				
Subnational revenue share (Effect for appointed state executives)						0.418	1.858	0.875	0.016	0.058					-0.378	-0.468	-0.199	-0.041
						[0.54]	[1.46]	[1.03]	[1.14]	[0.94]					[0.38]	[1.97]**	[2.66]***	[1.99]**
CROSSTERM: Subnational revenue share & Elected state executives (Difference in effects)						-1.578	-3.074	-1.798	-0.024	-0.134					0.564	0.412	0.127	0.054
						[1.36]	[2.00]**	[1.52]	[1.16]	[1.93]*					[0.63]	[1.95]*	[2.25]**	[3.83]***
Elected state executives	25.325	54.077	30.283	0.487	2.016	17.565	47.246	25.304	0.526	1.965	-83.985	-19.691	-3.915	-1.123	-30.881	-9.155	-1.538	-1.117
	[1.21]	[1.84]*	[1.52]	[1.56]	[2.05]**	[1.02]	[1.70]*	[1.20]	[1.54]	[1.62]	[3.69]***	[1.90]*	[1.95]*	[3.28]***	[1.98]**	[1.66]*	[1.27]	[4.18]***
Logarithm (GDP per capita)	5.183	30.444	20.643	0.213	-0.470	6.123	31.938	21.317	0.230	-0.231	-11.126	0.226	-2.667	-0.006	-8.377	2.417	-1.784	-0.107
	[1.23]	[2.93]***	[3.08]***	[2.19]**	[1.69]*	[1.49]	[3.56]***	[3.01]***	[2.52]**	[0.63]	[3.26]***	[0.11]	[7.64]***	[0.12]	[1.40]	[0.96]	[3.13]***	[0.97]
Democratic traditions	0.417	1.838	0.228	-0.012	-0.069	0.553	2.215	0.335	-0.011	-0.064	0.962	0.856	0.136	-0.006	0.405	0.532	0.033	-0.012
	[0.25]	[0.51]	[0.12]	[0.37]	[0.76]	[0.37]	[0.74]	[0.17]	[0.36]	[0.67]	[1.58]	[2.14]**	[1.93]*	[0.70]	[0.54]	[1.31]	[0.43]	[0.77]
Current level of democracy	-0.399	-2.227	-0.858	0.001	-0.055	-0.488	-1.637	-0.756	0.009	-0.034	-4.803	24.799	5.544	0.028	-4.411	22.826	5.827	-0.075
	[0.48]	[0.98]	[0.59]	[0.05]	[0.50]	[0.66]	[0.89]	[0.58]	[0.48]	[0.52]	[0.52]	[4.79]***	[5.76]***	[0.20]	[0.45]	[4.15]***	[5.54]***	[0.51]
Logarithm (Fertility)					-2.270					-1.743	-53.714	-40.314	-10.493	0.080	-63.980	-36.581	-9.161	0.086
					[1.95]*					[2.59]**	[3.91]***	[5.65]***	[8.12]***	[0.37]	[3.39]***	[4.49]***	[5.51]***	[0.22]
Logarithm (Population)	-2.732	-9.590	-2.149	-0.111	-0.226	-3.034	-5.818	-1.330	-0.062	-0.038								
	[0.57]	[1.00]	[0.40]	[1.33]	[0.66]	[1.11]	[1.02]	[0.36]	[1.14]	[0.17]								
Share of protestant	-0.107	-0.109	0.235	-0.004	0.003	-0.119	-0.171	0.173	-0.005	-0.003								
	[0.83]	[0.37]	[0.76]	[1.46]	[0.40]	[0.99]	[0.64]	[0.58]	[1.58]	[0.42]								
Ethnolinguistic fractionalization	-21.091	-61.157	-23.703	-0.255	-1.405	-21.879	-55.302	-19.204	-0.177	-1.199								
	[1.43]	[1.99]*	[1.28]	[0.76]	[1.45]	[1.88]*	[2.29]**	[1.11]	[0.58]	[1.36]								
Latitude	7.762	-113.610	-45.449	-0.640	-2.402	1.686	-87.267	-43.174	-0.179	-1.002								
	[0.14]	[0.88]	[0.71]	[0.59]	[0.58]	[0.05]	[0.95]	[0.93]	[0.22]	[0.34]								
English legal origin	14.159	-6.085	12.196	0.405	0.434	1.653	-30.597	-17.307	0.382	0.343								
	[1.37]	[0.35]	[0.79]	[2.50]**	[0.70]	[0.19]	[1.80]*	[1.33]	[2.02]**	[0.44]								
Socialist legal origin	18.605	-6.096	11.672	0.378	-2.871	5.703	-27.358	-14.963	0.321	-2.904								
	[1.39]	[0.24]	[0.63]	[1.57]	[2.60]**	[0.66]	[1.76]*	[1.27]	[1.92]*	[3.88]***								
French legal origin	6.952	-11.606	7.532	0.130	-0.142	-6.805	-35.564	-21.510	0.096	-0.335								
	[0.68]	[0.61]	[0.50]	[0.77]	[0.40]	[0.97]	[1.66]	[2.06]**	[0.59]	[0.72]								
Fixed investments					0.041					0.035								
					[1.58]					[2.12]**								
Openness					0.001					0.001								
					[0.07]					[0.08]								
Annual dummies											Y	Y	Y	Y	Y	Y	Y	Y
Observations	70	70	64	70	70	70	70	64	70	70	237	184	280	151	230	176	267	143
Number of countries											36	37	34	26	35	36	33	25
Subnational expenditure share in adjacent regressions (Effect for elected state executives)	-1.287	-0.410	-0.752	0.005	-0.032						1.038	0.184	0.061	0.005				
	[1.15]	[0.26]	[0.83]	[0.32]	[0.78]						[2.50]**	[0.75]	[1.43]	[0.97]				
Subnational revenue share in adjacent regressions (Effect for elected state executives)						-1.159	-1.216	-0.922	-0.008	-0.076					0.186	-0.056	-0.072	0.013
						[1.38]	[1.19]	[1.31]	[0.52]	[2.09]**					[0.30]	[0.25]	[1.20]	[0.89]

Robust t-statistics in parenthesis in cross-section regressions, z-statistics in parenthesis in panel regressions

Table 6. Cross-country and panel regressions. State Executives elected/appointed. Subsample of developed countries.

	Public goods and Growth (Cross-section)±								Public Goods (Panel)					
	Immunization	Negative of Infant Mortality	Negative of Logarithm (Pupil to Teacher Ratio)	GDP growth	Immunization	Negative of Infant Mortality	Negative of Logarithm (Pupil to Teacher Ratio)	GDP growth	Immunization	Negative of Infant Mortality	Negative of Logarithm (Pupil to Teacher Ratio)	Immunization	Negative of Infant Mortality	Negative of Logarithm (Pupil to Teacher Ratio)
Subnational expenditure share (Effect for appointed state executives)	0.387	0.178	0.014	0.009					0.705	0.131	-0.071			
	[1.58]	[6.29]***	[1.30]	[2.56]**					[1.01]	[3.19]***	[2.66]***			
CROSSTERM: Subnational expenditure share & Elected state executives (Difference in effects)	-0.013	-0.150	-0.008	-0.007					-2.010	-0.203	0.082			
	[0.04]	[4.02]***	[0.72]	[1.89]*					[2.35]**	[4.10]***	[2.50]**			
Subnational revenue share (Effect for appointed state executives)					0.359	0.166	0.016	0.013				-0.650	0.113	-0.113
					[1.49]	[3.87]***	[1.35]	[3.50]***				[0.68]	[2.59]***	[2.09]**
CROSSTERM: Subnational revenue share & Elected state executives (Difference in effects)					0.185	-0.156	-0.009	-0.012				-0.672	-0.127	0.080
					[0.54]	[3.05]***	[0.74]	[3.25]***				[0.62]	[2.49]**	[1.65]*
Elected state executives	-17.420	3.477	0.184	0.327	-20.312	2.817	0.171	0.413	-0.059	3.601	0.000	-17.692	1.984	0.000
	[1.12]	[2.08]*	[0.65]	[2.00]*	[1.67]	[1.70]	[0.67]	[4.63]***	[0.01]	[4.45]***	[.]	[1.98]**	[3.06]***	[.]
Logarithm (GDP per capita)	12.468	0.712	-0.087	-0.960	7.399	0.956	-0.138	-0.950	87.780	0.206	-0.018	77.859	0.698	-0.675
	[0.90]	[1.23]	[0.47]	[17.19]***	[0.63]	[1.43]	[0.88]	[18.23]***	[3.59]***	[0.21]	[0.04]	[3.46]***	[0.68]	[1.47]
Democratic traditions	-0.378	0.467	0.028	0.019	-0.134	0.535	0.033	0.019	-22.455	1.904	-0.002	-21.393	1.748	-0.064
	[0.29]	[2.50]**	[0.94]	[2.00]*	[0.11]	[2.80]**	[1.20]	[2.70]**	[6.08]***	[7.53]***	[0.02]	[5.68]***	[6.99]***	[0.62]
Current level of democracy	1.384	-1.399	0.120	-0.170	3.051	-1.019	0.135	-0.223	-0.620	0.288	-0.180	-1.015	-0.443	0.232
	[0.39]	[2.44]**	[0.94]	[1.70]	[0.58]	[1.25]	[0.98]	[4.03]***	[0.08]	[0.74]	[0.93]	[0.14]	[1.14]	[1.24]
Logarithm (Fertility)									-47.619	-1.922	-0.519	-41.706	-1.856	-0.624
									[4.72]***	[2.91]***	[1.61]	[4.05]***	[2.77]***	[2.11]**
English legal origin	-0.878	-1.463	-0.364	-0.138	-2.399	-1.639	-0.395	-0.155						
	[0.10]	[1.81]*	[3.23]***	[1.68]	[0.33]	[1.90]*	[3.55]***	[1.98]*						
Openness				0.007				0.007						
				[5.23]***				[8.38]***						
Annual dummies									Y	Y	Y	Y	Y	Y
Observations	22	22	21	22	22	22	21	22	184	351	145	184	352	145
Number of countries									17	18	16	17	18	16
R-squared	0.81	0.91	0.51	0.95	0.82	0.87	0.54	0.96						
Subnational expenditure share in adjacent regressions (Effect for elected state executives)	0.374	0.028	0.006	0.002					-1.306	-0.072	0.012			
	[1.62]	[1.64]	[1.63]	[0.61]					[2.44]**	[2.60]***	[0.97]			
Subnational revenue share in adjacent regressions (Effect for elected state executives)					0.544	0.010	0.007	0.001				-1.322	-0.014	-0.032
					[2.36]**	[0.41]	[1.92]*	[0.23]				[2.97]***	[0.49]	[1.39]

Robust t-statistics in parenthesis in cross-section regressions. z-statistics in parenthesis in panel regressions
*** - significant at 1% level;** - significant at 5% level;* - significant at 10% level; ± There are no significant results in cross section regressions with measures of quality of government
The number of control variables in cross-country regressions is decreased to provide additional degrees of freedom. Regressions with the full set of control variables provide consisten results (see section 5.1).

Table 7. Cross-country and panel regressions. Municipal executives appointed/elected. Subsample of developing and transition countries.

	Public Goods and Growth (Cross section)±										Public Goods (Panel)							
	Immunization	Negative of Infant Mortality	Negative of Illiteracy	Negative of Logarithm (Pupil to Teacher Ratio)	GDP growth	Immunization	Negative of Infant Mortality	Negative of Illiteracy	Negative or Logarithm (Pupil to Teacher Ratio)	GDP growth	Immunization	Negative of Infant Mortality	Negative of Illiteracy	Negative of Logarithm (Pupil to Teacher Ratio)	Immunization	Negative of Infant Mortality	Negative of Illiteracy	Negative of Logarithm (Pupil to Teacher Ratio)
Subnational expenditure share																		
(Effect for appointed municipal executives)	0.360	2.061	0.940	0.033	0.082						-0.509	0.749	0.894	-0.268				
	[0.24]	[1.29]	[0.90]	[1.65]	[1.60]						[0.08]	[0.69]	[0.87]	[3.88]***				
CROSSTERM: Subnational expenditure share &																		
Elected municipal execut-s (Difference in effects)	-2.050	-1.858	-1.370	-0.024	-0.091						0.803	-0.588	-0.864	0.268				
	[1.96]*	[1.54]	[1.34]	[1.37]	[2.21]**						[0.13]	[0.54]	[0.83]	[3.88]***				
Subnational revenue share																		
(Effect for appointed municipal executives)						0.677	2.041	1.309	0.030	0.058					66.901	0.156	1.329	-0.156
						[0.63]	[1.46]	[1.25]	[1.73]*	[1.44]					[0.16]	[0.37]	[0.65]	[4.09]***
CROSSTERM: Subnational revenue share &																		
Elected municipal execut-s (Difference in effects)						-1.874	-2.145	-1.743	-0.030	-0.104					-67.418	-0.280	-1.436	0.166
						[1.90]*	[1.32]	[1.23]	[1.39]	[2.08]**					[0.16]	[0.60]	[0.70]	[4.23]***
Elected municipal executives	25.876	48.619	25.451	0.603	1.745	21.534	50.914	32.999	0.631	1.722	-32.146	29.257	27.336	-8.291	1732.927	14.447	37.155	0.000
	[1.17]	[1.84]*	[1.24]	[1.73]*	[1.99]*	[1.03]	[1.75]*	[1.29]	[1.76]*	[1.96]*	[0.17]	[0.76]	[0.86]	[3.83]***	[0.16]	[0.95]	[0.72]	[.]
Logarithm (GDP per capita)	0.611	21.597	16.317	0.189	-0.496	3.162	22.990	17.621	0.199	-0.425	22.701	19.138	1.502	0.061	37.769	18.054	1.810	0.018
	[0.11]	[4.10]***	[4.38]***	[2.38]**	[2.33]**	[0.77]	[3.98]***	[3.41]***	[2.29]**	[2.15]**	[3.24]***	[6.06]***	[1.83]*	[0.84]	[0.37]	[6.03]***	[2.13]**	[0.25]
Democratic traditions	0.212	3.380	0.862	-0.012	-0.023	0.565	3.731	0.780	-0.003	0.004	1.112	0.615	-2.283	0.028	3.870	1.013	-2.075	-0.028
	[0.11]	[1.71]*	[0.64]	[0.42]	[0.42]	[0.38]	[2.33]**	[0.59]	[0.11]	[0.09]	[0.39]	[0.44]	[6.88]***	[0.62]	[0.21]	[0.68]	[5.74]***	[0.60]
Current level of democracy	1.099	-2.138	-0.201	-0.005	-0.003	0.082	-2.331	-0.802	-0.004	0.011	0.021	0.253	-0.163	-0.005	0.376	0.139	-0.196	-0.001
	[0.60]	[1.24]	[0.14]	[0.24]	[0.04]	[0.08]	[1.67]	[0.53]	[0.22]	[0.21]	[0.03]	[0.48]	[1.59]	[0.62]	[0.12]	[0.29]	[1.88]*	[0.12]
Logarithm (Fertility)					-1.224					-0.895	-43.837	-26.681	-11.221	-0.695	-7.996	-25.822	-9.573	-0.773
					[2.18]**					[2.10]**	[3.06]***	[4.12]***	[7.24]***	[5.20]***	[0.03]	[3.91]***	[4.99]***	[5.52]***
Logarithm (Population)	4.783	-5.266	1.389	-0.097	-0.005	2.167	-3.608	1.018	-0.044	0.215								
	[0.55]	[0.72]	[0.26]	[0.98]	[0.02]	[0.51]	[0.85]	[0.29]	[0.73]	[1.42]								
Share of protestant	0.239	-0.136	0.211	-0.001	0.010	0.109	-0.189	0.142	-0.0002	0.006								
	[1.03]	[0.63]	[0.67]	[0.34]	[1.26]	[0.59]	[0.69]	[0.37]	[0.05]	[0.81]								
Ethnolinguistic fractionalization	-6.276	-42.352	-12.566	-0.291	-1.220	-17.305	-44.222	-14.502	-0.282	-1.075								
	[0.30]	[1.63]	[0.65]	[0.77]	[1.58]	[1.16]	[1.83]*	[0.64]	[0.79]	[1.75]*								
Latitude	80.661	-33.045	1.408	-0.320	0.849	55.913	-29.720	-4.208	0.042	2.449								
	[0.91]	[0.41]	[0.03]	[0.34]	[0.33]	[1.06]	[0.56]	[0.10]	[0.07]	[1.16]								
English legal origin	11.135	-9.503	10.890	0.339	0.023	14.317	-31.724	-11.014	0.419	0.493								
	[1.22]	[1.06]	[0.99]	[1.57]	[0.03]	[0.97]	[1.52]	[0.52]	[1.40]	[0.70]								
Socialist legal origin	15.755	-7.577	10.072	0.171	-2.817	14.283	-26.277	-15.033	0.327	-2.085								
	[0.83]	[0.39]	[0.61]	[0.46]	[3.05]***	[1.23]	[2.82]***	[1.80]*	[2.28]**	[6.24]***								
French legal origin	19.076	-10.113	9.834	0.035	-0.339	16.779	-30.735	-14.086	0.215	0.442								
	[1.15]	[0.59]	[0.72]	[0.12]	[0.51]	[0.97]	[1.68]*	[0.77]	[0.88]	[0.64]								
Fixed investments					0.028					0.028								
					[1.22]					[1.87]*								
Openness					0.0004					0.003								
					[0.07]					[0.76]								
Annual dummies											Y	Y	Y	Y	Y	Y	Y	Y
Observations	70	70	63	70	70	69	69	62	69	69	321	268	400	214	325	268	400	214
Number of countries											49	49	46	41	50	50	47	42
Subnational expenditure share in adjacent regressions	-1.690	0.203	-0.431	0.010	-0.008						0.293	0.1605	0.030	0.0003				
(Effect for elected municipal executives)	[1.10]	[0.16]	[0.44]	[0.59]	[0.20]						[0.82]	[0.98]	[0.71]	[0.09]				
Subnational revenue share in adjacent regressions						-1.197	-0.104	-0.434	0.000	-0.045					-0.518	-0.124	-0.108	0.010
(Effect for elected municipal executives)						[1.63]	[0.14]	[0.62]	[0.00]	[1.57]					[0.14]	[0.59]	[1.64]	[1.37]

Robust t-statistics in parenthesis in cross-section regressions, z-statistics in parenthesis in panel regressions

*** - significant at 1% level;** - significant at 5% level;* - significant at 10% level; ± There are no significant results in cross section regressions with measures of quality of government

Table 8. Cross-country regressions. Municipal executives elected/appointed. Subsample of developed countries.

	Quality of Government (Cross section)±		Public goods and Growth (Cross section)								Public Goods (Panel)					
	Government Effectiveness Index	Government Effectiveness Index	Immunization	Negative of Infant Mortality	Negative of Logarithm (Pupil to Teacher Ratio)	GDP growth	Immunization	Negative of Infant Mortality	Negative of Logarithm (Pupil to Teacher Ratio)	GDP growth	Immunization	Negative of Infant Mortality	Negative of Logarithm (Pupil to Teacher Ratio)	Immunization	Negative of Infant Mortality	Negative of Logarithm (Pupil to Teacher Ratio)
Subnational expenditure share																
(Effect for appointed municipal executives)	-0.007		0.717	0.143	0.016	0.004					1.283	0.0004	-0.173			
	[0.25]		[2.36]**	[4.77]***	[1.19]	[2.11]*					[1.20]	[0.06]	[3.67]***			
CROSSTERM: Subnational expenditure share &																
Elected municipal execut-s (Difference in effects)	0.018		-0.463	-0.102	-0.010	-0.001					-2.255	-0.004	0.179			
	[0.67]		[1.94]*	[4.12]***	[0.77]	[0.32]					[2.09]**	[0.61]	[3.69]***			
Subnational revenue share																
(Effect for appointed municipal executives)		-0.031					0.622	0.122	0.028	0.004				-2.460	-0.015	-0.274
		[1.55]					[2.10]*	[3.95]***	[5.12]***	[2.06]*				[2.24]**	[1.82]*	[4.05]***
CROSSTERM: Subnational revenue share &																
Elected municipal execut-s (Difference in effects)		0.036					-0.113	-0.100	-0.022	-0.002				1.864	0.019	0.265
		[1.86]*					[0.33]	[3.50]***	[4.52]***	[1.11]				[1.52]	[2.07]**	[3.92]***
Elected municipal executives	-0.707	-0.951	2.491	2.593	0.283	0.193	-6.698	2.150	0.356	0.229	.	.	.	.	.	.
	[0.96]	[1.67]	[0.28]	[3.70]***	[1.49]	[3.03]**	[0.59]	[2.54]**	[1.91]*	[4.11]***	[.]	[.]	[.]	[.]	[.]	[.]
Logarithm (GDP per capita)	-0.081	0.067	6.980	0.257	-0.119	-0.977	1.674	0.487	-0.147	-0.962	72.979	-0.057	0.643	61.496	-0.035	-0.535
	[0.11]	[0.09]	[0.54]	[0.37]	[0.60]	[15.65]***	[0.15]	[0.62]	[0.86]	[17.23]***	[3.17]***	[0.52]	[1.23]	[3.15]***	[0.32]	[1.31]
Democratic traditions	-0.036	-0.078	0.580	0.608	0.036	0.030	0.557	0.662	0.039	0.032	-17.448	0.104	0.065	-17.959	0.086	-0.035
	[0.37]	[1.04]	[0.46]	[2.41]**	[1.05]	[2.66]**	[0.48]	[2.65]**	[1.20]	[2.63]**	[5.50]***	[4.53]***	[0.59]	[5.23]***	[3.69]***	[0.40]
Current level of democracy			-6.474	-0.789	0.113	-0.031	-4.46	-0.264	0.122	-0.027	-11.450	0.006	0.141	-3.818	-0.025	0.079
			[1.10]	[1.78]*	[1.04]	[0.71]	[0.61]	[0.40]	[1.18]	[0.61]	[1.54]	[0.15]	[0.87]	[0.54]	[0.57]	[0.52]
Logarithm (Fertility)											-39.608	-0.304	-0.302	-39.777	-0.307	-0.801
											[4.04]***	[4.46]***	[0.95]	[3.82]***	[4.51]***	[3.30]***
Logarithm (Population)	-0.023	0.012														
	[0.39]	[0.22]														
Share of protestant	-0.002	-0.001														
	[0.63]	[0.44]														
Latitude	0.580	0.781														
	[0.95]	[1.30]														
English legal origin			-9.608	-2.062	-0.397	-0.112	-10.275	-2.213	-0.406	-0.118						
			[1.25]	[2.85]**	[2.14]*	[1.55]	[1.55]	[3.11]***	[2.20]**	[1.56]						
French legal origin	-0.426	-0.693														
	[0.99]	[2.55]**														
Openness						0.004				0.005						
						[3.94]***				[3.53]***						
Annual dummies											Y	Y	Y	Y	Y	Y
Observations	20	20	21	21	20	21	21	21	20	21	193	364	147	193	365	147
Number of countries											18	19	17	18	19	17
R-squared	0.52	0.58	0.40	0.79	0.46	0.95	0.46	0.75	0.56	0.94						
Subnational expenditure share in adjacent regressions	0.011		0.374	0.028	0.006	0.002										
(Effect for elected municipal executives)	[1.22]		[1.62]	[1.64]	[1.63]	[0.61]					-0.972	-0.004	0.006			
											[2.15]**	[1.47]	[0.65]			
Subnational revenue share in adjacent regressions		0.005					0.544	0.010	0.007	0.001				-0.596	0.003	-0.009
(Effect for elected municipal executives)		[0.65]					[2.36]**	[0.41]	[1.92]*	[0.23]				[1.32]	[1.10]	[0.41]

Robust t-statistics in parenthesis in cross-section regressions, z-statistics in parenthesis in panel regressions
*** - significant at 1% level;** - significant at 5% level;* - significant at 10% level; ± There are no other significant results in cross section regressions with measures of quality of government
The number of control variables in cross-country regressions is decreased to provide additional degrees of freedom. Regressions with the full set of control variables provide consisten results (see section 5.1).

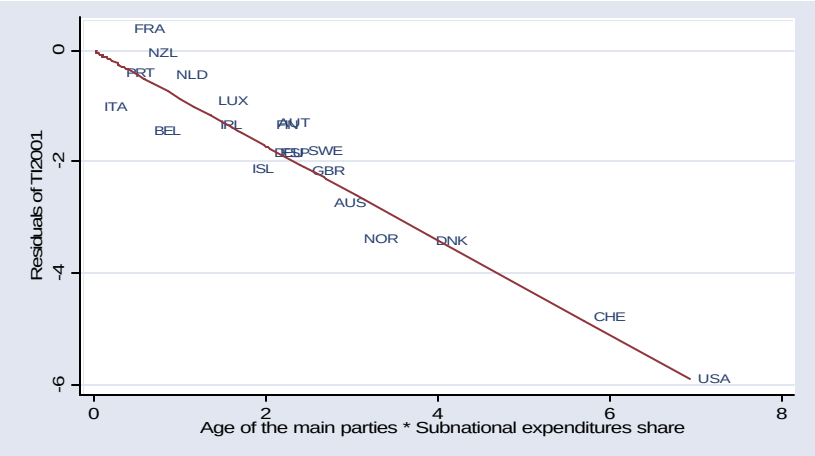


Figure 1. Party age and effect of decentralization on Transparency International index of corruption (2001) in developed countries

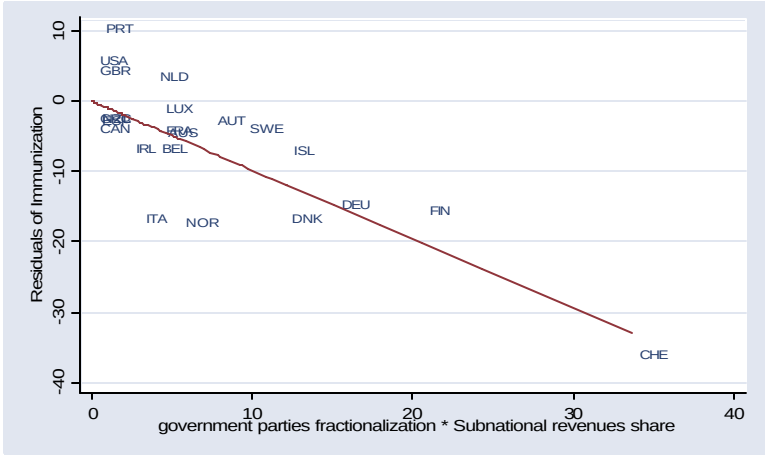


Figure 2. Fractionalization of government parties and effect of decentralization on the immunization in developed countries.

Figure 2. Party age and effect of decentralization on the rule of law index in developing and transition countries

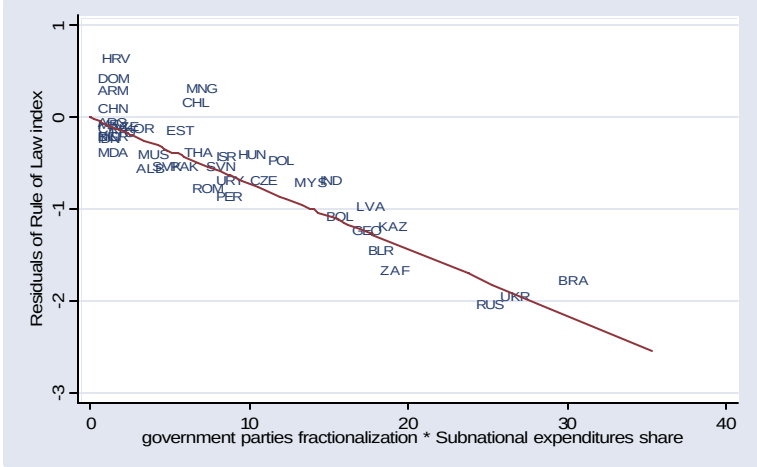
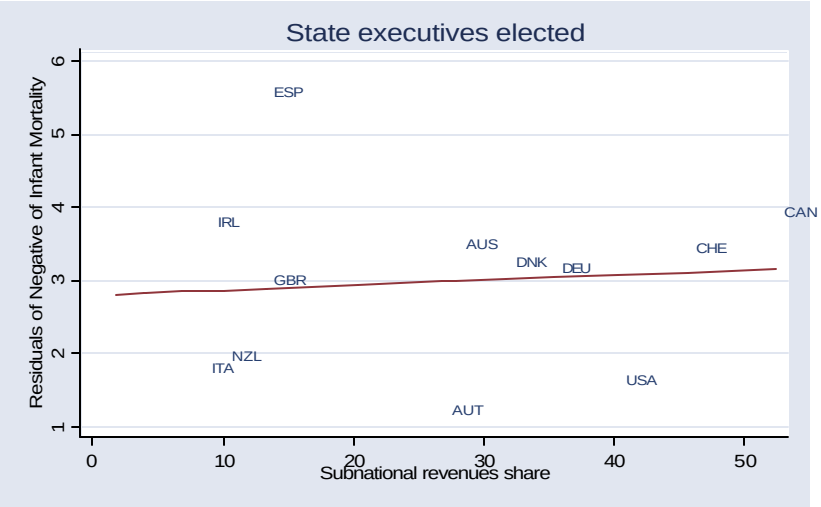


Figure 4. Fractionalization of government parties and effect of decentralization on the rule of law index in developing and transition countries



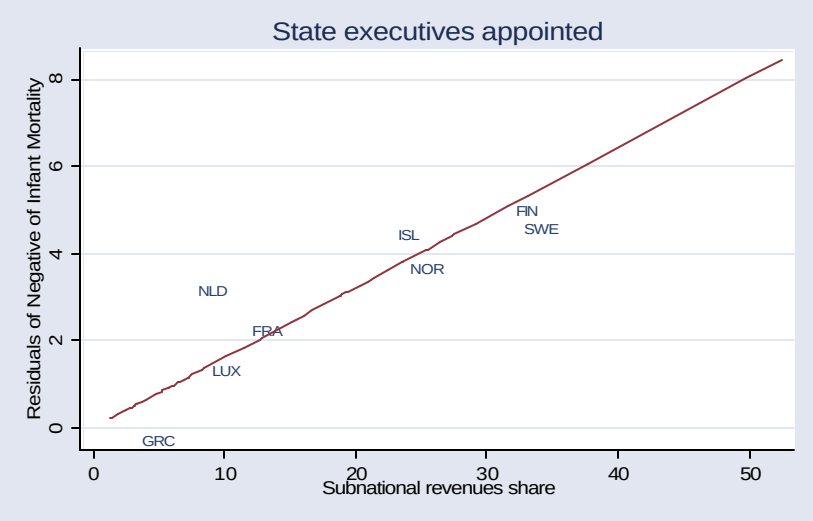
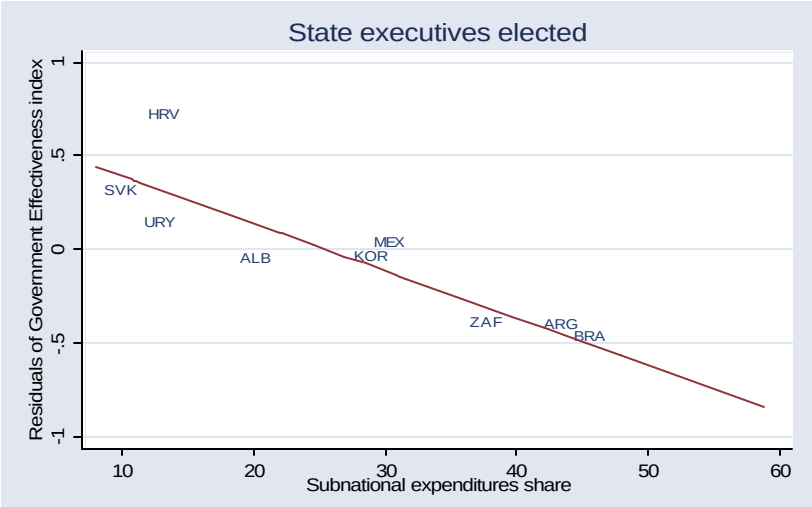


Figure 5. State executives elected/appointed and effect of decentralization on infant mortality in developed countries



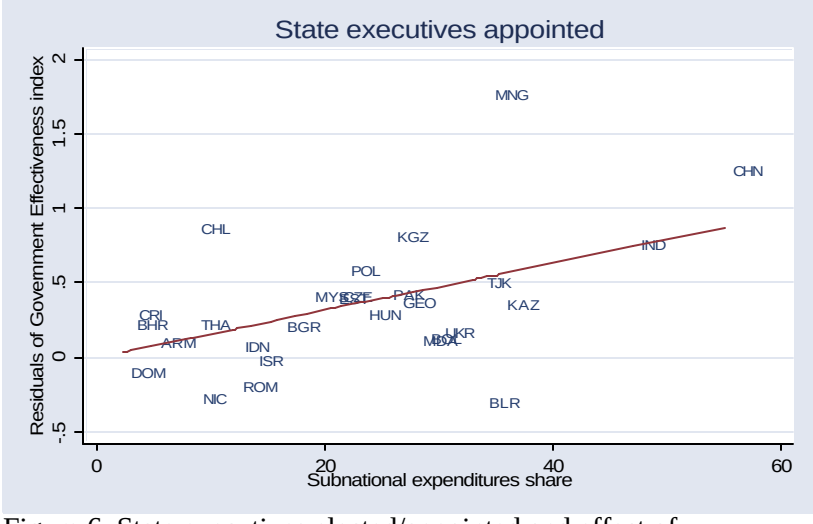


Figure 6. State executives elected/appointed and effect of decentralization on the government effectiveness index in developing and transition countries

APPENDIX

Table A1. Countries included in the sample

Subsample of developing and transition countries		
Albania	Ethiopia	Papua NG
Argentina	Fiji	Paraguay
Armenia	Gambia	Peru
Azerbaijan	Georgia	Philippines
Bahrain	Guatemala	Poland
Bangladesh	Honduras	Romania
Belarus	Hungary	Russia
Benin	India	Senegal
Bolivia	Indonesia	Slovakia
Botswana	Iran	Slovenia
Brazil	Israel	S Africa
Bulgaria	Jordan	Sri Lank
Burkina Faso	Kazakhstan	Tajikistan
Cameroon	Kenya	Thailand
Chile	South Korea	Trinidad and Tobago
China	Latvia	Tunisia
Colombia	Malawi	Turkey
Costa Rica	Malaysia	Uganda
Croatia	Mauritius	Ukraine
Cyprus	Mexico	Uruguay
Czech Republic	Moldova	Venezuela
Dom Republic	Mongolia	Zambia
Ecuador	Nicaragua	Zimbabwe
El Salvador	Pakistan	
Estonia	Panama	
Subsample of developed countries (members of the Development Assistance Committee of OECD and Iceland)		
Australia	Greece	Portugal
Austria	Iceland	Spain
Belgium	Ireland	Sweden
Canada	Italy	Switzerland
Denmark	Luxemburg	UK
Finland	Netherlands	USA
France	New Zealand	
Germany	Norway	

Table A2. Description of the variables

Variable	Description
Subnational expenditure share	Share of expenditures of all subnational governments (net of transfers to other levels of government) in total expenditures of consolidated central budget measured in percents. Scale from 0 to 100. *Source: Database on Fiscal Indicators[i], by the World Bank, based on IMF's Government Finance Statistics. Data from Government Finance Statistics 2001 was added. For Armenia, Korea, and Pakistan data were added using information from national statistical offices.*
Subnational revenue share	Share of revenues of all subnational governments in total revenues of consolidated central budget measured in percents. Scale from 0 to 100. *Source: Database on Fiscal Indicators, by the World Bank, based on IMF's Government Finance Statistics. Data from Government Finance Statistics 2001 was added. For Armenia, Korea, and Pakistan data were added using information from national statistical offices.*
Fractionalization of parliament	The probability that two members of parliament picked at random from the legislature will be of different parties. Missing if there is no parliament, if there are no parties in the legislature and if any government or opposition party seats are missing. Scale from 0 to 1. *Source: Database on Political Institutions, Version 3 (Beck et al., 2001).*
Fractionalization of government parties	The probability that two members of parliament picked at random from among the government parties will be of different parties. Missing if there is no parliament, if there are any government parties where seats are unknown or if there are no parties in the legislature. Scale from 0 to 1. *Source: Database on Political Institutions, Version 3, (Beck et al., 2001).*
Fractionalization of opposition parties	The probability that two m embers of parliament picked at random from among the opposition parties will be of different parties. Missing if there is no parliament, if there are any opposition parties where seats are unknown or if there are no parties in the legislature. Scale from 0 to 1. *Source: Database on Political Institutions, Version 3 (Beck et al., 2001).*
Party age	This is the average of the ages of the first government party, second government party, and 1st opposition party, or the subset of these for which age of party is known. The variable is measured in thousands of years. *Source: Database on Political Institutions, Version 3 (Beck et al., 2001).*
Elected municipal executives	Equals one if local executive is locally elected. Equals zero otherwise. No information, or no evidence of municipal governments, is recorded as missing. If one source has information on a specific period, and the other has no information on a different period, we do not extrapolate from one source to another - no information is always recorded as missing. If there are multiple levels of sub-national government, we consider the lowest level as the "municipal" level. *Source: Database on Political Institutions, Version 3 (Beck et al., 2001), updated using Nickson (1995) and various other sources.*
Elected state/province executives	Equals one if state/province executive is locally elected. Equals zero otherwise. If there are multiple levels of sub-national government, we consider the highest level as the "state/province" level. Indirectly elected state/province governments, where directly elected municipal bodies elect the state/province level, are not considered locally elected. Indirectly elected state/province governments elected by directly elected state/province bodies are considered locally elected. *Source: Database on Political Institutions, Version 3 (Beck et al., 2001), updated using Nickson (1995) and various other sources.*

Continued.

[i] Database can be found at http://www1.worldbank.org/publicsector/de_centralization/dataondecen.htm.

Table A2. Continued.

Variable	Description
Control over corruption	A governance indicator that reflects the statistical compilation of perceptions of corruption, conventionally defined as the exercise of public power for private gain, of a large number of survey respondents in industrial and developing countries, as well as non-governmental organizations, commercial risk rating agencies, and think-tanks during 2000 and 2001. Units range from about -2.5 to 2.5, with higher values corresponding to better governance outcomes. *Source: Kaufmann, Kraay, and Zoido-Lobaton (2002).*[ii]
Government effectiveness	A governance indicator that reflects the statistical compilation of perceptions of the quality of public service provision, the quality of the bureaucracy, the competence of civil servants, the independence of the civil service from political pressures and the credibility of government's commitment to policies of a large number of survey respondents in industrial and developing countries, as well as non-governmental organizations, commercial risk rating agencies, and think-tanks during 2000 and 2001. Units range from about -2.5 to 2.5, with higher values corresponding to better governance outcomes. *Source: Kaufmann, Kraay, and Zoido-Lobaton (2002).*
Regulation quality	A governance indicator that reflects the statistical compilation of perceptions of the incidence of market-unfriendly policies such as price controls or inadequate bank supervision, as well as perception of the burdens imposed by excessive regulation in areas such as foreign trade and business development of a large number of survey respondents in industrial and developing countries, as well as non-governmental organizations, commercial risk rating agencies, and think-tanks during 2000 and 2001. Units range from about -2.5 to 2.5, with higher values corresponding to better governance outcomes. *Source: Kaufmann, Kraay, and Zoido-Lobaton (2002).*
Rule of law	A governance indicator that reflects the statistical compilation of perceptions of the incidence of both violent and non-violent crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts of a large number of survey respondents in industrial and developing countries, as well as non-governmental organizations, commercial risk rating agencies, and think-tanks during 2000 and 2001. Units range from about -2.5 to 2.5, with higher values corresponding to better governance outcomes. *Source: Kaufmann, Kraay, and Zoido-Lobaton (2002).*
Corruption indices	The Transparency International Corruption Perceptions Indexes for years 2000 and 2001 respectively. Scale from 0 to 10, with higher values corresponding to better governance outcomes. *Source: Transparency International*[iii]
Immunization	Immunization, DPT (% of children under 12 months). Child immunization measures the rate of vaccination coverage of children under one year of age. A child is considered adequately immunized against diphtheria, pertussis (or whooping cough), and tetanus (DPT) after receiving three doses of vaccine. Scale from 0 to 100. *Source: World Development Indicators 2001, by the World Bank*
Infant mortality	Infant mortality rate is the number of infants dying before reaching one year of age, per 1000 live births in a given year. *Source: World Development Indicators 2001, by the World Bank*
Illiteracy	Adult illiteracy rate is the percentage of people aged 15 and above who cannot, with understanding, read and write a short, simple statement on their everyday life. Scale from 0 to 100. *Source: World Development Indicators 2001, by the World Bank*
Pupil to teacher ratio	Primary school pupil-teacher ratio is the number of pupils enrolled in primary school divided by the number of primary school teachers (regardless of their teaching assignment). *Source: World Development Indicators 2001, by the World Bank*

Continued.

[ii] Paper can be found at http://www.worldbank.org/wbi/governance/pdf/govmatters2.pdf.

[iii] Indices can be found at http://www.gwdg.de/~uwvw/.

Table A2. Continued.

Variable	Description
Fixed investments	Gross fixed capital formation (% of GDP). Gross fixed capital formation (gross domestic fixed investment) includes land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. According to the 1993 SNA, net acquisitions of valuables are also considered capital formation. *Source: World Development Indicators 2001, by the World Bank*
GDP per capita, PPP	GDP per capita based on purchasing power parity (PPP). PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current international dollars. *Source: World Development Indicators 2001, by the World Bank*
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 country of origin. *Source: World Development Indicators 2001, by the World Bank*
Openness	Error term from the linear regression of the share of export and import in GDP (measured in percent) on the area and population of the country. *Source: Constructed based on data from World Development Indicators 2001, by the World Bank*
Fertility	Total fertility rate represents the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with prevailing age-specific fertility rates *Source: World Development Indicators 2001, by the World Bank*
Current level of democracy	Index of democracy. Scale from 0 to 10 with higher values corresponding to more democratic outcomes. *Source: Polity IV Dataset.*
Democratic traditions	Average index of democracy for the last 50 years. Scale from 0 to 10 with higher values corresponding to more democratic outcomes. *Source: constructed based on data from Polity IV Dataset.*
Ethnolinguistic fractionalization	Index of ethnolinguistic fractionalization for the year 1985. Its value ranges from 0 to 1. *Source: Roeder, P. G. (2001).*[iv]
Share of protestants	Identifies the percentage of the population of each country that belonged to the Protestant religion in 1980. Scales from 0 to 100. *Source: La Porta et al. (1999).*
Latitude	The absolute latitude of the country, scaled to take values between 0 and 1. *Source: La Porta et al. (1999).*
Legal origin	Identifies the legal origin of the company law or commercial code of the country. There are five possible origins: (1) English Common Law; (2) French Commercial Code; (3) German Commercial Code; (4) Scandinavian Commercial Code; (5) Socialist/Communist laws. *Source: La Porta et al. (1999).*

[iv] Philip Roeder, G. (2001). "Ethnolinguistic Fractionalization (ELF) Indices, 1961 and 1985," February 16. The index can be found at http://weber.ucsd.edu/~proeder/elf.htm.

Table A3. Summary statistics for the measures of fiscal decentralization, political institutions, and dependent variables (average values for counties are summarized)

Variable	Number of observations	Mean	Standard deviation	Min	Max
Subsample of developing and transition countries					
Share of subnational expenditures	83	17.74	14.94	1.74	68.31
Share of subnational revenues	84	15.08	14.23	1.07	66.96
Municipal executives elected	124	0.51	0.46	0	1
State executives elected	141	0.17	0.34	0	1
Fractionalization of governing parties	155	0.39	0.30	0	1
Fractionalization of parliament	155	0.18	0.24	0	1
Fractionalization of opposition parties	121	0.48	0.26	0	1
Average age of main parties	142	0.02	0.02	0	0.15
Level of DPT immunization	178	68.60	19.94	14.18	99.75
Negative of logarithm of infant mortality	180	-3.66	0.82	-5.19	-1.95
Negative of illiteracy level	135	-31.44	24.52	-89.38	-0.20
Negative of logarithm of pupil to teacher ratio	167	-3.32	0.39	-4.21	-2.26
Transparency International index of corruption for the year 2001	68	3.72	1.64	0.40	9.50
Transparency International index of corruption for the year 2000	67	3.68	1.56	1.20	9.10
Index of government effectiveness	137	-0.25	0.77	-2.34	2.16
Index of regulation quality	146	-0.16	0.82	-2.95	1.82
Index of control over corruption	138	-0.27	0.70	-1.47	2.13
Index of rule of law	147	-0.23	0.76	-2.17	1.85
Subsample of developed countries					
Share of subnational expenditures	22	28.70	14.51	4.06	57.68
Share of subnational revenues	22	21.17	14.41	3.11	52.36
Municipal executives elected	22	0.82	0.39	0	1
State executives elected	23	0.59	0.49	0	1
Fractionalization of governing parties	23	0.67	0.10	0.48	0.83
Fractionalization of parliament	23	0.29	0.24	0	0.74
Fractionalization of opposition parties	23	0.46	0.21	0.003	0.85
Average age of main parties	23	0.06	0.03	0.01	0.14
Level of DPT immunization	23	83.88	12.87	46.44	99.00
Negative of logarithm of infant mortality	23	-2.14	0.26	-2.78	-1.74
Negative of logarithm of pupil to teacher ratio	22	-2.75	0.34	-3.27	-1.91
Transparency International index of corruption for the year 2001	23	7.87	1.39	4.20	9.90
Transparency International index of corruption for the year 2000	23	7.89	1.51	4.60	10.00
Index of government effectiveness	23	1.47	0.38	0.65	1.93
Index of regulation quality	23	1.05	0.29	0.58	1.50
Index of control over corruption	23	1.61	0.48	0.63	2.25
Index of rule of law	23	1.52	0.36	0.62	1.91

Table A4. Correlation coefficients of the indicators of .developing and transition countries (for average values for counties)

	Share of subnational expenditures	Share of subnational revenues	Municipal executives elected	State executives elected	Fractionalization of parliament	Fractionalization of governing parties
Subsample of developing and transition countries						
Share of subnational revenues	0.956[a]					
Municipal executives elected	-0.052	-0.178				
State executives elected	-0.016	-0.107	0.434[a]			
Fractionalization of parliament	-0.045	-0.057	0.174[c]	0.014		
Fractionalization of governing parties	-0.050	-0.055	0.029	-0.061	0.773[a]	
Average age of main parties	0.007	-0.038	-0.018	0.082	-0.183[b]	-0.193[b]
Subsample of developed countries						
Share of subnational revenues	0.943[a]					
Municipal executives elected	0.339	0.334				
State executives elected	0.417[c]	0.352	0.550[a]			
Fractionalization of parliament	0.085	0.006	-0.206	-0.408[c]		
Fractionalization of governing parties	0.112	0.074	-0.194	-0.364[c]	0.899[a]	
Average age of main parties	0.709[a]	0.705[a]	0.319	0.418[b]	-0.162	-0.104

a- significant at 1% level; b- significant at 5% level; c- significant at 10% level

Table A5. F-tests from the first-stage regressions

	Government quality regressions				Public goods and economic growth regressions			
	Interaction term with Subnational Expenditures	Interaction term with Subnational Revenues	Subnational Expenditures	Subnational Revenues	Interaction term with Subnational Expenditures	Interaction term with Subnational Revenues	Subnational Expenditures	Subnational Revenues
	Subsample of developing and transition countries							
Fractionalization of government parties	2.1	2	1.1	5.8	11.5	14.5	2.5	3.7
Age of main parties	5.9	6.9	3.3	5.6	27.2	46.3	4.7	5.1
Municipal executives elected	3.6	3	1.7	2.7	2.3	4.2	0.4	1.5
State executives elected	18	42	5.5	11	17.9	27.7	4.2	4.5
	Subsample of developed countries							
Fractionalization of government parties	2	3.6	3.9	8.8	0.4	0.4	6	13.5
Age of main parties	0.04	0.03	3	10.1	0.8	2.4	4	13.7
Municipal executives elected	2.5	3	3.2	10.7	2.4	5.9	7.9	16.5
State executives elected	1	4	0.9	2.4	6.3	8.5	3.3	8.6

Table A6: Summary of results

			CROSS SECTION										PANEL			
			Transparency International	Government Effectiveness	Regulation Quality	Control over Corruption	Rule of Law	GDP growth	Immunization	Negative of Infant Mortality	Negative of Illiteracy	Negative of Log Pupil to Teacher Ratio	Immunization	Negative of Infant Mortality	Negative of Illiteracy	Negative of Log Pupil to Teacher Ratio
Party strength	Developing	gov_frac* exp	-	-***	-**	-*	-***	-***	-***	-***	-**	-*	-	0	0	0
		gov_frac* rev	-	-***	-***	-**	-***	-***	-***	-***	-**	-***	0	+	0	0
		party_age* exp	0	+*	-	+	+	+*	0	+	0	0	+***	0	0	+
		party_age* rev	0	+*	+*	+**	+**	+***	+*	+***	+	+	+***	0	0	+***
	Developed	gov_frac* exp	0	0	0	0	0	0	-**	0	N/A	-	-	-*	N/A	-**
		gov_frac* rev	0	0	0	0	0	0	-**	0	N/A	-	0	0	N/A	-***
		party_age* exp	-***	-*	-	-**	-	-***	0	-**	N/A	0	-	0	N/A	0
		party_age* rev	-***	-*	-	-**	-**	-**	0	-***	N/A	0	-**	-	N/A	+
Subordination	Developing	state_elect* exp	0	-***	-***	-	-***	-**	-	-*	-*	-	+**	+**	+**	+***
		state_elect* rev	0	-**	-***	-	-**	-*	-	-**	-	-	0	+*	+**	+***
		muni_elect* exp	0	0	-	0	0	-**	-*	-	-	-	0	0	0	+***
		muni_elect* rev	0	0	-	0	0	-**	-*	-	-	-	0	0	0	+***
	Developed	state_elect* exp	0	0	0	0	0	-*	0	-***	N/A	0	-**	-***	N/A	+**
		state_elect* rev	0	0	0	0	0	-***	0	-***	N/A	0	0	-**	N/A	+*
		muni_elect* exp	0	0	0	0	0	0	-*	-***	N/A	0	-**	-***	N/A	+***
		muni_elect* rev	+	+*	+	0	+	-	0	-***	N/A	-***	+	+	N/A	+***

*Note: Zeros represent coefficients with t-statistics smaller than unity; * significant at 10%; ** significant at 5%; *** significant at 1%*

- denotes non-robust results driven by influential observations (see section 5.1).