

1. Introduction

Modern economic literature has little doubt that economic decentralization affects the quality of the 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 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 capture of the local governments. In this case, strong administrative control of local by central authorities is important for 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 strength of national party systems is more important 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.³ This can be partly explained by the fact that it overlooked the importance of political institutions.

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

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

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 for economic growth, quality of government, and public goods provision. In developed countries, strong parties have two effects. On the one hand, consistent with Riker's theory, the fractionalization of governing parties impairs the results of decentralization for public goods provision. On the other hand, decreased age of main parties increases efficiency of decentralization because of higher political competition. We also 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).

The remainder of the paper is organized as follows. Section 2 presents hypotheses backed by theoretical discussion of the determinants of the effect of fiscal decentralization. Section 3 describes the data. Section 4 describes the methodology of the empirical analysis. In section 5, we present the results and discuss their robustness. In section 6, we summarize and interpret our empirical findings. Our conclusions follow in section 7.

2. Hypotheses

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 hypotheses. Riker argued that the strong party system is a more important source of political accountability than any administrative and constitutional arrangements. 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. Parties, in turn, are interested in extending their control over competent local politicians, so that their policies become associated with the party, and therefore, increase the number of party supporters. Thus, strong parties provide political incentives for local politicians to conduct efficient policies.⁴ It is important to note that strong party systems provide political incentives for local governments irrespective of whether they are appointed or

(1998) 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 This effect, however, may be attenuated by the weak link between national and regional parties when national parties do not have much influence over regional politicians and are not able to provide strong political incentives. Uslander (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.

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 and fractionalization of the government parties. The assumption behind the first measure is that older parties are stronger than younger ones. Higher age of the main parties indicates more stable party system important for career concerns. The assumption behind the second measure is that high fractionalization of the government parties means that there are many small relatively weak parties, while low fractionalization indicates that the government consists of a small number of strong parties.⁵ Literature on comparative politics stresses the systematic differences between party structures – fractionalization, in particular – in 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 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 analysis of the strength of party systems, thus, it is hard to check whether the average age of the 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 decline in the strength of their parties. 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 the government parties in both countries at that time. Thus, in these cases our measures adequately captured the change in party strength. Nonetheless, both of these measures are highly imperfect and do not reflect several important features of party systems that affect their strength.⁶

These considerations allow us to formulate the testable prediction of Riker's theory: Young age of the main parties and high fractionalization of the government parties reduce the efficiency of decentralization affecting economic growth, quality of government, and public goods provision.

⁵ The extreme case is a single party (e.g., Chinese Communist Party).

⁶ 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).

An excessively strong party system can, however, be an indication of low political competition. In this case a few parties (in the extreme case, only one party) dominate elections and constituencies can no longer influence the election outcome. Therefore, accountability of local governments is undermined and, 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 the party regardless of actual policies it implements, which also reduces accountability.⁷ These considerations point to the alternative hypothesis that the age of main parties and low government fractionalization may actually reduce the efficiency of decentralization.

The basic Downsian model of representative democracy takes the view public officials should be elected. There are different views in the literature, however, on whether elections of local officials help the outcomes of decentralization. Seabright (1996) assumes better political accountability of elected officials at the local compared to the central level. His conjecture motivates the 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. Under this assumption, the stronger the central governments' administrative control of the local officials, the stronger the political incentives of the local governments. Thus, the effect of decentralization on economic growth, quality of government, and public goods provision would be worse in the case of elected provincial and municipal executives compared to the case when they are appointed. This is certainly a strong assumption.⁸ 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. We test Seabright's and Blanchard and Shleifer's theories against each other.

3. Data

For our analysis we use data on political institutions, fiscal decentralization, government performance, economic growth, outcomes of public goods provision, and various control variables for up to 95 countries for the years 1975-2000.⁹ Not all the variables are available for all countries and all years: some regressions cover

⁷ Shachar (2003) studies the party loyalty of electorate.

⁸ See discussion in Bardhan (2002).

⁹ The list of countries that constitute our sample is given in Table A1 in appendix.

as few as 50 countries. The definitions and the sources of all variables are given in Table A2 in the 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 important information on the distribution of the decision-making authority between the levels of government, they provide an important source of information about the relative level of countries' fiscal decentralization.¹⁰ 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.¹¹

Political variables were taken from the *Database on Political Institutions* (Beck et al., 2001). To describe the administrative side of political centralization in a country we use dummy variables that tell whether municipal and state/provincial executives are elected or appointed. To characterize the party system we use measures of the age of the 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 MPs picked at random from governing parties belong to different parties). To check the robustness of our results we also use the fractionalizations of parliament (the probability that any two members of parliament picked at random belong to different parties) as an alternative measure of party strength.¹²

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 pupil-to-teacher ratio, illiteracy rate, infant mortality, and DPT immunization level from *World Development Indicators* by the World Bank.¹³ To measure economic growth we take changes in GDP per capita PPP.

¹⁰ An important shortcoming of these data is that they do not distinguish between state and municipal expenditures and revenues, because the breakdown of subnational revenues onto state and municipal is available only for a very limited number of countries.

¹¹ "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 collected in a local jurisdiction that goes to the local budget.

¹² The fractionalization of opposition parties is not a reliable measure of party strength because strong opposition parties may increase political uncertainty by shortening the expected horizon of the government party and, thus, undermine career concerns. In addition, fractionalization of opposition parties takes a value of zero in the case of a single party even though this is not a case of a weak party system.

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.

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.

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:

$$Y_i = \alpha_1 + \alpha_2 Polit_i + \alpha_3 Decentr_i + \alpha_4 Polit_i Decentr_i + \alpha_5 Control_i + \varepsilon_i \quad (1)$$

where Y_i is an index of corruption and governance quality for country i in year 2001.¹⁴ $Polit_i$ 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.¹⁵ First, we use the same regression model (1) in which Y_i stands for the logarithm of change in GDP per capita 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. 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

¹⁴ 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.

¹⁵ 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.

decentralization on economic growth. 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.

As influence of political institutions on the effect of fiscal decentralization might 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 influences:

$$Y_{it} = \alpha_i + \beta_1 Polit_{it} + \beta_2 Decentr_{it} + \beta_3 Polit_{it} Decentr_{it} + \beta_4 Control_{it} + \rho_t d_t + \varepsilon_{it} \quad (2)$$

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, α_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.

Influence of political institutions on the results of fiscal decentralization, as well as the quality of our data, might be different for developing and transition countries on the one hand, and developed countries on the other hand. Therefore, we estimate regression models (1) and (2) for subsamples of the members of the Development Assistance Committee of OECD plus Iceland and all other countries separately. In all the regressions we have excluded observations for socialist countries before the beginning of transition, as political processes and institutions in these countries seem to have different nature.

For the subsample of the developing 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).

5. Results

Fractionalization of government parties

Table 1 presents the cross-section results for developing and transition countries. In this subsample, fractionalization of government parties hampers the effect of decentralization on all indices of government quality except for Transparency International index of corruption.¹⁶ The effect of decentralization on the government quality indices changes significantly with growing fractionalization. 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

¹⁶ Here and henceforth, the results for revenue and expenditures decentralization are similar unless stated otherwise.

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 0.5 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 illiteracy of two percentage points, and a 5% decrease in pupil to teacher ratio.¹⁷ 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.¹⁸

Results for developed countries are presented in Table 2. The only significant result in cross-country regressions 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 two percentage points, while at a level of fractionalization higher than the mean by the same amount it leads to a decrease in immunization of five 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 80% 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.

Age of main parties

¹⁷ 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%.

¹⁸ 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.

Table 3 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.¹⁹ 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 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 deviation. 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.²⁰ A 10% increase in decentralization at 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 the 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%. From 70% to 90% of the developing countries have party age above a threshold that makes decentralization beneficial for the provision of public goods and economic growth.²¹

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

Table 4 presents results for developed countries. The age of main parties has effect opposite to the one in developing countries. Older parties hamper the effect of decentralization on all government quality indices except for quality of regulation index. At age of parties lower than the mean by one half of the standard deviation, a 10% increase in revenue decentralization leads to an increase in the government quality indices of approximately one half of their standard deviations on average, while the same change in expenditure decentralization leads to an increase of 15% 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 revenue decentralization leads to a less than 20% of SDs increase in the indices on average, while the same size increase in expenditure decentralization leads to a 15% of SDs decrease in the indices.²² To this date 90% of the developed countries have party age sufficiently young for revenue decentralization not to have negative effect on the quality of government; for expenditure decentralization this share is 50%.

¹⁹ Results for the share of subnational expenditures are significant only for government effectiveness index.

²⁰ Results for the share of subnational expenditures are significant only for economic growth.

²¹ At the mean age of parties, a 10% increase in decentralization decreases immunization by eight percentage points, increases infant mortality by two points and decreases long-term growth by 17%. Additional ten years for the main parties at the mean level of decentralization increase immunization by one percentage point, decrease infant mortality by two points and increase in economic growth by 3%.

²² At the average level of party age, increasing revenue decentralization leads to 30% of SDs increase in indices, while the same change in expenditure decentralization leads to almost no change.

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 expenditure decentralization at age of parties lower than the mean by one half of its 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 only by five hundredth of a percentage point and increases economic growth by 1%. The magnitude of the effect of revenue decentralization is approximately twice as high. A threshold level of party age above which decentralization has a negative effect on public goods and growth is such that 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 revenue decentralization on immunization level.

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 countries have decentralization below a threshold which makes the quality of government higher in the case of elected state executives.²³

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 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.²⁴

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. A threshold level of subnational expenditure share above which the quality of public goods provision (with the exception of immunization) in the short run is better for elected state executives compared to appointed is about 30%; only 15% of the developing countries satisfy this condition. A threshold for the effect on the level of immunization is 40% with less than 10% of the developing countries being above it.

²³ 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.

²⁴ 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%.

Table 6 presents results for developed countries. Elections of state executives do not affect decentralization outcomes in quality of government. The effect of decentralization on alleviation of infant mortality in the case of appointed state executives is significantly positive; and in the case of elected executives the effect is insignificant and very close to zero, with a statistically significant difference in slopes. The effect of decentralization on economic growth is significantly stronger in the case of appointed state executives.²⁵ A threshold level for below which infant mortality is better in the case of elected state executives is such that about one half of the countries are below the threshold. For growth this proportion is more than two thirds.

Panel regressions show that in developed countries 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 statistically 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.

Municipal executives appointed/elected

Cross-section results for the subsample of developing and transition countries are presented in Table 7. The effect of fiscal decentralization on immunization and economic growth is positive and insignificant for appointed municipal executives and negative and insignificant for the elected local executives with a significant difference in slopes.²⁶ 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.

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, but has a very strong significant negative effect on the pupil-to-teacher ratio in the case of appointed municipal executives: a 1% increase in subnational expenditure share increases pupil-to-teacher ratio by 26%.²⁷

The results for developed countries are presented in Table 8. The only two statistically significant results in the cross-section regressions are for the rule of law and infant mortality. In the case of elected municipal executives, the effect of decentralization on the rule-of-law 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. Rule of law is stronger in countries with elected municipal executives when revenue decentralization is above 29%, leaving more than one

²⁵ 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 infant mortality lower by 0.5 percentage points and a 13% higher growth rate at the mean value of decentralization.

²⁶ 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 only 8%). At the mean level of decentralization, immunization level is 8% lower and economic growth is 15% higher when the municipal executives are elected.

²⁷ 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 a panel regression meaningless.

half of the developed countries below the threshold level.²⁸ Infant mortality gives the opposite results. The effect of decentralization on infant mortality in cross-section of developed countries is positive significant in the case of appointed executives, and insignificant and very close to zero in the case of elected executives, with significant difference in slopes. The threshold level of decentralization above which infant mortality is lower with elected municipal executives is 24%, leaving more than one half of the developed countries below the threshold.

Panel regressions for developed countries show that 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 and 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 regression 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 subsections discuss robustness of our results with regard to sample selection, influential observations, choice of specifications, measurement error, 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

²⁸ The overall effect of municipal elections on the rule of law (at the mean of decentralization) is negative: the index is one half of its standard deviation lower in the case of elected municipal executives.

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.²⁹ The result that decentralization is less harmful in case of elected state executives for illiteracy level changes substantially and becomes insignificant with the exclusion of Israel.³⁰ 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 (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.

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.³¹

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 parties measures the party strength rather than the effect of these other institutions (not necessarily related to party strength), we tried each of the following three options. Each approach produced results very similar to the baseline. First, we included dummies for electoral rule and government system 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.

²⁹ 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.

³⁰ Classification of Israel as a developing country is arbitrary and it can be as well treated as a developed country. Inclusion of Israel in the subsample of developed countries does not lead to significant changes in the results with the exception of the results of panel regressions for the subsample of the developing countries that indicate that decentralization in the case of elected state executives is less harmful than in the case of appointed state officials, most of which become insignificant.

³¹ De Figueiredo and Weingast (2002) discuss global decentralization trends.

To account for possible remaining endogeneity of political institutions we used initial levels of the age of the main parties and government fractionalization instead of across-time averages for the analysis. Again, the results were similar to those in the baseline regressions with only few results losing significance.

Overall, sensitivity analysis suggests that our results are generally stable.³²

5.2. Endogeneity of decentralization

Since fiscal decentralization may be endogenous, we use instruments in our panel (for both subsamples) and cross-country regressions (for the subsample of the developing and transition countries).³³ 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 institutions.³⁴ 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 is 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.³⁵

Comparison of the results with and without instrumentation shows that the sign of coefficient is the same and magnitude increases 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. The Hausman test,

³² 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.

³³ See Strumpf and Oberholzer-Gee, 2002 and Fisman and Gatti, 2002 for a discussion of endogeneity of decentralization.

³⁴ 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.

³⁵ 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 break up of the former socialist states (Soviet Union, Yugoslavia, and Czechoslovakia). Although their resultant size was historically predetermined, there is a possibility that the break up and performance of these countries during transition are related in a way that introduces correlation between the geographical area and our dependent variables.

however, does not reject the hypothesis that both specifications are consistent.³⁶ 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.³⁷ 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 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 uninstrumented 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 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 would produce an upward bias in the coefficient of the interaction term between government fractionalization and fiscal decentralization; and the use of instruments would 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. We find very strong evidence that in developing countries high fractionalization of government parties and low age of main parties worsen the effect of fiscal decentralization on economic growth, government quality, and public goods.³⁸ 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, the effect of government fractionalization is weaker but in line with the effect in developing countries: fractionalization of government parties negatively affects the results of decentralization for public goods provision. In contrast, party age in developed countries has a negative effect on the results of decentralization on economic growth, government quality, and public goods provision. This difference in results highlights the importance of the level of civic development and democratic tradition for functioning of political institutions. Generally speaking, political

³⁶ The only exception is the regression of GDP growth with share of subnational revenues and party age, for which the null hypothesis is rejected.

³⁷ F-statistics are high enough for us to be able to compare the regressions for subnational revenues.

³⁸ Table A6 in the appendix summarizes all the results: it presents signs and significance of coefficient of the cross-term of fiscal decentralization and political institutions.

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 political accountability provided by other (non-political) institutions, e.g., 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. 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 for why party strength plays a smaller role in determining political competition in developing countries is that local politics is characterized by capture of local institutions, electoral institutions included. Russia in the 1990s provides a good example of how local and regional-level politicians can manage to eliminate political competition altogether with the help of control over local media and courts. 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 priori 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 and the local politicians' need for strong national party support during re-election that become the source of local incentives.

Therefore, two aspects of political centralization – higher party age and lower fractionalization – have different implication for political accountability depending on the level of democratic and civic development. Overall, Riker's theory is confirmed by the evidence and political competition is found to be more important in developed countries. It is worth noting that the results of cross-section and panel regressions for political centralization are consistent.

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 (see, for instance, Seabright, 1996). Elections of state executive officials worsen the effect of decentralization on quality of government, public 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.³⁹ As suggested by the recent literature on governance in developing countries, elections at the subnational levels do not result in higher local accountability in developing countries because of localism, relatively high capture, and provincial protectionism that lead to worse outcomes (Bardhan, 2002). Provincial protectionist policies and capture harm economic performance by creating negative economic 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 results of decentralization for growth and infant mortality from cross-section regressions and for immunization and infant mortality from panel regressions. One, however, can clearly see that elections do not bring about negative effect of decentralization on quality of governance. Municipal elections positively significantly affect the results of revenue decentralization for the rule of law; 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.

There is a dichotomy between the results for public goods provision in cross-section and panel regressions in developing countries. 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 these results for the following reasons. First of all, 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.⁴⁰ 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 roughly 3 percentage points.⁴¹

If, despite of poor explanatory power and unrobustness of panel results for subordination, one takes them seriously, the difference between the panel and cross-section results can arise either 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

³⁹ 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.

⁴⁰ 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.

⁴¹ It is in range from 1 to 9 percentage points.

and infant mortality when subnational officials are elected in the developed countries and superior outcomes in developing countries.

There is another, in our opinion, more plausible explanation of the difference in panel and cross-section results in developing countries. 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 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.

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 in developed countries may, however, also be an indication of insufficient political competition. Therefore, it is particularly important to ensure institutional possibilities for political party turnover in developed countries.

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 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). Thus, the strong political party system is an important condition of efficient decentralization.

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

Robust t-statistics in parenthesis

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

Table 2. 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	0.004 [0.02]	0.037 [0.96]	0.006 [0.89]	0.003 [0.41]					-0.546 [1.15]	0.030 [1.10]	-0.008 [0.87]			
CROSSTERM: Subnational expenditure share & Fractionalization of government parties	-1.124 [2.05]*	0.005 [0.06]	-0.011 [0.46]	0.001 [0.10]					-1.140 [1.48]	-0.096 [1.73]*	-0.087 [2.38]**			
Subnational revenue share					0.048 [0.15]	-0.012 [0.21]	0.009 [0.72]	0.002 [0.27]				-0.885 [1.99]**	0.058 [1.82]*	-0.004 [0.17]
CROSSTERM: Subnational revenue share & Fractionalization of government parties					-1.326 [2.40]**	-0.004 [0.03]	-0.008 [0.29]	0.010 [0.68]				-0.515 [0.77]	0.011 [0.18]	-0.078 [2.96]**
Fractionalization of government parties	24.600 [1.29]	1.836 [0.45]	-0.440 [0.44]	-0.004 [0.01]	21.615 [1.25]	2.541 [0.55]	-0.551 [0.53]	-0.222 [0.39]	30.328 [1.35]	3.116 [1.71]*	1.965 [1.82]*	7.558 [0.49]	-0.138 [0.10]	1.167 [1.80]*
Logarithm (GDP per capita)	-1.983 [0.42]	0.356 [0.42]	-0.231 [1.12]	-0.861 [5.31]***	-1.211 [0.27]	0.240 [0.27]	-0.244 [1.27]	-0.844 [5.36]***	79.914 [4.11]***	2.888 [3.01]***	-0.281 [0.65]	61.633 [3.73]***	3.009 [3.22]***	-1.277 [2.38]**
Democratic traditions	-0.845 [0.55]	0.266 [0.70]	0.074 [1.13]	0.025 [0.93]	-1.383 [0.88]	0.231 [0.57]	0.080 [1.19]	0.036 [1.11]	-13.838 [4.12]***	1.106 [4.18]***	0.143 [1.33]	-13.241 [3.94]***	1.049 [3.91]***	0.193 [1.92]*
Current level of democracy	-9.700 [1.35]	-1.090 [1.28]	0.277 [1.05]	-0.075 [0.58]	-12.617 [1.74]	-1.017 [1.23]	0.310 [1.08]	-0.045 [0.33]	-5.665 [0.72]	-0.008 [0.02]	0.029 [0.20]	0.401 [0.06]	-0.233 [0.53]	0.019 [0.13]
Logarithm (Fertility)				0.013 [0.80]				0.015 [0.85]	-39.182 [3.74]***	-1.973 [2.82]***	-1.031 [3.86]***	-33.196 [3.24]***	-2.358 [3.33]***	-0.734 [3.08]***
Logarithm (Population)	-0.180 [0.11]	0.003 [0.01]	0.031 [0.46]	0.054 [0.80]	-0.928 [0.56]	0.169 [0.80]	0.030 [0.40]	0.077 [1.40]						
Share of protestant	0.255 [2.54]**	0.017 [1.28]	0.0001 [0.02]	-0.0004 [0.17]	0.236 [2.34]**	0.020 [1.49]	-0.0001 [0.02]	-0.0002 [0.12]						
Ethnolinguistic fractionalization	51.714 [3.67]***	1.356 [0.40]	0.140 [0.33]	-0.132 [0.42]	56.151 [3.12]**	2.747 [0.56]	0.013 [0.02]	-0.214 [0.56]						
Latitude	-14.505 [0.77]	5.625 [1.04]	-0.658 [1.14]	-0.286 [0.49]	-15.927 [0.68]	5.749 [0.96]	-0.637 [0.95]	-0.200 [0.41]						
English legal origin	-27.950 [2.38]**	-0.265 [0.16]	-0.971 [2.39]**	-0.183 [0.89]	-30.447 [2.45]**	-0.806 [0.35]	-0.905 [2.05]*	-0.168 [0.74]						
French legal origin	-18.002 [1.07]	-0.079 [0.06]	-0.341 [0.67]	-0.160 [0.58]	-23.654 [1.41]	-1.360 [0.49]	-0.226 [0.39]	-0.068 [0.22]						
Fixed investments				0.008 [2.62]**				0.010 [3.08]**						
Openness				0.352 [1.13]				0.467 [1.41]						
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	0.81	0.62	0.94	0.81	0.8	0.63	0.94						

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 quality of government

Table 3. 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 or Logarithm (Pupil to Teacher Ratio)	GDP growth	Immunization	Negative of Infant Mortality	Negative or 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 or Logarithm (Pupil to Teacher Ratio)		
Subnational expenditure share	-0.033 [1.02]	-0.079 [0.99]	-0.078 [0.95]	-0.099 [1.18]					-3.367 [0.65]	-1.912 [0.67]	-0.008 [0.19]	-0.044 [0.73]								-0.849 [1.61]	0.281 [1.13]	-0.004 [0.96]		
CROSSTERM: Subnational expenditure share & Age of the main parties	1.023 [1.82]*	1.744 [1.16]	1.733 [1.16]	2.121 [1.35]					52.815 [0.78]	43.085 [1.17]	0.316 [0.60]	1.225 [1.73]*								31.749 [2.59]***	-2.739 [0.70]	0.146 [1.46]		
Subnational revenue share					-0.025 [1.22]	-0.058 [1.54]	-0.057 [1.74]*	-0.070 [2.29]**					-1.429 [1.26]	-0.919 [1.10]	-0.010 [0.55]	-0.049 [1.06]						-1.457 [2.20]**	0.068 [0.24]	-0.016 [1.77]*
CROSSTERM: Subnational revenue share & Age of the main parties					0.892 [1.89]*	1.658 [1.81]*	1.670 [2.18]**	1.880 [2.54]**					28.256 [1.87]*	31.737 [2.78]***	0.370 [1.67]	1.356 [3.61]***						49.541 [2.96]***	-4.888 [0.92]	0.480 [2.68]**
Age of the main parties	-12.350 [1.01]	-30.267 [0.94]	-30.852 [0.95]	-38.493 [1.13]	-5.118 [0.38]	-28.914 [1.31]	-30.460 [1.67]	-31.498 [1.69]	-840.67 [0.71]	-634.72 [1.02]	-5.48 [0.62]	-20.07 [1.80]*	-339.95 [1.34]	-314.04 [1.73]*	-4.69 [1.34]	-16.74 [2.69]**	-578.68 [2.31]**	-123.28 [1.41]	-4.82 [2.08]**	-609.27 [1.75]*	-139.64 [1.51]	-9.03 [2.78]**		
Logarithm (GDP per capita)	0.451 [3.87]***	0.119 [0.51]	0.314 [1.27]	0.230 [0.85]	0.479 [4.33]***	0.201 [1.45]	0.415 [2.93]***	0.338 [2.63]**	-0.108 [0.01]	21.183 [4.40]***	-0.158 [2.42]**	-0.608 [5.47]***	1.934 [0.55]	22.726 [7.63]***	0.169 [3.77]***	-0.530 [3.67]***	2.517 [0.96]	-1.110 [0.65]	0.005 [0.19]	4.560 [1.50]	-0.444 [0.23]	0.050 [1.14]		
Democratic traditions	0.076 [1.68]	0.062 [0.57]	0.184 [1.86]*	0.159 [1.47]	0.055 [2.29]**	0.011 [0.27]	0.138 [4.43]***	0.097 [2.76]**	2.327 [0.66]	4.317 [1.80]*	0.014 [0.44]	0.051 [0.89]	1.504 [1.12]	3.737 [2.17]**	0.014 [0.57]	0.050 [0.99]	-1.656 [2.35]**	-0.324 [0.66]	-0.011 [1.82]*	-1.463 [2.01]**	-0.355 [0.72]	-0.014 [1.85]*		
Current level of democracy	0.043 [2.17]**	0.081 [1.95]*	0.042 [1.33]	0.082 [2.35]**	0.039 [1.91]*	0.063 [1.64]	0.024 [1.02]	0.062 [2.52]**	0.756 [0.39]	0.211 [0.15]	0.018 [0.96]	0.061 [1.02]	-0.138 [0.14]	-0.203 [0.16]	0.018 [0.88]	0.035 [0.98]	30.354 [3.45]***	8.837 [2.14]**	0.180 [2.47]**	31.571 [3.71]***	9.079 [2.26]**	0.261 [3.37]**		
Logarithm (Fertility)												-0.517 [0.60]			-0.653 [1.63]		-84.450 [5.67]***	-35.556 [4.47]***	-0.328 [2.69]***	-79.905 [4.90]***	-28.861 [3.53]***	-0.131 [0.73]		
Logarithm (Population)	0.024 [0.18]	0.106 [0.42]	0.118 [0.50]	0.189 [0.74]	-0.008 [0.12]	-0.009 [0.10]	0.004 [0.05]	0.046 [0.56]	6.382 [0.43]	3.177 [0.35]	-0.018 [0.15]	0.125 [0.58]	0.078 [0.02]	-0.050 [0.01]	-0.011 [0.21]	0.142 [0.80]								
Share of protestant	0.006 [0.63]	0.009 [0.63]	0.002 [0.14]	-0.007 [0.47]	0.006 [0.76]	0.009 [0.70]	0.001 [0.13]	-0.009 [0.81]	-0.308 [0.75]	-0.220 [0.87]	-0.004 [1.29]	0.000 [0.01]	-0.257 [1.30]	-0.254 [1.36]	-0.006 [1.94]*	-0.006 [0.88]								
Ethnolinguistic fractionalization	0.404 [0.50]	0.569 [0.32]	0.977 [0.65]	1.719 [1.05]	0.386 [0.61]	0.282 [0.25]	0.733 [0.94]	1.359 [1.45]	21.512 [0.34]	-7.042 [0.19]	0.116 [0.21]	-0.287 [0.37]	2.842 [0.16]	-12.362 [0.81]	0.223 [0.70]	0.013 [0.02]								
Latitude	0.361 [0.22]	1.160 [0.30]	2.384 [0.59]	3.261 [0.80]	0.337 [0.23]	0.761 [0.29]	1.900 [0.84]	2.760 [1.34]	184.050 [0.62]	70.382 [0.45]	0.666 [0.29]	3.821 [0.98]	68.007 [1.02]	4.866 [0.12]	0.774 [0.83]	3.364 [1.24]								
English legal origin	-0.662 [1.34]	-0.860 [0.67]	-1.460 [1.31]	-1.929 [1.55]	.	.	.	.	11.662 [0.45]	-14.679 [0.58]	0.275 [2.19]**	-0.313 [0.62]	-4.626 [0.42]	-48.053 [5.44]**	0.174 [1.37]	-0.746 [2.93]***						
Socialist Legal origin	-0.280 [0.75]	-0.636 [0.63]	-0.653 [0.62]	-1.118 [1.02]	0.176 [0.46]	-0.419 [0.89]	0.231 [0.42]	0.092 [0.22]	21.888 [0.72]	10.393 [0.39]	0.494 [4.03]***	-1.656 [3.14]**	8.694 [1.02]	-19.111 [2.40]**	0.375 [3.18]***	-2.119 [6.47]***								
French legal origin	-0.438 [1.65]	-0.077 [0.14]	-0.661 [1.45]	-1.090 [1.75]**	0.037 [0.17]	0.327 [1.00]	0.386 [1.37]	0.297 [0.88]	28.675 [0.59]	5.588 [0.18]	0.237 [0.78]	0.093 [0.20]	-0.003 [0.00]	-34.646 [3.13]***	0.134 [0.72]	-0.337 [0.66]								
Fixed investments												-0.007 [0.39]			-0.001 [0.09]									
Openness												0.006 [1.72]*			0.005 [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 corruption and illiteracy

Table 4. 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	0.075 [1.80]	0.038 [3.36]**	0.030 [1.73]	0.022 [1.56]	0.014 [1.52]						-0.215 [0.53]	0.231 [4.27]***	0.010 [1.95]*				-0.178 [0.20]	0.004 [0.08]			
CROSSTERM: Subnational expenditure share & Age of the main parties	-1.073 [2.53]**	-0.193 [1.83]	-0.191 [1.15]	-0.397 [2.86]**	-0.179 [1.61]						0.375 [0.12]	-2.058 [3.19]**	-0.111 [3.12]**				-13.521 [1.52]	-0.064 [0.10]			
Subnational revenue share						0.106 [1.75]	0.048 [2.91]**	0.049 [2.15]*	0.037 [1.52]	0.019 [2.15]*				-0.003 [0.00]	0.348 [4.53]***	0.014 [1.40]			1.225 [1.23]	0.100 [1.84]*	
CROSSTERM: Subnational revenue share & Age of the main parties						-0.988 [2.39]**	-0.266 [2.48]**	-0.255 [1.77]	-0.355 [2.42]**	-0.169 [1.94]*				-0.136 [0.03]	-2.801 [3.68]***	-0.130 [1.93]			-22.721 [2.56]**	-0.559 [1.01]	
Age of the main parties	71.647 [2.54]**	4.537 [0.44]	11.517 [0.97]	31.529 [2.92]**	11.498 [1.23]	57.995 [2.25]**	8.642 [0.84]	13.735 [1.32]	24.519 [2.30]*	9.353 [1.22]	-44.24 [0.24]	47.99 [1.92]*	8.07 [8.35]***	-58.15 [0.34]	38.29 [1.48]	7.07 [5.23]***	783.966 [2.47]**	12.606 [0.53]	830.197 [2.99]***	24.753 [1.34]	
Logarithm (GDP per capita)	-7.364 [2.21]*	0.145 [0.08]	-1.205 [0.68]	-3.660 [2.29]*	-0.781 [0.62]	-7.540 [2.24]*	-0.278 [0.14]	-1.658 [0.98]	-3.526 [2.24]*	-0.771 [0.64]	-0.781 [0.10]	-0.441 [0.73]	-0.806 [9.10]***	-1.122 [0.14]	-1.449 [1.71]	-0.827 [8.13]***	61.304 [3.06]**	2.886 [2.83]***	37.176 [2.06]**	2.764 [2.77]***	
Democratic traditions	0.737 [2.24]*	-0.043 [0.23]	0.100 [0.57]	0.305 [1.93]**	0.107 [0.80]	0.775 [2.15]*	0.016 [0.08]	0.152 [0.84]	0.295 [1.79]	0.111 [0.83]	-0.704 [0.58]	0.217 [1.17]	0.022 [4.72]***	-0.733 [0.59]	0.410 [1.84]*	0.031 [4.21]***	-7.172 [1.92]*	1.407 [4.73]***	-7.272 [2.08]**	1.313 [4.84]***	
Current level of democracy	-1.557 [1.83]	-0.120 [0.36]	0.023 [0.06]	-0.669 [2.05]*	-0.308 [1.22]	-1.140 [1.59]	-0.004 [0.01]	0.132 [0.44]	-0.508 [1.76]	-0.233 [1.06]	-6.847 [0.94]	-2.351 [2.51]**	-0.257 [5.72]***	-7.317 [1.01]	-1.251 [1.25]	-0.210 [2.78]**	-6.666 [0.78]	-0.034 [0.07]	-6.742 [0.84]	-0.472 [0.89]	
Logarithm (Fertility)																0.281 [1.20]	0.355 [1.65]	-25.802 [2.45]**	-1.746 [2.43]**	-19.448 [1.88]*	-1.946 [2.69]***
Logarithm (Population)	-0.410 [3.42]**	-0.098 [1.53]	-0.090 [1.48]	-0.126 [2.68]**	-0.091 [2.40]**	-0.458 [3.97]***	-0.089 [1.39]	-0.099 [1.96]*	-0.154 [3.30]**	-0.098 [2.78]**	0.166 [0.08]	-0.139 [0.80]	0.017 [0.44]	-0.351 [0.19]	0.070 [0.37]	0.031 [0.90]					
Share of protestant	0.030 [4.35]***	-0.003 [1.10]	-0.001 [0.25]	0.012 [3.50]**	0.001 [0.56]	0.025 [3.52]***	-0.004 [0.93]	-0.003 [0.66]	0.010 [2.33]*	0.000 [0.18]	0.251 [1.64]	0.019 [2.25]*	-0.001 [0.56]	0.244 [1.53]	0.021 [1.66]	-0.001 [1.66]					
Ethnolinguistic fractionalization	-0.515 [0.29]	0.835 [1.39]	-0.060 [0.07]	-0.117 [0.15]	0.270 [0.54]	-0.699 [0.32]	0.269 [0.43]	-0.521 [0.59]	-0.061 [0.07]	0.223 [0.47]	50.862 [2.38]**	3.863 [2.11]*	-0.367 [4.48]***	49.151 [2.09]*	3.002 [1.12]	-0.395 [3.25]**					
Latitude	-8.876 [1.85]	2.491 [1.49]	-0.057 [0.03]	-3.991 [2.23]*	-0.970 [0.71]	-6.587 [1.39]	2.336 [1.19]	0.464 [0.25]	-2.660 [1.31]	-0.569 [0.43]	7.557 [0.27]	7.097 [4.19]***	-0.411 [1.32]	7.126 [0.22]	8.171 [3.21]**	-0.383 [1.09]					
English legal origin	-0.710 [1.09]	0.378 [1.78]	0.190 [0.64]	-0.607 [2.19]*	-0.250 [1.01]	-0.087 [1.11]	0.508 [1.59]	0.461 [1.41]	-0.296 [0.77]	-0.140 [0.53]	-17.833 [1.17]	-0.187 [0.25]	-0.130 [1.20]	-15.723 [0.89]	0.945 [0.73]	-0.105 [0.68]					
French legal origin	1.71 [1.59]	0.08 [0.12]	0.45 [0.66]	0.60 [1.00]	-0.15 [0.29]	2.50 [1.57]	0.51 [0.63]	0.98 [1.23]	0.87 [1.17]	-0.02 [0.03]	-9.066 [0.51]	0.499 [0.58]	-0.002 [0.02]	-6.011 [0.27]	2.840 [1.96]*	0.082 [0.45]					
Fixed investments																0.013 [1.15]					
Openness																0.007 [3.71]***					
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	0.89	0.77	0.55	0.86	0.86	0.89	0.7	0.59	0.86	0.86	0.74	0.95	0.99	0.73	0.94	0.99					

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

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 [1.22]	0.054 [1.38]	0.047 [1.02]	0.002 [0.06]	0.020 [0.56]					
CROSSTERM: Subnational expenditure share & Elected state executives (Difference in effects)	-0.052 [0.71]	-0.063 [2.89]***	-0.077 [3.40]***	-0.039 [1.48]	-0.056 [2.82]***					
Subnational revenue share (Effect for appointed state executives)						0.055 [1.10]	0.057 [1.50]	0.056 [1.26]	0.012 [0.46]	0.0296 [0.94]
CROSSTERM: Subnational revenue share & Elected state executives (Difference in effects)						-0.062 [0.61]	-0.078 [2.37]**	-0.095 [2.99]***	-0.047 [1.71]	-0.068 [2.67]**
Elected state executives	-0.100 [0.10]	0.954 [2.07]**	1.414 [2.77]**	0.664 [1.26]	0.907 [2.01]*	-0.065 [0.05]	0.944 [1.76]*	1.314 [2.03]*	0.479 [1.24]	0.726 [1.42]
Logarithm (GDP per capita)	1.995 [1.58]	0.833 [3.82]***	0.645 [2.72]**	0.500 [2.60]**	0.634 [3.21]***	2.039 [1.67]	0.944 [3.51]***	0.797 [2.68]**	0.599 [3.45]***	0.752 [2.93]***
Democratic traditions	0.120 [0.88]	-0.018 [0.26]	-0.096 [1.17]	0.115 [2.78]**	0.015 [0.26]	0.148 [1.20]	-0.003 [0.06]	-0.083 [1.10]	0.112 [3.69]***	0.018 [0.30]
Current level of democracy	-0.088 [1.01]	0.021 [0.50]	0.081 [1.65]	0.004 [0.20]	0.056 [1.67]	-0.065 [0.73]	0.031 [0.58]	0.088 [1.38]	0.0016 [0.06]	0.056 [1.19]
Logarithm (Population)	-0.352 [0.91]	-0.181 [0.93]	-0.204 [0.90]	-0.007 [0.04]	-0.063 [0.34]	-0.214 [0.90]	-0.158 [0.95]	-0.212 [1.09]	-0.044 [0.40]	-0.090 [0.61]
Share of protestant	0.017 [1.11]	0.015 [3.10]***	0.021 [5.22]***	0.015 [3.19]***	0.009 [2.41]**	0.021 [1.29]	0.014 [2.13]**	0.018 [1.89]*	0.011 [2.36]**	0.005 [0.73]
Ethnolinguistic fractionalization	-0.878 [0.38]	-0.804 [1.32]	-1.074 [1.46]	-0.534 [1.03]	-0.317 [0.56]	-0.575 [0.27]	-0.601 [0.91]	-0.904 [1.29]	-0.557 [1.42]	-0.291 [0.49]
Latitude	0.529 [0.15]	-1.301 [0.72]	-2.746 [1.14]	0.408 [0.28]	-0.530 [0.33]	0.682 [0.18]	-1.508 [0.69]	-2.767 [0.90]	0.612 [0.42]	-0.424 [0.20]
English legal origin	1.271 [1.14]	0.537 [1.51]	0.805 [2.08]**	-0.105 [0.32]	-0.067 [0.21]	0.000 [.]	0.275 [0.74]	0.000 [.]	-0.030 [0.10]	0.000 [.]
Socialist legal origin	0.125 [0.10]	-0.092 [0.28]	0.097 [0.32]	-0.064 [0.19]	-0.247 [0.91]	-0.796 [0.78]	0.000 [.]	-0.419 [1.07]	0.000 [.]	-0.072 [0.18]
French legal origin	1.576 [1.32]	0.701 [2.33]**	1.053 [3.28]***	0.297 [0.98]	0.059 [0.20]	0.496 [0.28]	0.712 [1.38]	0.614 [1.77]*	0.563 [1.04]	0.385 [1.04]
Observations	31	39	39	39	39	29	37	37	37	37
Subnational expenditure share in adjacent regressions (Effect for elected state executives)	0.013 [0.20]	-0.010 [0.29]	-0.030 [0.87]	-0.037 [0.90]	-0.036 [1.12]					
Subnational revenue share in adjacent regressions (Effect for elected state executives)						-0.007 [0.09]	-0.021 [0.71]	-0.039 [1.34]	-0.036 [1.43]	-0.038 [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 [0.28]	2.288 [1.22]	0.930 [0.88]	0.022 [1.25]	0.073 [1.01]						-1.029 [1.46]	-0.475 [2.28]**	-0.085 [1.74]*	-0.031 [3.03]***				
CROSSTERM: Subnational expenditure share & Elected state executives (Difference in effects)	-1.592 [1.36]	-2.698 [1.96]*	-1.682 [1.85]*	-0.017 [1.17]	-0.105 [2.04]**						2.068 [2.50]**	0.659 [2.10]**	0.146 [2.21]**	0.035 [3.04]***				
Subnational revenue share (Effect for appointed state executives)						0.418 [0.54]	1.858 [1.46]	0.875 [1.03]	0.016 [1.14]	0.058 [0.94]					-0.378 [0.38]	-0.468 [1.97]**	-0.199 [2.66]***	-0.041 [1.99]**
CROSSTERM: Subnational revenue share & Elected state executives (Difference in effects)						-1.578 [1.36]	-3.074 [2.00]**	-1.798 [1.52]	-0.024 [1.16]	-0.134 [1.93]*					0.564 [0.63]	0.412 [1.95]*	0.127 [2.25]**	0.054 [3.83]***
Elected state executives	25.325 [1.21]	54.077 [1.84]*	30.283 [1.52]	0.487 [1.56]	2.016 [2.05]**	17.565 [1.02]	47.246 [1.70]*	25.304 [1.20]	0.526 [1.54]	1.965 [1.62]	-83.985 [3.69]***	-19.691 [1.90]*	-3.915 [1.95]*	-1.123 [3.28]***	-30.881 [1.98]**	-9.155 [1.66]*	-1.538 [1.27]	-1.117 [4.18]***
Logarithm (GDP per capita)	5.183 [1.23]	30.444 [2.93]***	20.643 [3.08]***	0.213 [2.19]**	-0.470 [1.69]**	6.123 [1.49]	31.938 [3.56]***	21.317 [3.01]***	0.230 [2.52]**	-0.231 [0.63]	-11.126 [3.26]***	0.226 [0.11]	-2.667 [7.64]***	-0.006 [0.12]	-8.377 [1.40]	2.417 [0.96]	-1.784 [3.13]***	-0.107 [0.97]
Democratic traditions	0.417 [0.25]	1.838 [0.51]	0.228 [0.12]	-0.012 [0.37]	-0.069 [0.76]	0.553 [0.37]	2.215 [0.74]	0.335 [0.17]	-0.011 [0.36]	-0.064 [0.67]	0.962 [1.58]	0.856 [2.14]**	0.136 [1.93]*	-0.006 [0.70]	0.405 [0.54]	0.532 [1.31]	0.033 [0.43]	-0.012 [0.77]
Current level of democracy	-0.399 [0.48]	-2.227 [0.98]	-0.858 [0.59]	0.001 [0.05]	-0.055 [0.50]	-0.488 [0.66]	-1.637 [0.89]	-0.756 [0.58]	0.009 [0.48]	-0.034 [0.52]	-4.803 [0.52]	24.799 [4.79]***	5.544 [5.76]***	0.028 [0.20]	-4.411 [0.45]	22.826 [4.15]***	5.827 [5.54]***	-0.075 [0.51]
Logarithm (Fertility)					-2.270 [1.95]**					-1.743 [2.59]**	-53.714 [3.91]***	-40.314 [5.65]***	-10.493 [8.12]***	0.080 [0.37]	-63.980 [3.39]***	-36.581 [4.49]***	-9.161 [5.51]***	0.086 [0.22]
Logarithm (Population)	-2.732 [0.57]	-9.590 [1.00]	-2.149 [0.40]	-0.111 [1.33]	-0.226 [0.66]	-3.034 [1.11]	-5.818 [1.02]	-1.330 [0.36]	-0.062 [1.14]	-0.038 [0.17]								
Share of protestant	-0.107 [0.83]	-0.109 [0.37]	0.235 [0.76]	-0.004 [1.46]	0.003 [0.40]	-0.119 [0.99]	-0.171 [0.64]	0.173 [0.58]	-0.005 [1.58]	-0.003 [0.42]								
Ethnolinguistic fractionalization	-21.091 [1.43]	-61.157 [1.99]*	-23.703 [1.28]	-0.255 [0.76]	-1.405 [1.45]	-21.879 [1.88]*	-55.302 [2.29]**	-19.204 [1.11]	-0.177 [0.58]	-1.199 [1.36]								
Latitude	7.762 [0.14]	-113.610 [0.88]	-45.449 [0.71]	-0.640 [0.59]	-2.402 [0.58]	1.686 [0.05]	-87.267 [0.95]	-43.174 [0.93]	-0.179 [0.22]	-1.002 [0.34]								
English legal origin	14.159 [1.37]	-6.085 [0.35]	12.196 [0.79]	0.405 [2.50]**	0.434 [0.70]	1.653 [0.19]	-30.597 [1.80]*	-17.307 [1.33]	0.382 [2.02]**	0.343 [0.44]								
Socialist legal origin	18.605 [1.39]	-6.096 [0.24]	11.672 [0.63]	0.378 [1.57]	-2.871 [2.60]**	5.703 [0.66]	-27.358 [1.76]*	-14.963 [1.27]	0.321 [1.92]*	-2.904 [3.88]***								
French legal origin	6.952 [0.68]	-11.606 [0.61]	7.532 [0.50]	0.130 [0.77]	-0.142 [0.40]	-6.805 [0.97]	-35.564 [1.66]	-21.510 [2.06]**	0.096 [0.59]	-0.335 [0.72]								
Fixed investments					0.041 [1.58]					0.035 [2.12]**								
Openness					0.001 [0.07]					0.001 [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 [1.15]	-0.410 [0.26]	-0.752 [0.83]	0.005 [0.32]	-0.032 [0.78]						1.038 [2.50]**	0.184 [0.75]	0.061 [1.43]	0.005 [0.97]				
Subnational revenue share in adjacent regressions (Effect for elected state executives)						-1.159 [1.38]	-1.216 [1.19]	-0.922 [1.31]	-0.008 [0.52]	-0.076 [2.09]**					0.186 [0.30]	-0.056 [0.25]	-0.072 [1.20]	0.013 [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)	-0.255 [0.66]	0.210 [3.46]***	0.007 [0.48]	0.008 [0.86]					0.705 [1.01]	0.131 [3.19]***	-0.071 [2.66]***			
CROSSTERM: Subnational expenditure share & Elected state executives (Difference in effects)	0.155 [0.41]	-0.176 [2.96]**	-0.004 [0.30]	-0.007 [0.93]					-2.010 [2.35]**	-0.203 [4.10]***	0.082 [2.50]**			
Subnational revenue share (Effect for appointed state executives)					-0.384 [0.81]	0.160 [1.81]	0.019 [0.73]	0.014 [1.85]				-0.650 [0.68]	0.113 [2.59]***	-0.113 [2.09]**
CROSSTERM: Subnational revenue share & Elected state executives (Difference in effects)					0.296 [0.69]	-0.165 [2.12]*	-0.010 [0.52]	-0.012 [2.46]**				-0.672 [0.62]	-0.127 [2.49]**	0.080 [1.65]*
Elected state executives	-19.429 [1.71]	5.388 [2.37]**	-0.065 [0.17]	0.325 [1.16]	-21.638 [2.04]**	4.230 [1.85]*	0.046 [0.10]	0.400 [2.26]**	-0.059 [0.01]	3.601 [4.45]***	0.000 [.]	-17.692 [1.98]**	1.984 [3.06]***	0.000 [.]
Logarithm (GDP per capita)	0.342 [0.05]	1.427 [1.76]	-0.224 [0.86]	-0.889 [5.20]***	0.205 [0.03]	1.164 [1.22]	-0.215 [0.82]	-0.889 [6.38]***	87.780 [3.59]***	0.206 [0.21]	-0.018 [0.04]	77.859 [3.46]***	0.698 [0.68]	-0.675 [1.47]
Democratic traditions	-1.112 [1.19]	0.323 [1.54]	0.039 [0.91]	0.020 [1.05]	-1.346 [1.57]	0.422 [1.78]	0.052 [1.36]	0.026 [1.77]	-22.455 [6.08]***	1.904 [7.53]***	-0.002 [0.02]	-21.393 [5.68]***	1.748 [6.99]***	-0.064 [0.62]
Current level of democracy	0.674 [0.11]	-2.752 [2.84]**	0.259 [1.23]	-0.233 [1.47]	0.321 [0.05]	-1.972 [1.71]	0.265 [1.02]	-0.247 [2.09]*	-0.620 [0.08]	0.288 [0.74]	-0.180 [0.93]	-1.015 [0.14]	-0.443 [1.14]	0.232 [1.24]
Logarithm (Fertility)				0.192 [0.55]			0.170 [0.57]	0.170 [0.17]	-47.619 [4.72]***	-1.922 [2.91]***	-0.519 [1.61]	-41.706 [4.05]***	-1.856 [2.77]***	-0.624 [2.11]**
Logarithm (Population)	1.299 [0.91]	-0.468 [1.93]*	0.050 [0.68]	0.023 [0.33]	1.181 [0.81]	-0.181 [0.69]	0.035 [0.36]	0.032 [0.68]						
Share of protestant	0.160 [1.04]	0.009 [0.68]	0.000 [0.12]	0.000 [0.15]	0.155 [1.05]	0.018 [1.09]	0.000 [0.11]	0.001 [0.29]						
Ethnolinguistic fractionalization	49.048 [3.64]***	0.937 [0.47]	0.108 [0.25]	-0.166 [0.70]	49.852 [3.35]***	2.041 [0.64]	-0.127 [0.25]	-0.233 [1.00]						
Latitude	-8.390 [0.53]	4.372 [1.00]	-0.788 [0.94]	-0.324 [0.57]	-7.703 [0.46]	5.268 [0.92]	-0.967 [1.19]	-0.421 [0.74]						
English legal origin	-16.896 [1.22]	-0.479 [0.48]	-0.586 [2.49]**	-0.183 [0.92]	-17.445 [1.21]	-0.998 [0.88]	-0.488 [1.97]*	-0.153 [0.87]						
French legal origin	-17.419 [1.05]	1.554 [1.30]	-0.361 [0.81]	-0.095 [0.40]	-20.216 [1.13]	1.455 [0.87]	-0.078 [0.16]	0.003 [0.01]						
Fixed investments				0.009 [0.53]			0.012 [0.68]	0.012 [0.68]						
Openness				0.009 [3.32]**			0.010 [5.06]***	0.010 [5.06]***						
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)	-0.100 [0.73]	0.033 [0.83]	0.003 [0.38]	0.001 [0.25]					-1.306 [2.44]**	-0.072 [2.60]***	0.012 [0.97]			
Subnational revenue share in adjacent regressions (Effect for elected state executives)					-0.088 [0.54]	-0.005 [0.09]	0.009 [0.71]	0.002 [0.31]				-1.322 [2.97]***	-0.014 [0.49]	-0.032 [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

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

	Public Goods and Growth (Cross section) \pm										Public Goods (Panel)							
	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 or Logarithm (Pupil to Teacher Ratio)	GDP growth	Immunization	Negative of Infant Mortality	Negative of illiteracy	Negative or Logarithm (Pupil to Teacher Ratio)	Immunization	Negative of Infant Mortality	Negative of illiteracy	Negative or Logarithm (Pupil to Teacher Ratio)
Subnational expenditure share (Effect for appointed municipal executives)	0.360 [0.24]	2.061 [1.29]	0.940 [0.90]	0.033 [1.65]	0.082 [1.60]						-0.509 [0.08]	0.749 [0.69]	0.894 [0.87]	-0.268 [3.88]***				
CROSSTERM: Subnational expenditure share & Elected municipal execut-s (Difference in effects)	-2.050 [1.96]*	-1.858 [1.54]	-1.370 [1.34]	-0.024 [1.37]	-0.091 [2.21]**						0.803 [0.13]	-0.588 [0.54]	-0.864 [0.83]	0.268 [3.88]***				
Subnational revenue share (Effect for appointed municipal executives)						0.677 [0.63]	2.041 [1.46]	1.309 [1.25]	0.030 [1.73]*	0.058 [1.44]					66.901 [0.16]	0.156 [0.37]	1.329 [0.65]	-0.156 [4.09]***
CROSSTERM: Subnational revenue share & Elected municipal execut-s (Difference in effects)						-1.874 [1.90]*	-2.145 [1.32]	-1.743 [1.23]	-0.030 [1.39]	-0.104 [2.08]**					-67.418 [0.16]	-0.280 [0.60]	-1.436 [0.70]	0.166 [4.23]***
Elected municipal executives	25.876 [1.17]	48.619 [1.84]**	25.451 [1.24]	0.603 [1.73]**	1.745 [1.99]**	21.534 [1.03]	50.914 [1.75]**	32.999 [1.29]	0.631 [1.76]**	1.722 [1.96]**	-32.146 [0.17]	29.257 [0.76]	27.336 [0.86]	-8.291 [3.83]***	1732.927 [0.16]	14.447 [0.95]	37.155 [0.72]	0.000 []
Logarithm (GDP per capita)	0.611 [0.11]	21.597 [4.10]***	16.317 [4.38]***	0.189 [2.38]**	-0.496 [2.33]**	3.162 [0.77]	22.990 [3.98]***	17.621 [3.41]***	0.199 [2.29]**	-0.425 [2.15]**	22.701 [3.24]***	19.138 [6.06]***	1.502 [1.83]*	0.061 [0.84]	37.769 [0.37]	18.054 [6.03]***	1.810 [2.13]**	0.018 [0.25]
Democratic traditions	0.212 [0.11]	3.380 [1.71]**	0.862 [0.64]	-0.012 [0.42]	-0.023 [0.42]	0.565 [0.38]	3.731 [2.33]**	0.780 [0.59]	-0.003 [0.11]	0.004 [0.09]	1.112 [0.39]	0.615 [0.44]	-2.283 [6.88]***	0.028 [0.62]	3.870 [0.21]	1.013 [0.68]	-2.075 [5.74]***	-0.028 [0.60]
Current level of democracy	1.099 [0.60]	-2.138 [1.24]	-0.201 [0.14]	-0.005 [0.24]	-0.003 [0.04]	0.082 [0.08]	-2.331 [1.67]	-0.802 [0.53]	-0.004 [0.22]	0.011 [0.21]	0.021 [3.06]***	0.253 [4.12]***	-0.163 [7.24]***	-0.005 [5.20]***	0.376 [0.03]	0.139 [3.91]**	-0.196 [4.99]***	-0.001 [5.52]***
Logarithm (Fertility)					-1.224 [2.18]**					-0.895 [2.10]**	-43.837 [3.06]***	-26.681 [4.12]***	-11.221 [7.24]***	-0.695 [5.20]***	-7.996 [0.03]	-25.822 [3.91]**	-9.573 [4.99]***	-0.773 [5.52]***
Logarithm (Population)	4.783 [0.55]	-5.266 [0.72]	1.389 [0.26]	-0.097 [0.98]	-0.005 [0.02]	2.167 [0.51]	-3.608 [0.85]	1.018 [0.29]	-0.044 [0.73]	0.215 [1.42]								
Share of protestant	0.239 [1.03]	-0.136 [0.63]	0.211 [0.67]	-0.001 [0.34]	0.010 [1.26]	0.109 [0.59]	-0.189 [0.69]	0.142 [0.37]	-0.0002 [0.05]	0.006 [0.81]								
Ethnolinguistic fractionalization	-6.276 [0.30]	-42.352 [1.63]	-12.566 [0.65]	-0.291 [0.77]	-1.220 [1.58]	-17.305 [1.16]	-44.222 [1.83]**	-14.502 [0.64]	-0.282 [0.79]	-1.075 [1.75]**								
Latitude	80.661 [0.91]	-33.045 [0.41]	1.408 [0.03]	-0.320 [0.34]	0.849 [0.33]	55.913 [1.06]	-29.720 [0.56]	-4.208 [0.10]	0.042 [0.07]	2.449 [1.16]								
English legal origin	11.135 [1.22]	-9.503 [1.06]	10.890 [0.99]	0.339 [1.57]	0.023 [0.03]	14.317 [0.97]	-31.724 [1.52]	-11.014 [0.52]	0.419 [1.40]	0.493 [0.70]								
Socialist legal origin	15.755 [0.83]	-7.577 [0.39]	10.072 [0.61]	0.171 [0.46]	-2.817 [3.05]***	14.283 [1.23]	-26.277 [2.82]***	-15.033 [1.80]**	0.327 [2.28]**	-2.085 [6.24]***								
French legal origin	19.076 [1.15]	-10.113 [0.59]	9.834 [0.72]	0.035 [0.12]	-0.339 [0.51]	16.779 [0.97]	-30.735 [1.68]**	-14.086 [0.77]	0.215 [0.88]	0.442 [0.64]								
Fixed investments					0.028 [1.22]					0.028 [1.87]**								
Openness					0.0004 [0.07]					0.003 [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 (Effect for elected municipal executives)	-1.690 [1.10]	0.203 [0.16]	-0.431 [0.44]	0.010 [0.59]	-0.008 [0.20]						0.293 [0.82]	0.1605 [0.98]	0.030 [0.71]	0.0003 [0.09]				
Subnational revenue share in adjacent regressions (Effect for elected municipal executives)						-1.197 [1.63]	-0.104 [0.14]	-0.434 [0.62]	0.000 [0.00]	-0.045 [1.57]					-0.518 [0.14]	-0.124 [0.59]	-0.108 [1.64]	0.010 [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; \pm 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)						
	Rule of Law 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 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 [0.31]		0.217 [0.59]	0.128 [2.42]**	0.001 [0.06]	-0.004 [0.62]					1.283 [1.20]	0.0004 [0.06]	-0.173 [3.67]***			
CROSSTERM: Subnational expenditure share & Elected municipal execut-s (Difference in effects)	0.009 [0.42]		-0.459 [1.47]	-0.090 [2.25]*	-0.008 [0.56]	0.007 [0.82]					-2.255 [2.09]**	-0.004 [0.61]	0.179 [3.69]***			
Subnational revenue share (Effect for appointed municipal executives)		-0.026 [1.88]					0.051 [0.11]	0.083 [1.24]	0.020 [0.76]	-0.004 [0.78]				-2.460 [2.24]**	-0.015 [1.82]*	-0.274 [4.05]***
CROSSTERM: Subnational revenue share & Elected municipal execut-s (Difference in effects)		0.027 [1.91]*					-0.200 [0.55]	-0.096 [2.35]**	-0.019 [1.61]	0.009 [1.31]				1.864 [1.52]	0.019 [2.07]**	0.265 [3.92]***
Elected municipal executives	-0.470 [0.78]	-0.804 [1.97]*	0.926 [0.12]	2.297 [2.45]**	0.182 [0.94]	0.127 [1.55]	-6.054 [0.56]	2.152 [2.75]**	0.293 [1.53]	0.140 [2.00]						
Logarithm (GDP per capita)	-0.303 [1.05]	-0.352 [1.36]	-2.728 [0.34]	0.908 [0.74]	-0.546 [1.45]	-0.993 [10.03]***	-1.639 [0.19]	0.770 [0.60]	-0.417 [1.10]	-1.017 [10.90]***	72.979 [3.17]***	-0.057 [0.52]	0.643 [1.23]	61.496 [3.15]***	-0.035 [0.32]	-0.535 [1.31]
Democratic traditions	0.014 [0.28]	-0.010 [0.52]	-1.484 [1.11]	0.416 [1.18]	0.045 [0.93]	0.040 [7.68]***	-1.677 [1.09]	0.456 [1.28]	0.051 [1.15]	0.045 [11.26]***	-17.448 [5.50]***	0.104 [4.53]***	0.065 [0.59]	-17.959 [5.23]***	0.086 [3.69]***	-0.035 [0.40]
Current level of democracy	-0.271 [1.28]	-0.372 [6.71]***	-11.361 [2.03]*	-1.218 [3.06]**	0.160 [1.05]	-0.011 [0.38]	-10.74 [1.47]	-0.741 [1.24]	0.151 [1.09]	0.003 [0.16]	-11.450 [4.04]***	0.006 [4.46]***	0.141 [0.95]	-3.818 [3.82]***	-0.025 [4.51]***	0.079 [3.30]***
Logarithm (Fertility)						0.571 [3.19]**				0.642 [4.38]***	-39.608 [4.04]***	-0.304 [4.46]***	-0.302 [0.95]	-39.777 [3.82]***	-0.307 [4.51]***	-0.801 [3.30]***
Logarithm (Population)	-0.050 [2.35]*	-0.028 [1.08]	0.847 [0.33]	-0.225 [0.61]	0.160 [1.36]	0.028 [0.27]	0.472 [0.19]	-0.002 [0.01]	0.098 [0.75]	0.024 [0.37]						
Share of protestant	0.001 [0.50]	0.001 [0.54]	0.272 [1.73]	0.010 [0.58]	0.002 [0.53]	0.001 [0.62]	0.277 [1.59]	0.016 [0.80]	0.002 [0.49]	0.001 [0.72]						
Ethnolinguistic fractionalization	0.448 [4.66]***	0.346 [1.82]	50.629 [3.39]***	1.377 [0.42]	0.324 [0.61]	0.135 [0.98]	49.69 [2.78]**	2.757 [0.62]	0.154 [0.21]	0.074 [0.88]						
Latitude	-0.278 [1.10]	-0.264 [1.80]	-1.111 [0.05]	4.850 [1.04]	-0.474 [0.49]	0.001 [0.00]	2.063 [0.10]	5.390 [0.96]	-0.740 [0.81]	0.053 [0.23]						
English legal origin	-0.150 [1.05]	-0.178 [1.39]	-17.564 [1.14]	-1.005 [0.64]	-0.780 [2.24]*	-0.394 [3.17]**	-16.116 [0.97]	-1.646 [0.93]	-0.646 [1.62]	-0.393 [3.43]**						
French legal origin	-0.651 [1.66]	-0.881 [4.21]***	-15.717 [0.89]	0.629 [0.45]	-0.668 [1.32]	-0.101 [0.51]	-14.00 [0.65]	0.006 [0.00]	-0.325 [0.45]	-0.058 [0.45]						
Fixed investments						-0.030 [0.59]				-0.035 [0.95]						
Openness						0.004 [1.39]				0.003 [1.53]						
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	0.87	0.92	0.80	0.84	0.62	0.98	0.77	0.82	0.65	0.99						
Subnational expenditure share in adjacent regressions (Effect for elected municipal executives)	0.002 [0.60]		-0.242 [0.99]	0.038 [0.89]	-0.007 [0.63]	0.002 [0.76]					-0.972 [2.15]**	-0.004 [1.47]	0.006 [0.65]			
Subnational revenue share in adjacent regressions (Effect for elected municipal executives)		0.001 [0.48]					-0.149 [0.65]	-0.013 [0.20]	0.000 [0.02]	0.005 [1.71]				-0.596 [1.32]	0.003 [1.10]	-0.009 [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

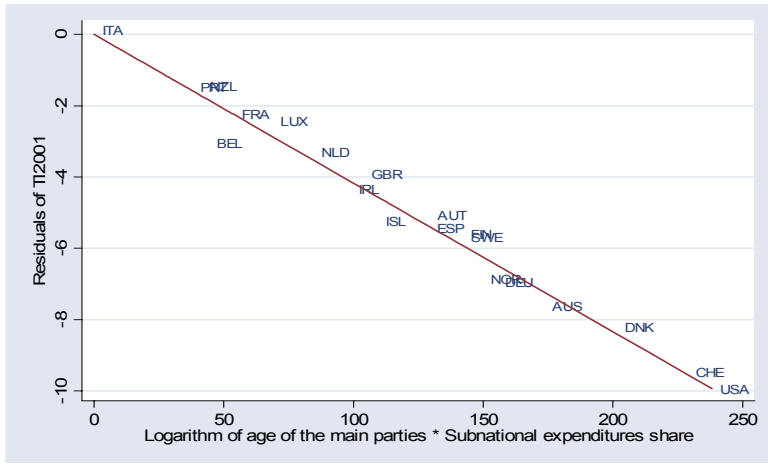


Figure 1. Party age and effect of decentralization on Transparency International index of corruption (2001) in developed countries

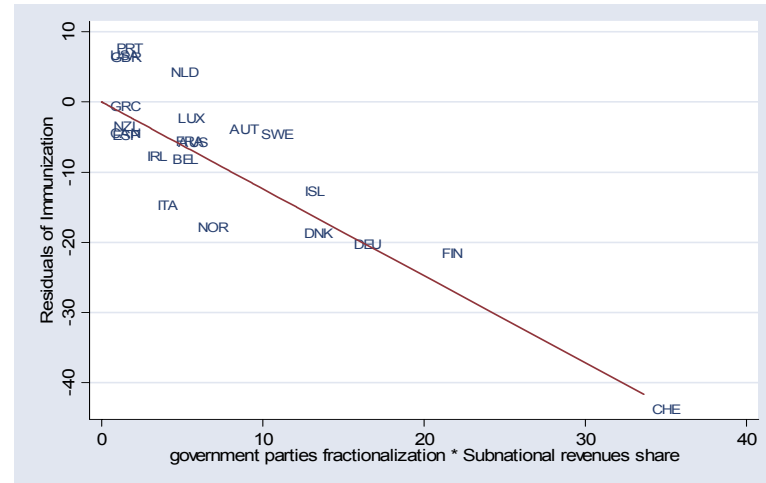


Figure 2. Fractionalization of government parties and effect of decentralization on the immunization in developed countries.

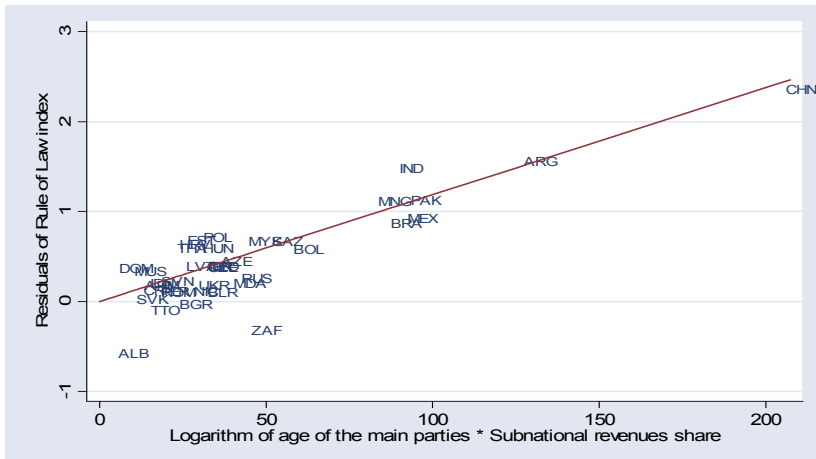


Figure 2. Party age and effect of decentralization on the rule of law index in developing and transition countries

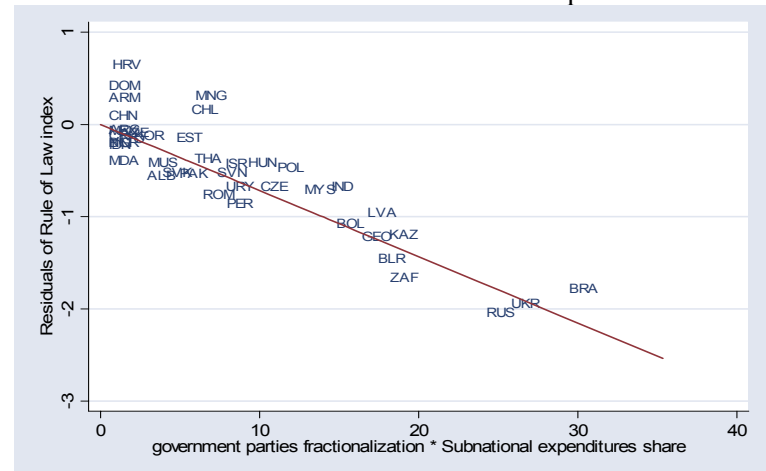


Figure 4. Fractionalization of government parties and effect of decentralization on the rule of law index in developing and transition countries

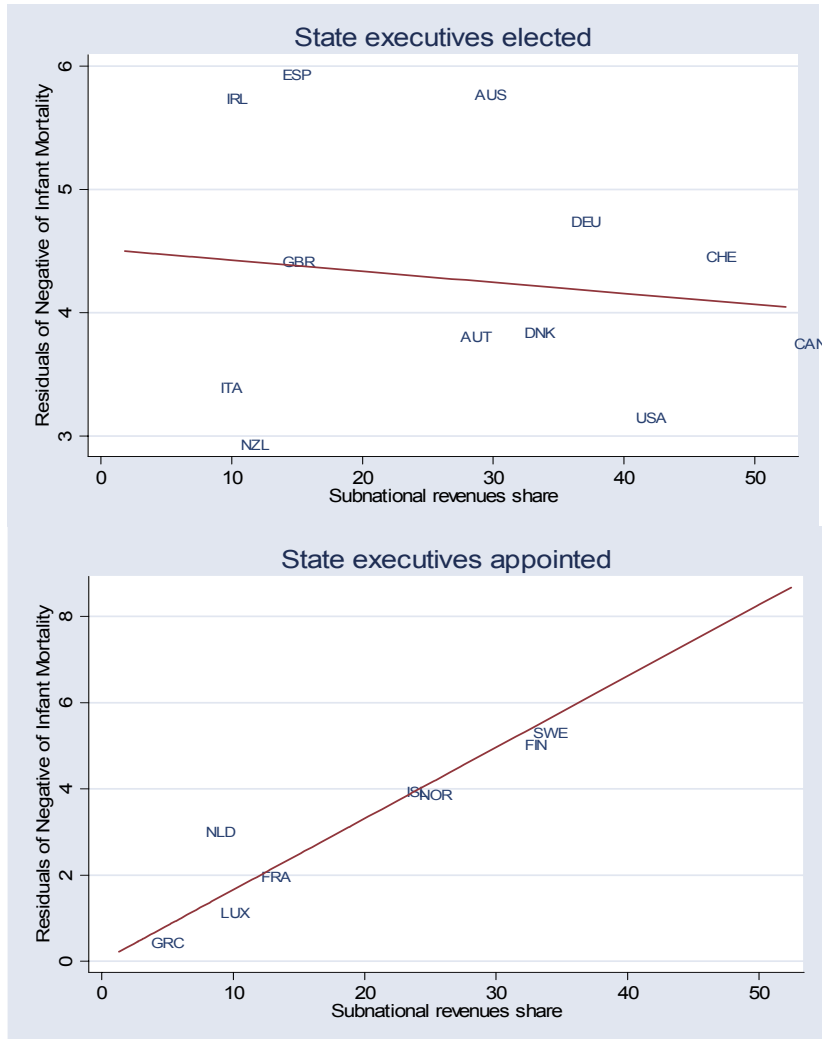


Figure 5. State executives elected/appointed and effect of decentralization on infant mortality in developed countries

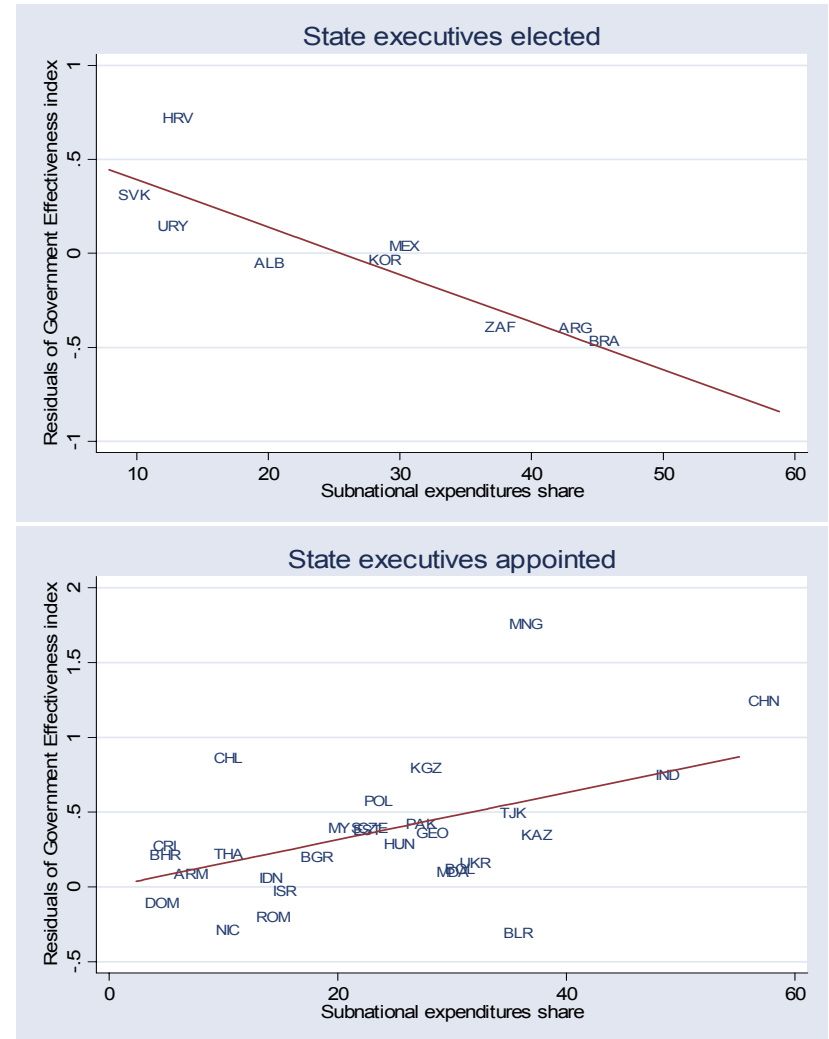


Figure 6. State executives elected/appointed and effect of decentralization on the government effectiveness index in developing and transition countries

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. <i>Source: Database on Fiscal Indicators¹, 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.</i>
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. <i>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.</i>
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. <i>Source: Database on Political Institutions, Version 3 (Beck et al., 2001).</i>
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. <i>Source: Database on Political Institutions, Version 3, (Beck et al., 2001).</i>
Fractionalization of opposition parties	The probability that two members 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. <i>Source: Database on Political Institutions, Version 3 (Beck et al., 2001).</i>
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. <i>Source: Database on Political Institutions, Version 3 (Beck et al., 2001).</i>
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. <i>Source: Database on Political Institutions, Version 3 (Beck et al., 2001), updated using Nickson (1995) and various other sources.</i>
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. <i>Source: Database on Political Institutions, Version 3 (Beck et al., 2001), updated using Nickson (1995) and various other sources.</i>

Continued.

¹ Database can be found at <http://www1.worldbank.org/publicsector/decentralization/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. <i>Source: Kaufmann, Kraay, and Zoido-Lobaton (2002).</i> ²
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. <i>Source: Kaufmann, Kraay, and Zoido-Lobaton (2002).</i>
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. <i>Source: Kaufmann, Kraay, and Zoido-Lobaton (2002).</i>
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. <i>Source: Kaufmann, Kraay, and Zoido-Lobaton (2002).</i>
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. <i>Source: Transparency International</i> ³
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. <i>Source: World Development Indicators 2001, by the World Bank</i>
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. <i>Source: World Development Indicators 2001, by the World Bank</i>
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. <i>Source: World Development Indicators 2001, by the World Bank</i>
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). <i>Source: World Development Indicators 2001, by the World Bank</i>

Continued.

² Paper can be found at <http://www.worldbank.org/wbi/governance/pdf/govmatters2.pdf>.

³ 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. <i>Source: World Development Indicators 2001, by the World Bank</i>
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. <i>Source: World Development Indicators 2001, by the World Bank</i>
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. <i>Source: World Development Indicators 2001, by the World Bank</i>
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. <i>Source: Constructed based on data from World Development Indicators 2001, by the World Bank</i>
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 <i>Source: World Development Indicators 2001, by the World Bank</i>
Current level of democracy	Index of democracy. Scale from 0 to 10 with higher values corresponding to more democratic outcomes. <i>Source: Polity IV Dataset.</i>
Democratic traditions	Average index of democracy for the last 50 years. Scale from 0 to 10 with higher values corresponding to more democratic outcomes. <i>Source: constructed based on data from Polity IV Dataset.</i>
Ethnolinguistic fractionalization	Index of ethnolinguistic fractionalization for the year 1985. Its value ranges from 0 to 1. <i>Source: Roeder, P. G. (2001).⁴</i>
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. <i>Source: La Porta et al. (1999).</i>
Latitude	The absolute latitude of the country, scaled to take values between 0 and 1. <i>Source: La Porta et al. (1999).</i>
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. <i>Source: La Porta et al. (1999).</i>

⁴ 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
Sample of developed countries (members of the Developing Assistance Committee of								
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	NON-OECD	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	***
	OECD	gov_frac* exp	0	0	0	0	0	0	*	0	N/A	0	-	*	N/A	**
		gov_frac* rev	0	0	0	0	0	0	**	0	N/A	0	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	NON-OECD	muni_elect* exp	0	0	-	0	0	**	*	-	-	-	0	0	0	***
		muni_elect* rev	0	0	-	0	0	**	*	-	-	-	0	0	0	***
		state_elect* exp	0	***	***	-	***	**	-	*	*	-	***	***	***	***
		state_elect* rev	0	**	***	-	**	*	-	**	-	-	0	+	***	***
	OECD	muni_elect* exp	0	+	0	0	+	+	0	*	N/A	-	**	***	N/A	***
		muni_elect* rev	+	+	+	0	+	+	0	**	N/A	-	+	+	N/A	***
		state_elect* exp	0	0	0	0	0	0	0	**	N/A	0	**	***	N/A	**
		state_elect* rev	+	0	0	+	+	**	0	*	N/A	0	0	**	N/A	+

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