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How Close Is Your Government to Its People?

Worldwide Indicators on Localization and Decentralization

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Abstract

This paper is intended to provide an assessment of the impact of the silent revolution of the last three decades on moving governments closer to people to establish fair, accountable, incorruptible and responsive governance. To accomplish this, a unique data set is constructed for 182 countries by compiling data from a wide variety of sources to examine success toward decentralized decision making across the globe. An important feature of this data set is that, for comparative purposes, it measures government decision making at the local level rather than at the sub-national levels used in the existing literature. The data are used to rank countries on political, fiscal and administrative dimensions of decentralization and localization. These sub-indexes are aggregated and adjusted for heterogeneity to develop an overall ranking of countries on the closeness of their government to the people. The resulting rankings provide a useful explanation of the Arab Spring and other recent political movements and waves of dissatisfaction with governance around the world.

This paper is a product of the Poverty Reduction and Economic Management Unit, East Asia and the Pacific Region. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at shah.anwar@gmail.com.

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Introduction

A silent revolution has been sweeping the globe since the 1980s. Hugely complex factors such as political transition in Eastern Europe, the end of colonialism, the globalization and information revolution, assertion of basic rights of citizens by courts, divisive politics and citizens' dissatisfaction with governance and their quest for responsive and accountable governance have been some of the contributing factors in gathering this storm. The main thrust of this revolution has been to move decision making closer to people to establish fair, accountable, incorruptible and responsive (F.A.I.R.) governance. The revolution has achieved varying degrees of success in government transformation across the globe due to inhibiting factors such as path dependency accentuated by powerful political, military and bureaucratic elites. While there has been monumental literature dealing with various aspects of this revolution, there has not been any systemic study providing a time capsule of the changed world as a result of this revolution. Such an assessment is critical to providing a comparative world perspective on government responsiveness and accountability. This paper takes an important first step in this direction by providing a framework for measuring closeness of the government to its people and providing a worldwide ranking of countries using this framework.

The paper is organized as is four parts as follows. Part I is concerned with highlighting the conceptual underpinnings and developing a framework to measure closeness of the government to people. It presents a brief overview of conceptual underpinnings of moving governments closer to people. This is followed by a discussion of basic concepts in measuring government closeness to its people. It calls into question the methodologies followed by the existing literature and argues for a focus on the role and responsibilities of local governments as opposed to sub-national governments where intermediate order governments typically dominate. It is the first paper that advocates and treats various tiers of local governments (below the intermediate order of government) as the unit of comparative analysis for multi-order governance reforms.

Part II presents highlights of the unique dataset compiled for this study. It presents summary statistics on structure, size, tiers of local governments and security of their existence. It also presents summary statistics on the various subcomponents of political, fiscal and administrative decentralization.

Part III is concerned with empirical implementation of the framework presented in Part I. It begins by highlighting the relative importance and significance of local governments. This is followed by providing country rankings on various aspects of political, fiscal and administrative decentralization. By combining these measurements, an aggregate indicator of localization is developed for each country. This index is then adjusted for population size, area and heterogeneity. We also provides correlations of these indexes with the corruption perceptions

index, citizen-centered governance indicators, per capita GDP, size of the government and the ease or difficulty of doing business in the country.

Part IV provides concluding observations highlighting the strength and limitations of the constructed indexes.

PART I

Moving Governments Closer to People: Conceptual Underpinning of the Rationale and an Empirical Framework for Comparative Analysis

Why Closeness of Government to Its People Matters: Conceptual Underpinnings

Several accepted theories provide a strong rationale for moving decision making closer to people on the grounds of efficiency, accountability, manageability and autonomy. Stigler (1957) argued that that the closer a representative government to its people, the better it works. According to the decentralization theorem advanced by Wallace Oates (1972. P.55), "each public service should be provided by the jurisdiction having control over the minimum geographic area that would internalize benefits and costs of such provision", because:

- local governments understand the concerns of local residents;
- local decision making is responsive to the people for whom the services are intended, thus encouraging fiscal responsibility and efficiency, especially if financing of services is also decentralized;
- unnecessary layers of jurisdictions are eliminated;
- inter-jurisdictional competition and innovation are enhanced.

An ideal decentralized system ensures a level and combination of public services consistent with voters' preferences while providing incentives for the efficient provision of such services. The subsidiarity principle originating from the social teaching of the Roman Catholic Church and later adopted by the European Union has argued for assignment of taxing, spending and regulatory functions to the government closest to the people unless a convincing case can be made for higher level assignment. Recent literature have further argued that such local jurisdictions exercising such responsibilities should be organized along functional lines while overlapping geographically do that individual are free to choose among competing service providers (see the concept of functional, overlapping and competing jurisdictions (FOCJ) by Frey and Eichenberger, 1999).

Moving government closer to people has also been advanced on the grounds of creating public value. This is because local governments have the stronger potential to tap some of the resources that come as free goods – namely, resources of consent, goodwill, good Samaritan values, community spirit (see Moore, 1996).

Moving government closer to people also matters in reducing transactions costs of individuals to hold the government to account for incompetence or malfeasance – a neo institutional economics

perspective advanced by Shah and Shah (2006). Finally, a network form of governance is needed to forge partnership of various stakeholders such as interest based network, hope based network, private for profit or for non-profit provides and government providers to improve economic and social outcomes. Such network form of governance is facilitated by having an empowered government closer to people that plays a catalytic role in facilitating such partnerships (see Dollery and Wallis, 2001).

In summing, a strong non-controversial case has been made by the conceptual literature to move government decision making closer to people on efficiency, accountability and responsiveness grounds. The question that is relevant is to develop a methodology for a comparative global assessment of a government's closeness to its people. This is the focus of research in the next section.

Measuring a Government's Closeness to Its People: An Empirical Framework

A government is closer to its people if it encompasses a small geographical area and population, and it enjoys home rule and cannot be arbitrarily dismissed by higher level governments. This requires an understanding of the structure, size and significance of local governments including its legal and constitutional foundation of its existence. An empirical framework for a comparative assessment must incorporate assessment of these factors. The following paragraphs elaborate on the methodology adopted in this paper to capture these elements.

Unit of analysis. The literature to-date without exception takes sub-national governments as a unit of analysis for measuring closeness to people. This viewpoint is simply indefensible.[2] This is because states or provinces in large countries such as USA, Canada, India, Pakistan, Brazil, and Russia are larger in population size and area than a large number of small or medium size countries. Having empowered provinces and states in these countries means that decision making is still far removed from the people. Also intermediate orders of government in large federal countries may be farther removed from people than the central government in smaller unitary states. Therefore it would be inappropriate to compare provinces in Canada or states in Brazil, India, or the USA with municipalities, say, in Greece. This approach also vitiates against small countries such as Liechtenstein and Singapore as these countries would be mistakenly rated as having decision making far removed from people. In view of these considerations, local governments are the appropriate unit for measuring closeness to people as implemented here.

Local government tiers. Local government administrative structure varies across countries and the number of administrative tiers varies from 1 to 5. This has also a bearing on the closeness of the government and must be taken into consideration.

Local government size. Average size of local government in terms of population and area also varies across countries and it has a bearing on potential participation of citizens in decision making. An example of potentially misleading choice of units for comparative analysis is in Fan et al 2009, where the authors create a dummy variable, which is equal to 1 when the executive bodies at the lowest tier of government are elected. As a result, say Bangladesh gets 0, and Indonesia gets 1, which suggests that at the lowest tier Indonesia is more politically decentralized than Bangladesh. However, the average population of the local government unit in Indonesia is

[2] Sub-national government as a unit of analysis may still be appropriate in other areas of fiscal federalism literature, such as interjurisdictional tax competition or yardstick competition

about 0.5 million, while in Bangladesh (according to the definitions in the paper) it is about 100 people. There are elected executive bodies in Bangladesh at a level of administrative units with population even less than 0.5 million, which implies that Bangladesh is more politically decentralized than Indonesia.

Significance of local government. Whether or not local governments command a significant share of national expenditures indicates their respective role in multi-order public governance. This is important in terms of their roles and responsibilities. For example, a local government may have autonomy but only a limited and highly constrained role as in India. This needs to be taken into consideration while making judgment on closeness of government decision making to people.

Security of existence of local governments. If local governments do not have any security of existence then their autonomy can be a hollow promise. Thus safeguards against arbitrary dismissal of local governments must be examined. This is to be assessed both by de-jure the legal and or constitutional foundations of local government creation and also de-facto working of such provisions. For example, local governments in India have constitutional backing, the same in Pakistan are creatures of the provinces and in China they simply are created by an executive order. While the legal and constitutional foundations of local government in India and Pakistan are much stronger, in practice and by tradition, local governments enjoy greater security of tenure in China.

Empowerment of local government. This is to be assessed on three dimensions – political, fiscal and administrative (see Boadway and Shah, 2009 and Shah and Thompson, 2004).

Political or democratic decentralization implies directly elected local governments thereby making elected officials accountable to local residents.. Political decentralization is to be assessed using the following criteria: direct popular elections of council members and the executive head; recall provisions for elected officials; popular participation in local elections and the contestability and competition in local elections.

Fiscal decentralization ensures that all elected officials weigh carefully the joys of spending some else's money as well as the pain associated with raising revenues from the electorate and facing the possibility of being voted out. Fiscal decentralization is to be evaluated using the criteria: range of local functions; local government autonomy in rate and base setting for local revenues; transparency and predictability and unconditionality of higher level transfers; finance follows function or revenue means more or less match local responsibility; degree of self-financing of local expenditures; responsibility and control over municipal and social services; autonomy in local planning, autonomy in local procurement; ability to borrow domestically and from foreign sources; ability to issue domestic and foreign bonds; and higher level government assistance for capital finance.

Administrative decentralization empowers local governments to hire, fire and set terms of reference for local employment without making any reference to higher level governments, thereby making local officials accountable to elected officials. This is to be assessed using indicators for: freedom to hire, fire and set terms of reference for local government employment; freedom to contract out own responsibilities and forge public-private partnerships; and regulation of local activities by passing bye-laws.

Part II

Description of the Data

To implement the above framework, we have developed a unique and comprehensive dataset for 182 countries using data for the most recent year of availability (mostly 2005) on the relative importance of local governments, their security of existence and various dimensions of their empowerment. The following sections introduce and analyze various dimensions of these data.

Local Government –Basic Definitions

General government (GG) consists of 3 parts: Central Government (CG), State or Provincial Government (SG), and Local Government (LG). Each part consists of governmental units (in case of CG - only 1 unit), which are united into one or more tiers (in case of CG - 1 tier). As far as data permits, Social Security Funds are consolidated with an appropriate part of GG. We use commonly accepted definitions of LG and SG as provided by the IMF Government Finance Statistics (GFS). These definitions are quite vague which results into countries deciding for themselves and reporting corresponding data. This sometimes leads to inconsistencies. For example, France with three sub-national tiers of government reports all of them as LG, whereas Spain - which in many ways has the same administrative structure as France - reports one tier of SG, and two tiers of LG. Giving more precise definitions for LG and SG, which could be applied to all countries, is a difficult task. In constructing a comparative data set, we have attempted to correct for these self-reporting biases by using country specific research studies where available to make a distinction between SG and LG tiers.

Tiers of Local Government

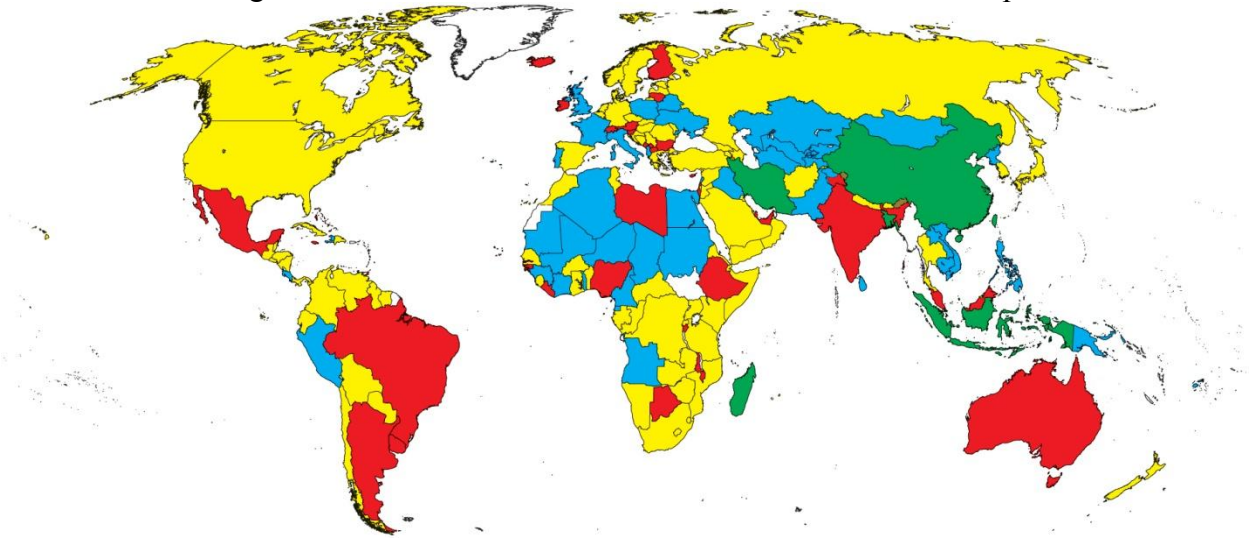
Our dataset contains detailed information about administrative structure of every country. In particular, we report which tiers of GG are ascribed to a local government, and number of governmental units at each tier. Tiers are needed to calculate the average population of LG administrative unit as follows:

$$LG\_pop = \frac{T * P}{\sum_{i=1}^{T} X_i}, \qquad (1)$$

where LG-pop is the average population of an LG unit, T is the number of tiers in the country, P is its population, and X is the number of LG units at the i'th tier.

Of the sample of 182 countries only 20 have state governments (SG), while the rest of the countries have only local and central governments. 26% of the countries have one tier of local government, 46% have two tiers, while 23% and 6% have three and four tiers respectively.

Figure 1: Number of Tiers of Local Government - World Map



Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note: Color of a country corresponds to its percentile in the world's distribution: red – 0-25th, yellow – 25-50th, blue – 50-75th, green – 75-100th.

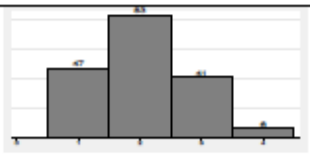
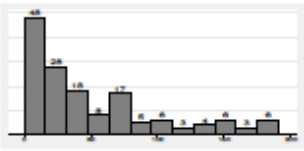
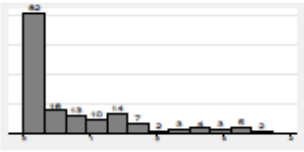
Figure 1 shows the world map, where darker shades represent countries having more tiers of local government. Table 1 reports analysis of these tiers by geographic region and by country per capita income. World regions on average have two LG tiers with South Asia and the East Asia regions having above average number of tiers. High income countries however, tend to allow lower number of LG tiers as compared to lower income countries.

Table 1: Local Government Administrative Structure and Size by Region and Income Class of Countries

	# tiers		av. pop.		av. area	
	mean	sd	mean	sd	mean	sd
Total	2.03	0.8	101.06	175.47	2.13	6.95
By region:						
Southern Asia	2.43	0.98	79.76	75.5	0.32	0.58
Europe and Central Asia	2	0.74	29.49	56.28	0.29	0.4
Middle East and North Africa	2	0.86	111.79	116.41	5.14	15.68
Sub-Saharan Africa	2.02	0.76	171.64	178.56	4.09	8
Latin America and Caribbean	1.74	0.63	63.16	51.88	1.12	1.73
East Asia and Pacific	2.5	1	171.4	379.83	1.22	2.53
North America	2	0	11.6	6.79	1.32	1.72
By income:						
high income	1.69	0.67	72.51	119.35	1.13	2.71
middle upper income	1.76	0.72	67.3	78.76	4.09	13.25
middle lower income	2.35	0.76	93.92	246.42	1.12	2.32
low income	2.26	0.82	162.25	178.02	2.58	5.45

Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note The classification of the countries is according to the World Bank.

Table 2: Local Government Administrative Structure and Size : Frequency Distribution of Countries

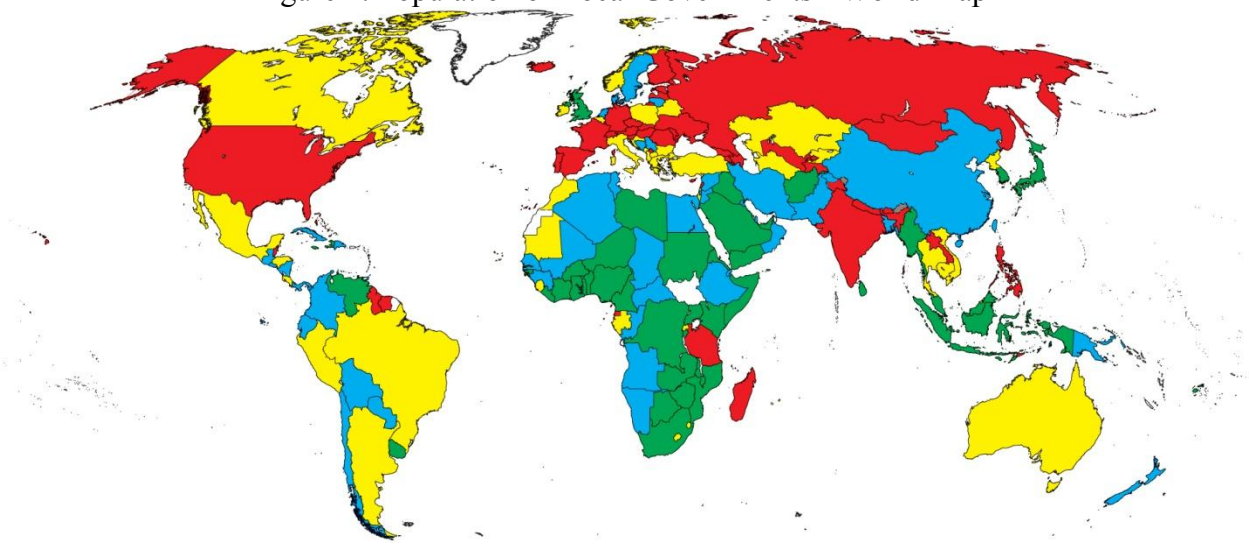
Name	N	Min	Max	Distribution	Countries, min.value	Countries, max.value
LG # of tiers	177	1	4		1 tier - 47 countries	Timor-Leste(4) Iran(4) Bangladesh(4) China(4) Madagascar(4)
LG average population	177	1.1 th	0.9 mln		East-Timor (1.1 th) Eq. Guinea (1.4 th) Laos (1.5 th) Cyprus (1.6 th) Switzerland (2.7 th)	Somalia (0.9 mln) Congo DR (0.6 mln) UAE (0.5 mln) Burundi (0.5 mln) Indonesia (0.5 mln)
LG average area	177	0.01 tsk	70.4 tsk		Czech Rep (0.01 tsk) France (0.01 tsk) Lebanon (0.01 tsk) India (0.01 tsk) Phillipines (0.01 tsk)	Lybia (70.4 tsk) Botswana (42.9 tsk) Somalia (35.4 tsk) Namibia (13.7 tsk) Congo DR (11.6 tsk)

Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note Units of measurement: *th* - thousand people, *mln* - million people, *tsk* - thousand square kilometers. Distribution of *LG average population* is only for countries with this indicator lower than 200 thousand people (87% of the sample). Distribution of *LG average area* is only for countries with this indicator lower than 4 thousand sq. kilometers (92% of the sample)

Average Population Size of Local Government Units

The average tiers-adjusted population of a local government unit ranges from about several thousand people (Equatorial Guinea, Switzerland, Czech Republic, Austria) to several hundred thousand people (Somalia, DR Congo, Indonesia, Korea), with the country-average population of 101,000 people. As shown in Figure 2 (see also Table 1) local governments in European and North American countries are significantly smaller in population size than the ones in the rest of the world, while the LG in Sub-Saharan Africa and East Asia are on average more than five times larger. Lower income countries have significantly larger population size governments.

Figure 2: Population of Local Governments - World Map



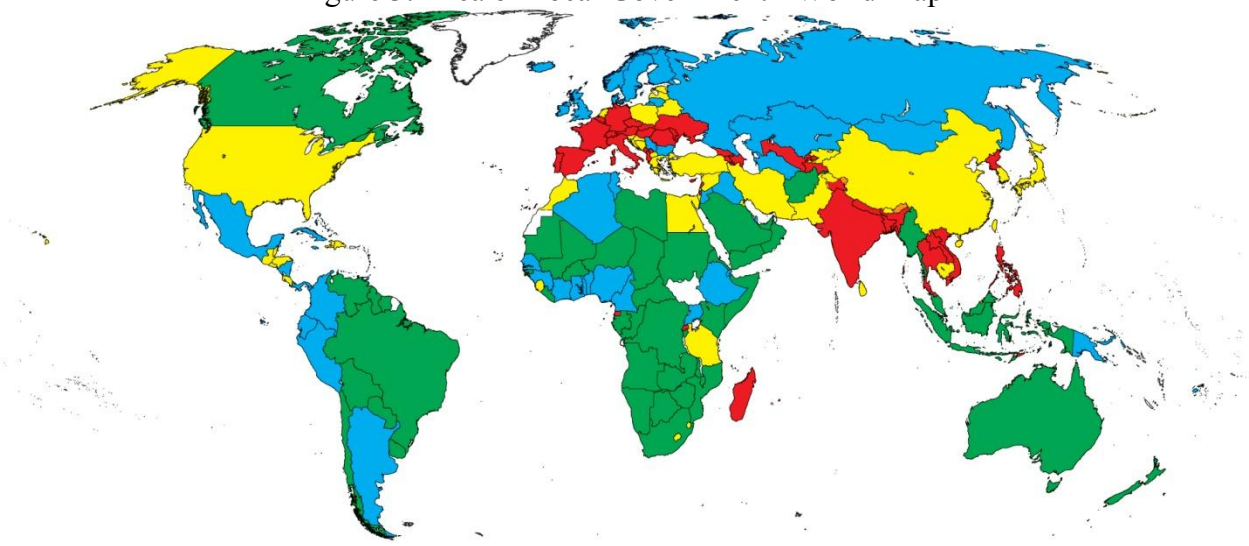
Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note: Color of a country corresponds to its percentile in the world's distribution: red – 0-25th, yellow – 25-50th, blue – 50-75th, green – 75-100th.

Average Area of Local Government Units

The average area of a local government unit ranges from 0.01 thousand square kilometers (TSK) in Czech Republic to 70 TSK in Libya, with the cross-country average of 2.1 TSK. European and South Asian countries have relatively much smaller area size local government units, while Africa and Middle East have average LG areas of up to 14 times larger. LG in higher income countries are generally smaller in average area than the ones in lower income countries (see Table 1 and Figure 3).

The overall pattern observed here is that higher income countries on average tend to have smaller size (both in terms of population and area) local governments with fewer tiers than lower income countries.

Figure 3: Area of Local Government - World Map



Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note: Color of a country corresponds to its percentile in the world's distribution: red – 0-25th, yellow – 25-50th, blue – 50-75th, green – 75-100th.

The Significance of Local Government: Relative Importance and Security of Their Existence

Measurement of relative importance of local government and constitutional safeguards regarding arbitrary disbandment are critical to reaching a judgment about closeness of the government to its people. The following paragraphs highlight the variables used in this measurement.

(a) Relative Importance of Local Governments

The relative importance of local governments is measured by share of *LG expenditures(lgexpdec)* in consolidated general government expenditures for all orders of government (GG). This is obviously an imperfect measure of relative importance of local governments as a significant part of local government expenditures may simply be in response to higher level government mandates with little local discretion. However, data on autonomous local government expenditures are simply not available.

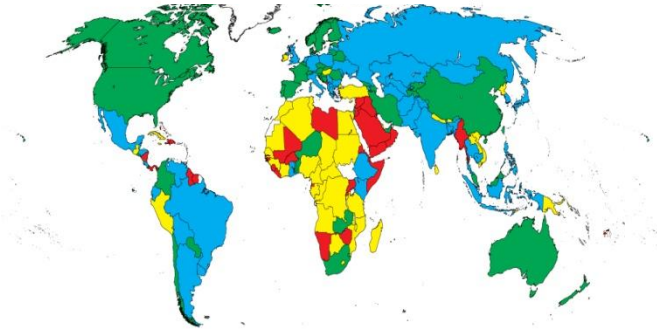
Table 3: Definitions of Variables for Measuring Relative Importance and Security of Existence of Local Government

Name	Type	Definition
LG expenditures (Importance of LG)	Continuous: 0-100	LG expenditures as % of GG expenditures
LG independence (Security of LG existence)	Discrete: 0, 0.25, 0.5, 0.75, 1	1 - legislative safeguards against dismissal of LG council by CG; 0.5 - LG can be dismissed under certain circumstances (prescribed by law or constitution); 0 - LG can be dismissed in an arbitrary situation. 0.25 or 0.75 - if LG are treated asymmetrically

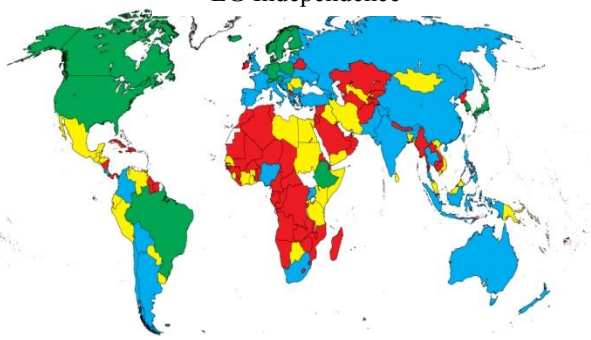
Source: Authors' calculations based upon data sources reported in Annex Table A1.

Figure 4: Relative Importance of Local Governments and Their Independence - World Maps

LG Relative Importance



LG Independence



Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note: Color of a country corresponds to its percentile in the world's distribution: red – 0-25th, yellow – 25-50th, blue – 50-75th, green – 75-100th.

LG share of GG expenditures varies greatly over our sample - from virtually zero percent in a number of countries (Guyana, Mozambique, Haiti, etc.) to 59 percent in Denmark, and have near chi-square distribution with one degree of freedom. A large majority of countries (63 percent) have local government expenditure shares less than the sample average of 13 percent, and only 11 percent of the countries have LG expenditures shares higher than 30 percent. Only in Europe, East Asia and North America, local governments are important players in the public sector.

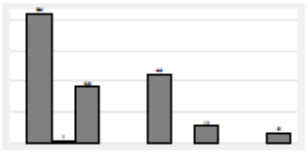
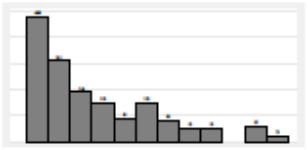
An alternate variable that could serve as a proxy for the relative importance of LG is *LG employment (lgempl)*: share of LG employment in GG employment. The available data on this variable are however much less reliable and shows a great deal of year to year volatility for most developing nations. In view of this, we are left with no alternative but the use of expenditure shares as the only variable to measure the relative importance of local governments. *LG employment* is used in calculation of administrative decentralization index.

(b) Security of Existence of Local Governments

Local government security of existence is measured by *LG independence(lgindep).* This measure attempts to capture the constitutional and legal restraints on arbitrary dismissal of local governments.

Only in 6 out of 182 countries, local governments have significant safeguards against arbitrary dismissal. . LG in 48 percent of the countries have limited independence and for the remaining 49 percent of countries in our sample, local governments can be arbitrarily dismissed by higher order governments. Europe, North America and Brazil receive relatively higher scores on this indicator whereas local governments in Africa and the Middle East have almost no security of existence.

Table 4: Frequency Distribution of Countries on Local Government Independence and Their Relative Significance

Name	N	Min	Max	Distribution	Countries, low values	Countries, high values
LG independence (Security of existence)	182	0	1		0 - 89 countries	1 - Denmark, Brazil, Austria, Norway, Sweden, Switzerland 0.75 - Poland, Iceland, Canada, Ethiopia, Germany, Belgium, Estonia, USA, Finland, Japan, Korea
LG expenditures	158	0	59.4		¡0.02 - 39 countries	Denmark(59.4) Uzbekistan(55) China(51.4) Sweden(44.2) Japan(41.4)

Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note City states are excluded from the rankings

Local Government Empowerment

Local government empowerment is measured on fiscal, political, and administrative dimensions as discussed below.

(a) Fiscal Decentralization

The following variables are used to assess local government fiscal autonomy.

- *LG vertical fiscal gap(lgvergap)*. Vertical fiscal gap refers to the fiscal deficiency arising from differences in expenditure needs and revenue means of local government. These deficiencies are partially or fully overcome by higher level financing. Therefore, vertical fiscal gap is a measure of fiscal dependence of local government on higher level financing. The design and nature of higher level financing has implications for fiscal autonomy of local governments. It must therefore be recognized that vertical fiscal gap while being a useful concept cannot be looked in isolation of a number of related indicators to have a better judgment on local fiscal autonomy as done here. The average vertical gap in the world is 52 percent. It is somewhat higher in African and Latin American countries. However, in all regions there are local governments with high share of expenditures and high reliance on financing from above (e.g. Brazil), as well as almost non-existent LG governments that rely solely on their own financing (Togo, Niger).

- *LG taxation autonomy (lgtaxaut)*. This measure reflects upon a local government's empowerment and access to tools to finance own expenditures without recourse to higher level governments. It measures its ability to determine policy on local taxation (determining bases and setting rates) and as well as autonomy in tax collection and administration. Only 16 percent of the countries in our sample grant significant taxation autonomy to their LGs, while the rest grant limited or no tax autonomy to their local governments.

Table 5: Fiscal Decentralization Variables

Name	Type	Definition
LG vertical gap	Continuous: 0-100	Grants from other govt's (same- or upper-tier, also from other countries) as % of LG revenues
LG taxation autonomy	Discrete: 0, 0.25, 0.5, 0.75, 1	1 - LG regulates fully (sets base and rate) at least one major tax (property, income, or sales tax); 0.5 - LG partly regulates (sets rate or base in CG defined boundaries, or only after CG approval) at least one major tax, or fully regulates some fees and minor taxes; 0 - no administration of major taxes, partial administration of minor taxes; 0.25 or 0.75 - LG are treated asymmetrically
LG unconditional transfers	Discrete: 0, 0.25, 0.5, 0.75, 1	1 - at least half of transfers (to LG budgets from same- or upper-tier governments) are unconditional and formula-based; 0.5 - quarter to half of transfers are unconditional and formula-based; 0 - all transfers are either conditional or discretionary; 0.25 or 0.75 - LG are treated asymmetrically
LG expenditure autonomy	Continuous: 0 - 1	Derivative of *LG unconditional transfers* and *LG vertical gap*. See formula (2)
LG borrowing freedom	Discrete: 0, 0.25, 0.5, 0.75, 1	1 - borrowing is not regulated by CG; 0.5 - borrowing only from CG or under CG approval or regulation; 0 - borrowing is not allowed; 0.25 or 0.75 - LG are treated asymmetrically

Source: Authors' calculations based upon data sources reported in Annex Table A1.

• *LG unconditional transfers (lgtransf)*. Unconditional, formula based grants preserve local autonomy. Such grants are now commonplace yet conditional grants still dominate. Europe and North America, Latin America and Southern Asia regions have high percentage of countries with high scores on this indicator.

• *LG Expenditure Autonomy*. Measured by share of LG expenditures in total GG expenditures this variable does not fully reflect the actual expenditure discretion that local governments have. First, LG may be simple distributors of the funding transferred to them from an upper-tier government, and have little choice over how the money in their budget should be spent. If the LG vertical gap (difference between LG expenditures and LG non-transfer revenues) is wide, and if the transfers from upper-tier governments are earmarked and discretionary, the actual spending power of LG may be much lower than it would be indicated by *lgexpdec*. Second, even the own revenues of LG (tax revenues or borrowed funds) may strongly depend on CG policy. If LG are not allowed to regulate taxes without CG interference (usually in such cases they receive a revenue-share of a tax, which is regulated by CG), then they cannot fully rely on the revenues from these taxes, and their policy would still be partly dependent on CG.

We adjust for the first argument - that the real LG expenditure autonomy depends on the vertical gap and the structure of intergovernmental grants - by defining LG expenditure autonomy variable (*lgexpdiscr*):

$$lg\_expaut = 1 - lg\_vergap * (0.75 - 0.5 * lg\_transf), \quad (2)$$

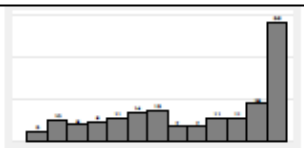
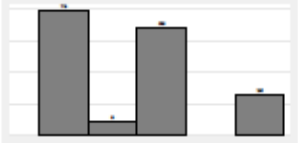
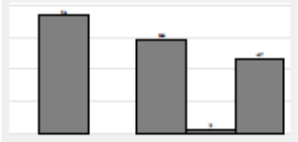
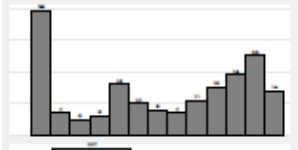
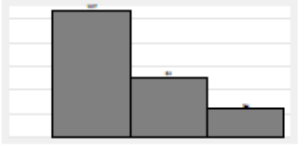
Note from (2), that even if a country has widest possible vertical gap (1), and smallest possible share of unconditional formula-based transfers (0) it still keeps 0.25 share of its original expenditure decentralization. This is to reflect the fact that discretionary conditional grant from

CG still gives more autonomy to the LG than the direct spending of CG. At the same time, country with a positive vertical gap and best possible set of transfers gets less than *lgexpdec* - share of it. This is to reflect the fact that even the best set of transfers does not give LG as much fiscal independence as its own revenues.

• *LG borrowing freedom (lgborrow)*. Can LG borrow money to satisfy their capital finance needs? Can the borrowing be done without consent or regulation of CG? 89 of 160 countries in our sample forbid any kind of borrowing by LGs, while only in 22 countries LGs are allowed to borrow without any restrictions. Local borrowing rules are more accommodating in Europe and Latin America.

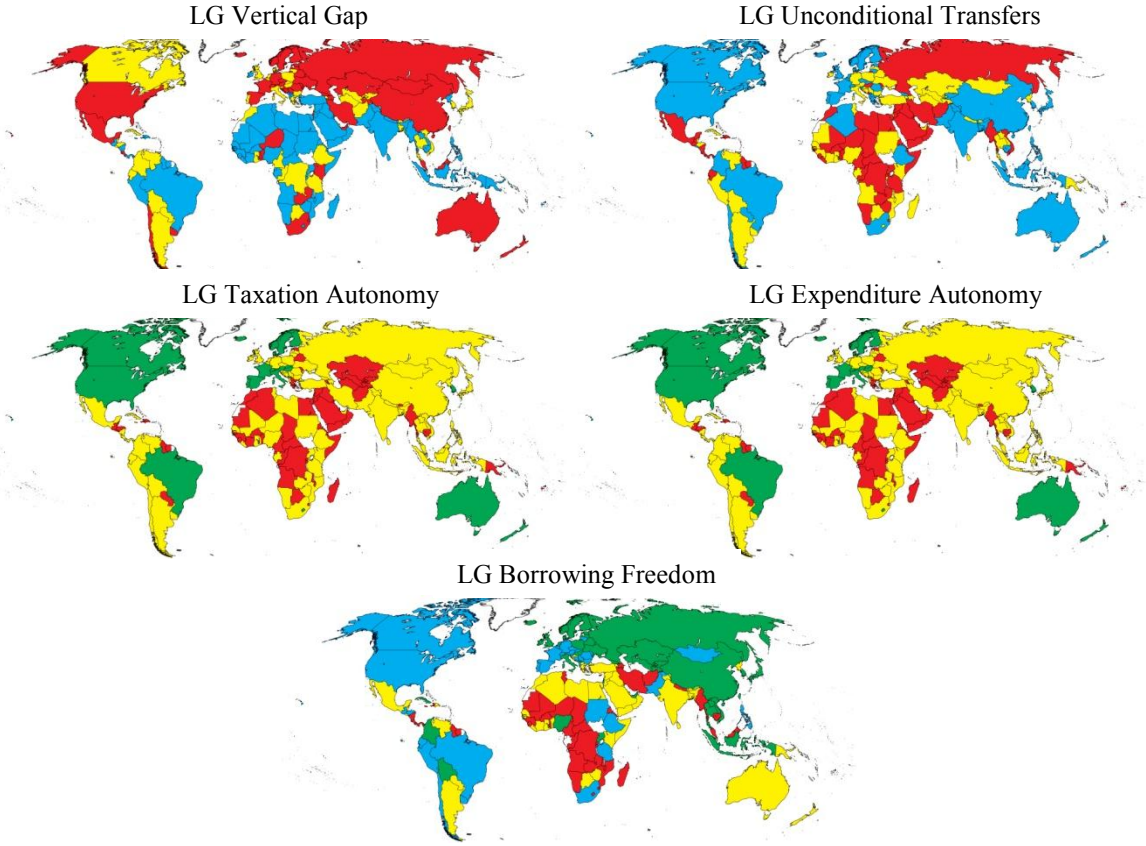
The descriptions, definitions and sample distributions of fiscal decentralization variables that we use are reported in Tables 7 and 8, and Figure 6 displays corresponding world maps.

Table 6: Fiscal Decentralization: Frequency Distribution of Countries

Name	N	Min	Max	Distribution	Countries, low values	Countries, high values
LG vert. gap	123	0	100		Niger(0) Togo(0) Iran (5.9) Iceland(9.2) Romania(9.5)	Syria(100) Uganda(90) Burundi(90) India(90) Burkina Faso(90)
LG tax. autonomy	158	0	1		0 - 71 country	1 - 25 countries
LG uncond. transfers	159	0	1		0 - 56 countries	1 - 45 countries
LG exp. autonomy	182	0.25	1		0.25 - 39 countries	Togo(1), Niger(1), Hong Kong(1), Singapore(1), Iceland(0.98)
LG borr. freedom	160	0	1		0 - 89 countries	1 - 22 countries

Source: Authors' calculations based upon data sources reported in Annex Table A1.

Figure 5: Fiscal Decentralization Variables - World Map



Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note: Color of a country corresponds to its percentile in the world's distribution: red – 0-25th, yellow – 25-50th, blue – 50-75th, green – 75-100th.

(b) Political Decentralization

Political decentralization refers to home rule for local self-governance. This is examined using the following criteria.

- *LG legislative election(lglegel)*. Are legislative bodies at the local level elected or appointed? Is the truth somewhere in between? (For example, part of council members is appointed, part is elected, or members of councils are elected from preapproved by CG list.)

Elected local councils are now commonplace around the world with only 34 percent of the countries in the sample having any restraints on popular elections of legislative councils at the local level, and only 14 countries have appointed local councils . Middle East and Sub-Saharan Africa are lagging behind the rest of the world in permitting directly elected local councils.

- *LG executive election(lgexel)*. Are executive heads (mayors) at the local level elected -

directly or indirectly - or appointed? Direct elections of mayors are not yet commonplace with some restrictions on direct elections in 79 percent of the countries. Thirty-six countries have no restrictions, while in 36 countries mayors are appointed at all LG tiers. While Africa and Middle East are traditionally lagging behind, European countries also receive relatively low scores on this indicator as most of the countries have some tiers of local government with appointed or indirectly elected mayors.

• *Direct democracy provisions(lg_dirdem)*. Are there legislation provisions for obligatory local referenda for major spending, taxing and regulatory decisions, recall of public officials, and requirement for direct citizen participation in local decision making processes?

Table 7: Political Decentralization Variables

Name	Type	Definition
LG legislative election	App. continuous: 0-1	Final value: average over all tiers considered; for each tier: 1 - whole council is directly elected; 0.5 - council is partly elected, partly appointed, council is elected indirectly, LG are treated asymmetrically; 0 - council is appointed, or does not exist
LG executive election	App. continuous: 0-1	Final value: average over all tiers considered; for each tier: 1 - mayor is directly elected; 0.5 - mayor is indirectly elected, does not exist, coexist with an appointed executive, LG are treated asymmetrically; 0 - major is appointed
Direct democracy	Discrete: 0, 0.25, 0.5, 1	1 - obligatory referendum in case of certain gov't decisions (prescribed by law or constitution); 0.5 - obligatory public approval in case of certain gov't decisions (public hearings, citizen assemblies); 0.25 - leg. provisions for other forms of citizen participation (civil councils, open LG sessions, possibility to submit petition or initiate referendum); 0 - no leg. provisions for direct democracy

Source: Authors' calculations based upon data sources reported in Annex Table A1.

Only three countries in our sample (Switzerland, Japan and USA) have direct democracy provisions (as defined in Table 5) prescribed in their national or state constitutions. About 40 percent of countries in the sample do not allow any kind of direct citizen participation in decision making at the local level. North American, European and Latin American countries have in recent years introduced isolated provisions for direct democracy, while in Africa and Middle East such people empowerment is virtually non-existent.

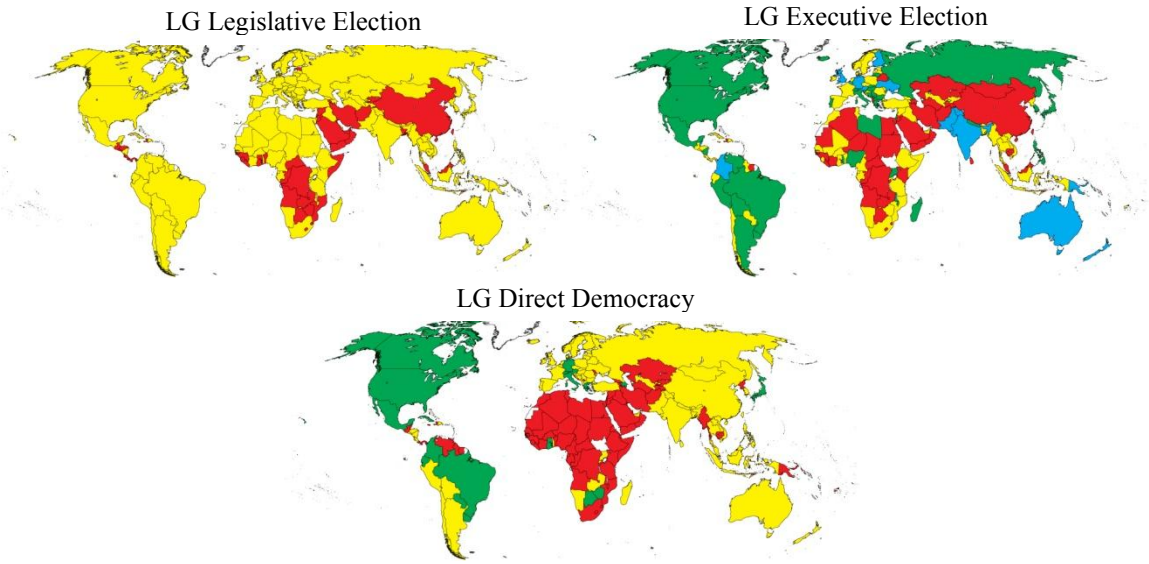
The descriptions, definitions and sample distributions of political decentralization variables are reported in Tables 5 and 6, Figure 4 displays corresponding world maps.

Table 8: Political Decentralization: Frequency Distribution of Countries

Name	N	Min	Max	Distribution	Countries, low values	Countries, high values
LG leg. election	173	0	1		0 - 14 countries (incl. Haiti, Malaysia, Lesotho, Liberia, Oman)	1 - 113 countries
LG exec. election	169	0	1		0 - 36 countries	1 - 36 countries
Direct democracy	147	0	1		0 - 60 countries	Switzerland(1) USA(1) Japan(1)

Source: Authors' calculations based upon data sources reported in Annex Table A1.

Figure 6: Political Decentralization Variables - World Maps



Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note: Color of a country corresponds to its percentile in the world's distribution: red – 0-25th, yellow – 25-50th, blue – 50-75th, green – 75-100th.

(c) Administrative Decentralization

Our concern here is to measure the ability of local governments to hire and fire and set terms of employment of local employees as well as regulatory control over own functions. As the latter data are not available, we are constrained to measure administrative decentralization simply by the first set of variables as follows.

• *LG HR policies (lghrpol)*. Are LG able to conduct their own policies regarding hiring, firing and setting terms of local employment? Only 43 of 158 countries allow their LGs full discretion regarding whom and at what terms to hire or fire. Europe, North America, Australia, and Latin America are leaders on this indicator. Many more countries (77) make this kind of decisions only at the central level even for local employees.

LG employment (lgempl): share of LG employment in GG employment. Country average for LG employment is estimated to be 26 percent. However, about 34 percent of the countries in our sample report more than 30 percent of public workforce to be employed at the local level.

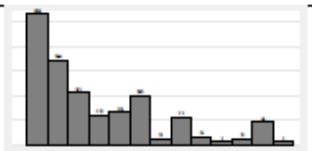
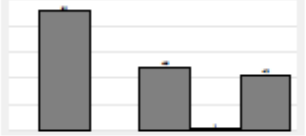
The descriptions, definitions and sample distributions of administrative decentralization variables are reported in Tables 9 and 10, Figure 6 displays corresponding world maps.

Table 9: Administrative Decentralization Variables

Name	Type	Definition
LG employment	Continuous: 0-100	LG employment as % of GG employment (excluding health, education and police sectors)
LG HR policies	Discrete: 0, 0.25, 0.5, 0.75, 1	1 - full LG discretion over local employment (subject to general CG laws); 0.5 - partly LG discretion (hiring but terms for public employment are set by CG, hiring only to the minor posts, hiring from selected by CG candidates, hiring after CG examination); 0 - no LG discretion in hiring; 0.25 or 0.75 - LG are treated asymmetrically

Source: Authors' calculations based upon data sources reported in Annex Table A1.

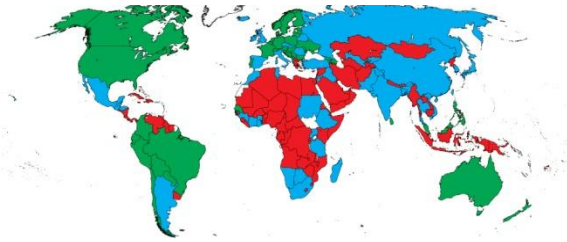
Table 10: Administrative Decentralization: Frequency Distribution of Countries

Name	N	Min	Max	Distribution	Countries, low values	Countries, high values
LG employment	144	0	92		close to 0 - 7 countries	China(90) Albania(80) Norway(80) Finland(80) Sweden(80)
LG HR policies	158	0	1		0 - 77 countries	1 - 43 countries

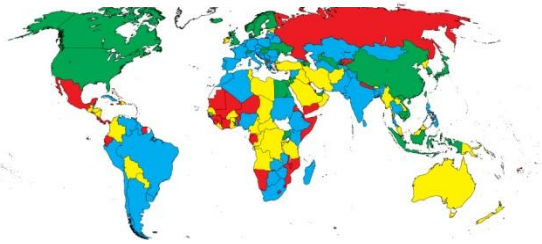
Source: Authors' calculations based upon data sources reported in Annex Table A1.

Figure 7: Administrative Decentralization Variables - World Maps

LG HR Policies



LG Employment



Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note: Color of a country corresponds to its percentile in the world's distribution: red – 0-25th, yellow – 25-50th, blue – 50-75th, green – 75-100th.

PART III

Worldwide Ranking of Countries on Various Dimensions of Closeness of Their Governments to the People

Our main assumption is that decentralization to local governments matters only when local governments are important players in the public sector as measured by their share of general government expenditures, and have security of existence. Indeed, it is hard to believe that local governments - however politically or administratively independent they are from the center – have little ability to serve their residents if they do not command significant budgetary resources and if they can be dissolved at will by a higher order government. These two variables adjusted by the degree of political, fiscal and administrative decentralization form the basis of our aggregate country rankings on "closeness" or "decentralization" nexus.

In the following, political, fiscal and administrative decentralization sub-indexes are first constructed for sample countries. These indexes are then aggregated to develop a composite index of government's closeness to its people – the so-called "decentralization index". Finally this index is adjusted for heterogeneity and size of LGs.

Fiscal Decentralization Index

The formula for our fiscal decentralization index (*fdi*) is the following:

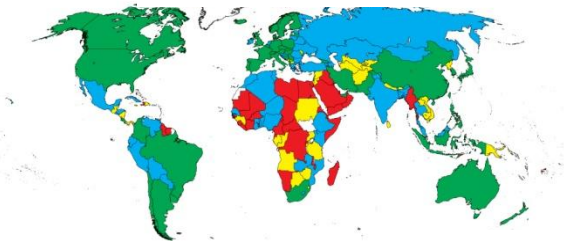
$$fdi = lg\_expaut * (0.25 + 0.375 * (lg\_taxaut + lg\_borrow). \quad (3)$$

Where *lg_expaut* is local expenditure autonomy, *lg_taxaut* is tax autonomy and *lg_borrow* represents legal empowerment for local borrowing. This index penalizes those countries, where LG do not have taxation autonomy nor borrowing freedom, however, it may still be positive for these countries (equal to 0.25 share of *lg_expaut*) reflecting the fact that own revenues do grant some degree of discretion to LG. At the same time, countries with full taxation autonomy and borrowing freedom get an index, which is equal to *lg_expaut*.

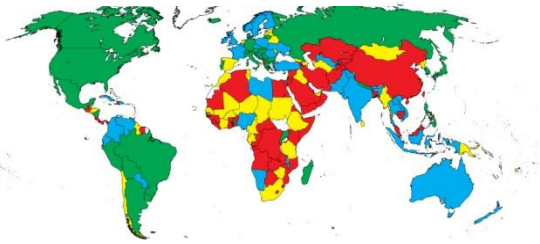
If there is no data on *lg_taxaut* or *lg_borrow* then the worst possible values are assumed: *lg_taxaut*=*lg_borrow*=0.

Figure 8: Fiscal, Political, Administrative Decentralization Indexes - World Maps

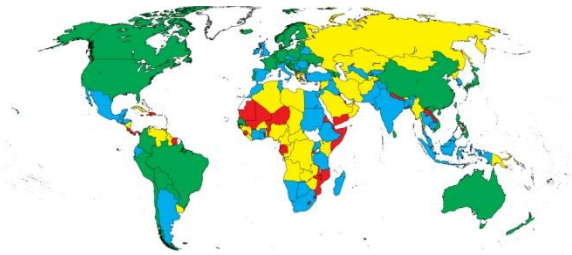
Fiscal DI



Political DI



Administrative DI



Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note: Color of a country corresponds to its percentile in the world's distribution: red – 0-25th, yellow – 25-50th, blue – 50-75th, green – 75-100th.

Political Decentralization Index

This index is constructed by simply taking the average variables described in the earlier section:

$$pdi = \frac{1}{4}(lg\_legel + lg\_exel + lg\_dirdem) \tag{4}$$

Every variable discussed above is an essential and independent part of political decentralization. Therefore, taking the average of all variables seems to be a reasonable measure.

The index is calculated for 182 countries.

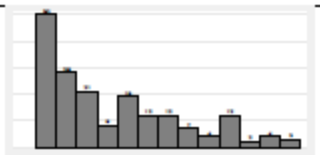
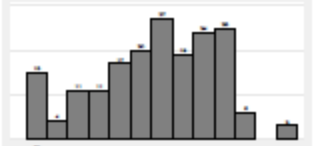
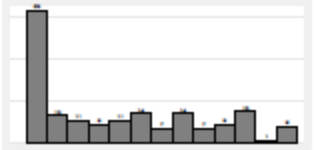
Administrative Decentralization Index

Administrative decentralization index (*adi*) is constructed as follows:

$$adi = \frac{1}{2}(lg\_hrpol + lg\_empl). \tag{5}$$

The index is built for 182 countries.

Table 11: Indexes of Decentralization: Frequency Distribution of Countries

Name	N	Min	Max	Distribution	Countries, low values
Fisc. dec	158	0	0.4		0-0.01 - 69 countries
Pol. dec.	182	0	1		0 - 18 countries
Adm. dec.	182	0	0.93		0 - 32 countries
Dec. index	158	0	0.44		0-0.01 - 56 countries

Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note

Table 12: Decentralization Indexes: Top Ten Leading Countries

N	fiscal	political	administrative	overall
1	Hong Kong (1)	Switzerland (1)	Finland(0.9)	Denmark(34)
2	Singapore (1)	Japan(1)	Norway(0.9)	Sweden(21)
3	Switzerland (0.96)	USA (1)	Denmark(0.9)	Switzerland (20)
4	USA (0.9)	Greece (0.83)	Sweden(0.9)	Hong Kong (17)
5	Denmark(0.9)	Uruguay (0.83)	Albania (0.9)	Singapore (17)
6	Canada (0.9)	Brazil(0.83)	Switzerland (0.9)	Finland(16)
7	Luxembourg (0.89)	Canada(0.83)	Armenia (0.88)	Japan (15)
8	Iceland (0.79)	Mexico (0.83)	Moldova(0.84)	Norway (15)
9	New Zealand (0.78)	Italy (0.83)	Hungary (0.82)	USA (14)
10	Australia (0.78)	0.75 - 23 countries	Canada (0.75)	Korea (12)

Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note Presented are top ten leading countries by fiscal, political, administrative and overall (main) indexes are presented.

The Aggregate Decentralization Indexes

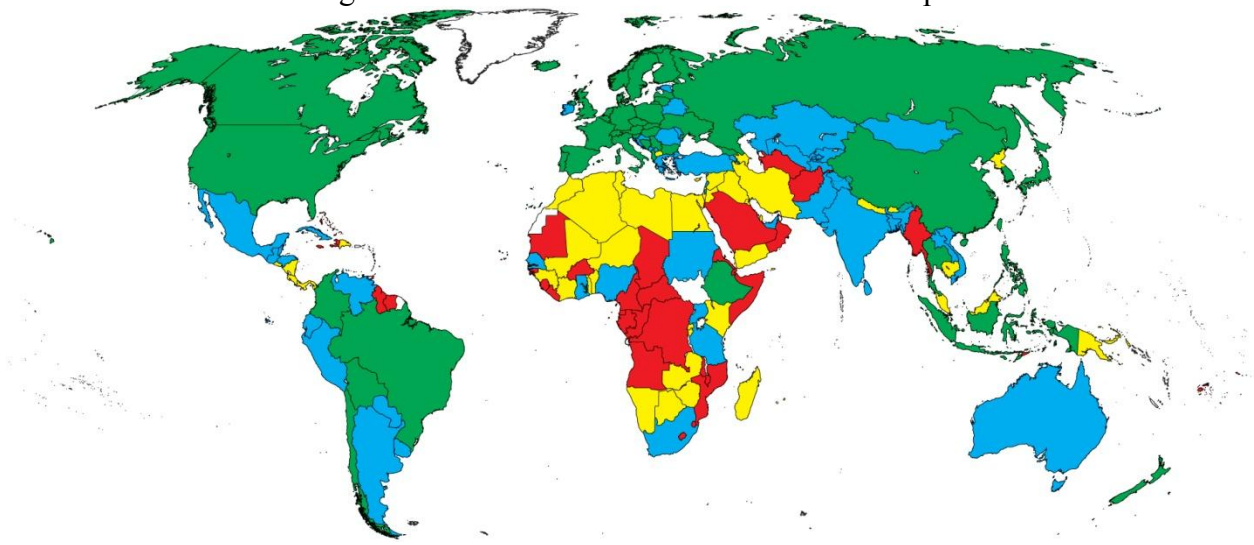
The aggregate index (di) incorporates the relative importance of LG (measured by *lg_expdec*), the security of existence of LG (measured by *lg_indep*), and fiscal, political and administrative indexes. It is constructed as follows:

$$di = lg\_expdec*(0.25+0.75*lg\_indep)*fdi*(0.25+0.75*pdi)*(0.25+0.75*adi). \quad (6)$$

The index penalizes countries with low political and administrative decentralization, but even if *pdi*=*adi*=0 the index is still positive if LG have some fiscal autonomy and security of existence. It reflects the fact that even fully subordinated LG without any considerable administrative responsibilities still makes fiscal decisions in more decentralized way than the CG. It also smoothes measurement errors that can be contained in our measures of political, administrative decentralization, and security of existence.

This index is constructed for 158 countries worldwide. Together they comprise 98% of the world's GDP, and 99% of the world's population. The Figure 8 depicts distribution of the decentralization index on the World map. The darker the color of a country, the more decentralized it is. European countries, North America, Brazil, and China receive high scores on this index. Countries from Latin America, former Soviet Union, and East Asia receive average decentralization index, while Middle East and African countries are the least decentralized.

Figure 9: Index of Decentralization - World Map



Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note: Color of a country corresponds to its percentile in the world's distribution: red – 0-25th, yellow – 25-50th, blue – 50-75th, green – 75-100th.

Developing the Government "Closeness" Index by Adjusting the Decentralization Index for Heterogeneity of Size and Preferences

Our main premise is that the decentralization brings government decision making closer to the people. The decentralization indexes reported earlier indicate the significant local governments are in policymaking and public service delivery responsibilities in any country. These indexes do not fully capture the actual closeness of local governments to people. This is because local governments vary widely in population, area and diversity of preferences of residents. For example, Indonesia has average LG unit population size of 0.5 mln people, while in Switzerland, for instance, the average local government population size is only 3 thousands. Population of such countries as Malta, Iceland, Belize, Maldives, etc. is lower than 0.5 mln people. It is obvious that in most aspects, e.g. accounting for heterogeneous preferences, being accountable and known to people, etc., even central governments in these countries are closer to people that the LG in Indonesia. Therefore, the decentralization indexes need to be adjusted for LG population and area and other measures of a country's heterogeneity.

Our procedure of the adjustment is the following. Suppose we have a country with decentralization index β, average population of LG unit *N*, and heterogeneity index α. Heterogeneity index is based on average area of LG unit, ethno-linguistic, age, income, urbanization composition of the country's population, as well as its geographical features (relief, versatility of climatic zones, etc.). Each resident of the country has different preferences regarding the level of governmental services provided. If an average LG provides x units of the service then the disutility of a resident i is $f(|i-x|,\alpha)$, where f is some function of two arguments. Disutility increases with the distance between the decision of the government and the preference of the resident, and all things equal, disutility increases with heterogeneity of the

country, i.e. residents are more distant in their preferences in more heterogeneous countries. Governments are assumed to be benevolent, and minimize the aggregate disutility of all residents in a region they are in charge of. Since we assume symmetric distribution of preferences in the region, benevolent government would provide *N*/2 units of the service - a level preferred by the median resident.

Given the assumptions above, the question we ask is what decentralization index should (β,*N*,α)-country have in order to produce a disutility of an average resident equal to the one in (β,$\bar{N}$, $\bar{\alpha}$)-country, a country with the same decentralization index β, but some benchmark levels of average LG unit population and heterogeneity index? The answer to this question is follows from the identity below:

$$\beta' AD(N,\alpha) = \beta AD(\bar{N},\bar{\alpha}) \;\Rightarrow\; \beta' = \beta \frac{AD(\bar{N},\bar{\alpha})}{AD(N,\alpha)}, \tag{7}$$

where *AD*(*N*,α) is the disutility of an average resident in LG with population *N* and heterogeneity index α, given that the government sets its service to satisfy the median resident. *AD* can be found from the following expression:

$$AD(N,\alpha) = \frac{1}{N}\sum_{i=1}^{N} f(\left|\frac{N}{2} - i\right|, \alpha) \approx \frac{2}{N}\int_{0}^{N/2} f(\frac{N}{2} - i, \alpha)di, \tag{8}$$

where in the above equation we use approximation of a sum with the integral (to simplify calculations), and our assumption about symmetric around median preferences.

For our calculation of decentralization index adjustment we take the following *f* :

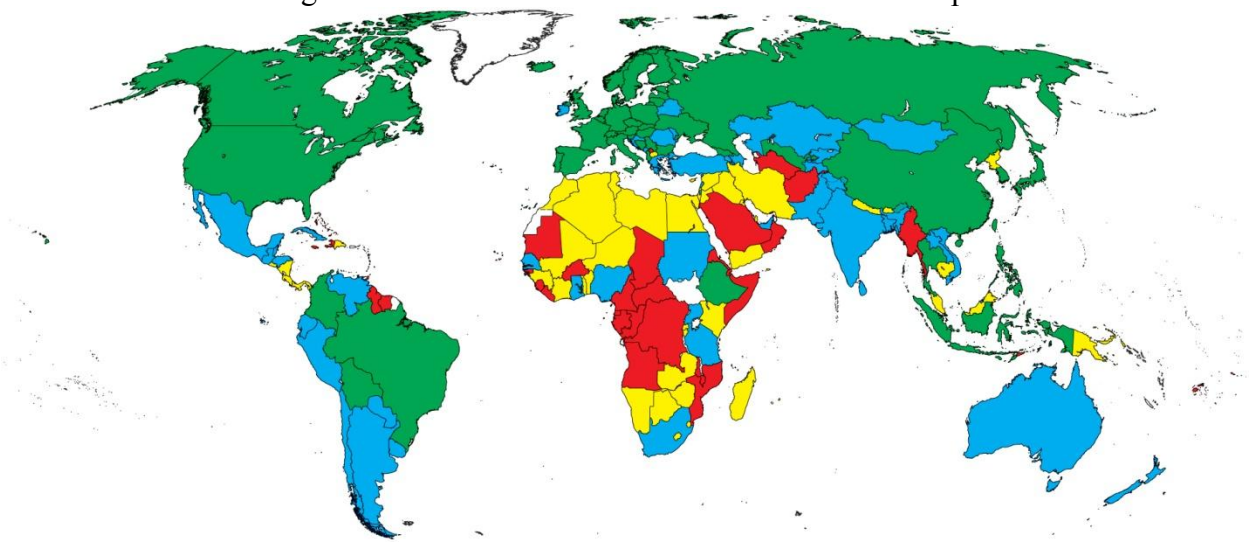
$$f(\frac{N}{2} - i, \alpha) = \ln(1 + \frac{A}{1-\alpha}\left(\frac{N}{2} - i\right)), \tag{9}$$

where parameter *A* allows us to control the sensitivity of our results to large differences in average LG unit population. Given *f*, the *AD* from (8) becomes:

$$\frac{2}{N}\int_{0}^{N/2} \ln(1 + \frac{A}{1-\alpha}\left(\frac{N}{2} - i\right))di = \ln(1 + \frac{A}{1-\alpha}\frac{N}{2}). \tag{10}$$

First, we assume there is no heterogeneity, i.e. α=0. By choosing different *A*'s we consider three scenarios: sensitive (*A*=0.01), moderate (*A*=0.1), and conservative (*A*=1). Then we introduce heterogeneity in the moderate scenario. First, our α is only based on the average LG unit area.

Figure 10: Government Closeness Index - World Map



Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note: Color of a country corresponds to its percentile in the world's distribution: red – 0-25th, yellow – 25-50th, blue – 50-75th, green – 75-100th.

Then the heterogeneity index is extended to account for additional variables. These are age, residency, income, ethnic, religious, linguistic structure of population, country's area, relief heterogeneity (difference between highest and lowest points), and climate heterogeneity (difference between highest and lowest latitude).

Table 13 presents top ten leaders in each of the five new indexes (columns 2-6), each corresponding to adjustments presented above. The decentralization index without adjustments is presented in column 1. As is suggested by the name, the conservative scenario adjustment (*A*=1) results in the smallest changes. Yet, Finland, Switzerland, USA, Iceland move up the ladder as the countries with traditionally small governments. On the other hand, countries with large average LG population e.g. China, Japan, and Republic of Korea have their rankings lowered. Moving from conservative to sensitive scenario, countries with small LG continue to get relatively higher indexes. Switzerland is the most decentralized country with this kind of adjustment, Iceland is the second. More European countries (Hungary, Georgia, Czech Republic) enter the list of leaders instead of Asian countries. Adjustment for area and heterogeneity do not change the ranking much, which may suggest that the adjustment procedure is too conservative. The only notable difference is that Switzerland gets lower index (moves down from 1st to 2nd place) because of its linguistic and ethnic heterogeneity. Figure 10 shows the distribution of our final Government Closeness Index in the world.

Table 13: Government Closeness Index: Adjusting decentralization index for population and heterogeneity

N	no adj.	sensitive ($A = 0.01$)	moderate ($A = 0.1$)	conservative ($A = 1$)	adj. area ($A = 0.1$)	heterogeneity ($A = 0.1$)
1	Denmark (34)	Switzerland (40)	Switzerland (31)	Denmark (31)	Switzerland (31)	Denmark (32)
2	Sweden (21)	Denmark (29)	Denmark (31)	Switzerland (27)	Denmark (31)	Switzerland (29)
3	Switzerland (20)	USA (21)	Sweden (20)	Sweden (20)	Sweden (20)	Sweden (20)
4	Hong Kong (17)	Finland (21)	Finland (19)	Finland (18)	Finland (19)	Finland (19)
5	Singapore (17)	Sweden (20)	USA (19)	USA (17)	USA (19)	USA (18)
6	Finland (16)	Iceland (19)	Norway (17)	Norway (16)	Norway (17)	Norway (17)
7	Japan (15)	Norway (18)	Iceland (16)	Iceland (14)	Iceland (15)	Iceland (16)
8	Norway (15)	Japan (13)	Japan (13)	Japan (14)	Japan (13)	Japan (13)
9	USA (14)	Austria (12)	Hong Kong (13)	Hong Kong (13)	Hong Kong (13)	Hong Kong (13)
10	Korea (12)	Hong Kong (11)	Singapore (11)	Singapore (12)	Singapore (11)	Singapore (11)

Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note In each column top ten most decentralized countries are presented. Indexes are adjusted for: columns 2-4 - only for average LG unit population, column 5 - for average LG unit population and area, 6 - for average LG unit population and heterogeneity index. The corresponding sensitivities (defined by parameter A) are in the brackets of column titles. The benchmark country is a hypothetical country with median parameters from the sample: $\bar{N} = 43253$, $\bar{area} = 0.076, \bar{\alpha} = 0.359$. The original decentralization index is presented in column 1.

Relationship of the Decentralization Indexes with Government Size, Incidence of Corruption, Ease of Doing Business and Incomes and Good Governance

In the Table 14 we present simple OLS regressions of our decentralization indexes (and *lg_expdec* - a standard measure of decentralization in the literature) on disaggregate decentralization indicators, corruption measures (TI corruption perception index), development measures (GDP per capita), size of the government (GG consumption, % of GDP), number of procedures in a country needed to start a new business (Start of business, # proc.), number of civil conflicts in a country (# civil conflicts), strength of country's democratic institutions (Democraty score), durability of political regime in a country (Durability of regime), and citizen-centric governance indicators (CGI) as reported in Ivanyna and Shah (2011). We report both regressions with no other controls apart from corresponding economic indicator and regressions, where we also control for level of development of a country (measured by GDP per capita). These regressions indicate that decentralized governance is associated with higher per capita GDP , lower incidence of corruption (higher corruption perception index), better environment for doing business, and higher durability of political regime - even controlling for the level of development. We also find that decentralization is associated with lower government

consumption, higher citizen-centric governance performance, and stronger democracy institutions, although the relationship with these variables looses significance (but keeps sign) when controlling for the level of development.

When decentralization is measured only by *lg_expdec* the statistical associations between decentralization and our selected economic indicators have generally lower significance (i.e. have lower t-statistics). At the same time, decentralization index adjusted for heterogeneity and LG population generally produces higher regression coefficients than unadjusted decentralization index.

Table 14: Decentralization and Closeness Indexes: Relationship with Selected Economic Indicators

right hand side var's	left hand side var's						descriptive statistics	
	lg_expdec		DI main		DI adj.		mean indep.var.	st. dev. indep. var
	no other cont.	cont. for GDP/ cap	no other cont.	cont. for GDP/ cap	no other cont.	cont. for GDP/ cap		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
DI political	20.51***	14.43***	7.29***	4.94***	8.10***	5.65***	.27	.24
	(3.02)	(3.67)	(1.29)	(1.05)	(1.63)	(1.34)		
DI fiscal	23.53***	20.38***	12.90***	11.58***	13.63***	12.07***	.33	.25
	(4.00)	(4.35)	(1.87)	(1.62)	(1.98)	(1.68)		
DI administrative	27.23***	26.18***	10.26***	8.71***	11.12***	9.43***	.3	.28
	(3.02)	(3.39)	(1.65)	(1.33)	(1.76)	(1.41)		
CGI	31.60	9.80	22.92*	10.97	27.57*	13.77	.55	.08
	(24.96)	(29.64)	(11.84)	(8.17)	(14.89)	(10.30)		
GDP/capita, PPP	0.26***		0.18***		0.21***		9.5	14.6
	(0.01)		(0.01)		(0.01)			
GG cons., % GDP	-0.05	0.10	-0.08***	0.00	-0.09**	0.01	18.5	9.4
	(0.11)	(0.10)	(0.03)	(0.02)	(0.03)	(0.03)		
Start of bus., # proc.	-0.68***	-0.44***	-0.29***	-0.13**	-0.29***	-0.11**	37.4	6.3
	(0.15)	(0.15)	(0.07)	(0.06)	(0.06)	(0.05)		
# civil conflicts	-0.36*	0.09	-0.08	0.10	-0.08	0.12	.9	2.6
	(0.21)	(0.26)	(0.06)	(0.08)	(0.07)	(0.08)		
Corruption perc. ind.	2.12***	1.10	1.31***	1.37***	1.42***	1.45***	4	2.1
	(0.53)	(0.95)	(0.26)	(0.36)	(0.28)	(0.37)		
Democracy score	0.09**	0.03	0.04***	0.01	0.04***	0.01	.97	18.8
	(0.04)	(0.04)	(0.01)	(0.01)	(0.01)	(0.01)		
Durab. of regime	0.08**	-0.00	0.07***	0.04**	0.08***	0.05**	22.6	30.4
	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)		

Note * - significant at 10% level, ** - significant at 5% level, *** - significant at 1% level. Abbreviation: *DI* - decentralization index. Corruption perception index (source - Transparency International), GDP per capita (source - WDI), GG consumption (source - Penn World Tables correspondingly), Start of business, # proc. (source - WB Doing Business), Democracy score (source - Polity IV), Durability of regime (source - Polity IV) are from 2005. CGI - citizen-centric governance indicators (source Ivanyna and Shah (2009)), # civil conflicts (source -WDI) are averages in 2000-2005.

PART IV

Concluding Remarks

The silent revolution of the past two decades has attracted strong policy and research attention worldwide. The assessment of the impact of this revolution in moving decision making closer to the people, however, remains an unanswered question. This paper takes an important first step in this direction by providing a framework of comparative measurement and developing worldwide ranking of countries on people empowerment on various aspects of government decision making. While there is a crying need for systematic collection of quality data needed for the application of the comparative framework presented here, the integration of available diverse dataset as done here has yielded promising results. For example, the closeness indexes presented here show that one could have predicted well in advance with a fair degree of accuracy countries that were ripe for popular people revolt such as the one experienced through the Arab Spring or similar movements across the globe. The indexes also provide useful barometers of the enabling environment for doing business or promoting growth and economic development and good governance. Overall they provide useful aggregate measures of government closeness to their people. We hope this paper will stimulate further research to improve upon the data and the methodology presented here as well as facilitate building common consensus in countries poorly ranked here for fundamental governance reforms.

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Appendix

Tables with Data

Table A1: Data sources

Variable	Source
	Decentralization variables
all variables	(in the order of frequency of use) United Cities and Local Governments (UCLG) (2008), IMF's Government Finance Statistics (GFS) (http://www2.imfstatistics.org/GFS/logon.aspx), Shah (2006), Commonwealth Local Government Initiative (CLGI) country profiles (http://www.clgf.org.uk), Eckardt and Shah (2008), Shah et al. (2004), UN Public Administration Program (UNPAN) public administration country profiles (http://www.unpan.org), Program on Governance in Arab Countries (POGAR) (http://www.pogar.org), White and Smoke (2005), official web-sites of ministries of local government, ministries of finance
	Variables for heterogeneity index
age 0-14, 15-65, ¿65, % population	WB World Development Indicators (http://data.worldbank.org)
% urban population	WB World Development Indicators (http://data.worldbank.org)
GINI index	United Nations Development Project (UNDP) Human Development Indices (http://data.un.org)
ethnic, religious, linguistic fractionalization	Alesina et al. (2003)
country area	WB World Development Indicators (http://data.worldbank.org)
highest and lowest geographical points	CIA World Factbook (https://www.cia.gov/library/publications/the-world-factbook)
highest and lowest latitude	own observations on political map of the world

Note: Data sources for variables, which are used in the paper. Abbreviations used: *LG* - local government, *CG* - central government, *GG* - general government.

Table A2: Country Rankings: Decentralization indexes (sorted by Government Closeness Index)

pos	country	LG RI	LG SE	FDI	PDI	ADI	DI	GCI
1	Denmark	0.59	1.00	0.9	0.58	0.9	34.03	31.49
2	Switzerland	0.22	1.00	0.96	1	0.9	19.84	29.82
3	Sweden	0.44	1.00	0.77	0.54	0.9	20.71	20.22
4	Finland	0.37	0.75	0.76	0.67	0.9	16.04	19.18
5	United States	0.24	0.75	0.9	1	0.75	14.19	17.56
6	Norway	0.32	1.00	0.74	0.58	0.9	15.11	16.9
7	Iceland	0.27	0.75	0.79	0.75	0.65	10.53	15.62
8	Japan	0.41	0.75	0.68	1	0.56	15.31	13.49
9	Hong Kong, China	0.50	0.50	1	0.67	0.65	17.29	13.39
10	Singapore	0.50	0.50	1	0.67	0.65	17.29	11.19
11	Austria	0.14	1.00	0.76	0.75	0.7	6.68	9.85

Table A2: (continued)

pos	country	LG RI	LG SE	FDI	PDI	ADI	DI	GCI
12	Korea, Rep.	0.41	0.75	0.7	0.75	0.53	12.33	9.85
13	Canada	0.17	0.75	0.9	0.83	0.75	8.69	9.32
14	Hungary	0.26	0.50	0.62	0.75	0.82	6.91	9.27
15	Brazil	0.15	1.00	0.78	0.83	0.7	8.09	8.1
16	Poland	0.29	0.75	0.62	0.58	0.7	7.93	8.1
17	Georgia	0.26	0.50	0.78	0.42	0.69	5.48	6.75
18	France	0.18	0.50	0.75	0.58	0.66	4.35	5.98
19	Germany	0.15	0.75	0.67	0.75	0.64	4.86	5.75
20	Czech Republic	0.20	0.50	0.73	0.58	0.45	3.71	5.5
21	China	0.51	0.50	0.57	0.25	0.71	6.32	5.46
22	Latvia	0.26	0.50	0.53	0.5	0.7	4.11	5.17
23	Colombia	0.30	0.50	0.55	0.67	0.55	5.23	4.85
24	Italy	0.30	0.50	0.49	0.83	0.35	4.07	4.5
25	Belgium	0.13	0.75	0.72	0.67	0.67	4.23	4.41
26	Ukraine	0.28	0.50	0.35	0.64	0.74	3.65	4.31
27	Philippines	0.16	0.50	0.5	0.75	0.64	3.02	3.97
28	Netherlands	0.35	0.50	0.36	0.5	0.7	3.81	3.62
29	Bolivia	0.29	0.50	0.4	0.71	0.54	3.68	3.51
30	United Kingdom	0.28	0.50	0.52	0.67	0.51	4.29	3.41
31	Lithuania	0.23	0.50	0.39	0.75	0.7	3.46	3.39
32	Albania	0.16	0.50	0.63	0.33	0.9	2.99	3.25
33	Slovenia	0.17	0.50	0.39	0.75	0.7	2.59	3.24
34	Luxembourg	0.11	0.50	0.89	0.58	0.35	2.16	3.13
35	Slovak Republic	0.12	0.50	0.56	0.75	0.46	2.09	3.03
36	Portugal	0.12	0.50	0.56	0.75	0.59	2.29	3.03
37	Bosnia and Herzegovina	0.11	0.50	0.76	0.75	0.65	3.06	2.97
38	Thailand	0.25	0.50	0.46	0.58	0.35	2.55	2.88
39	Russian Federation	0.32	0.50	0.34	0.71	0.25	2.31	2.65
40	Indonesia	0.32	0.50	0.5	0.53	0.39	3.48	2.65
41	Spain	0.13	0.50	0.74	0.5	0.37	2.06	2.48
42	Estonia	0.26	0.75	0.23	0.42	0.58	1.83	2.21
43	Bulgaria	0.16	0.50	0.32	0.75	0.7	2.07	2.18
44	Uzbekistan	0.55	0.25	0.18	0.53	0.5	1.7	2.17
45	Serbia	0.16	0.25	0.69	0.75	0.48	2.33	2.13
46	Ethiopia	0.22	0.75	0.36	0.5	0.45	2.37	2.1
47	New Zealand	0.09	0.50	0.79	0.67	0.55	2.21	2.01
48	Chile	0.13	0.50	0.57	0.5	0.62	2.09	1.89
49	Moldova	0.25	0.50	0.18	0.5	0.84	1.56	1.89
50	Romania	0.19	0.25	0.43	0.58	0.45	1.46	1.73
51	Montenegro	0.25	0.50	0.16	0.75	0.7	1.54	1.72
52	West Bank and Gaza	0.40	0.25	0.34	0.25	0.5	1.64	1.61
53	Australia	0.06	0.50	0.78	0.67	0.56	1.54	1.58
54	South Africa	0.18	0.50	0.58	0.42	0.4	2.03	1.56
55	Nigeria	0.41	0.50	0.24	0.67	0.2	1.87	1.54
56	Uganda	0.29	0.50	0.2	0.75	0.49	1.87	1.46
57	Peru	0.15	0.25	0.37	0.75	0.65	1.46	1.44
58	United Arab Emirates	0.50	0.00	0.56	0.42	0.25	1.73	1.33
59	Croatia	0.09	0.50	0.41	0.58	0.59	1.14	1.32
60	Vietnam	0.35	0.25	0.16	0.58	0.55	1.14	1.24
61	Pakistan	0.13	0.50	0.5	0.56	0.35	1.35	1.24
62	Ecuador	0.15	0.25	0.44	0.67	0.5	1.37	1.23
63	Argentina	0.07	0.50	0.53	0.75	0.4	1.1	1.23
64	Armenia	0.07	0.50	0.46	0.33	0.88	0.87	1.16
65	Mongolia	0.23	0.25	0.36	0.42	0.2	0.8	1.14
66	Uruguay	0.15	0.25	0.55	0.83	0.17	1.19	1.03
67	Belarus	0.38	0.00	0.22	0.42	0.42	0.68	0.78
68	India	0.05	0.50	0.48	0.67	0.35	0.58	0.78
69	Kazakhstan	0.38	0.00	0.37	0.33	0.2	0.72	0.77
70	Tanzania	0.23	0.25	0.21	0.5	0.32	0.63	0.77
71	Paraguay	0.09	0.25	0.39	0.67	0.55	0.72	0.71
72	Turkey	0.07	0.50	0.46	0.58	0.31	0.69	0.7
73	Ireland	0.29	0.00	0.27	0.58	0.31	0.64	0.67
74	Cuba	0.38	0.00	0.28	0.67	0.15	0.74	0.66
75	Tajikistan	0.33	0.00	0.22	0.25	0.2	0.31	0.41
76	Bangladesh	0.10	0.25	0.45	0.25	0.35	0.44	0.4
77	Greece	0.05	0.50	0.34	0.83	0.13	0.33	0.37
78	Honduras	0.10	0.25	0.29	0.42	0.31	0.35	0.35
79	Lao PDR	0.26	0.00	0.17	0.53	0.04	0.2	0.34

Table A2: (continued)

pos	country	LG RI	LG SE	FDI	PDI	ADI	DI	GCI
80	Sudan	0.15	0.25	0.22	0.39	0.38	0.41	0.32
81	Mexico	0.04	0.25	0.42	0.83	0.28	0.32	0.31
82	Kyrgyz Republic	0.26	0.00	0.22	0.28	0.27	0.3	0.31
83	Venezuela	0.05	0.25	0.48	0.67	0.15	0.28	0.25
84	Belize	0.10	0.10	0.19	0.39	0.35	0.17	0.24
85	Azerbaijan	0.01	0.50	0.41	0.5	0.75	0.16	0.21
86	Guatemala	0.12	0.25	0.18	0.33	0.3	0.22	0.21
87	Lebanon	0.10	0.25	0.21	0.5	0.06	0.17	0.2
88	Senegal	0.05	0.25	0.24	0.42	0.54	0.18	0.17
89	Ghana	0.05	0.25	0.41	0.33	0.3	0.21	0.17
90	Sri Lanka	0.05	0.25	0.22	0.47	0.59	0.2	0.17
91	Brunei Darrusalam	0.50	0.00	0.06	0.67	0	0.15	0.17
92	Morocco	0.07	0.00	0.26	0.5	0.39	0.15	0.15
93	Costa Rica	0.03	0.50	0.49	0.31	0.02	0.14	0.15
94	Israel	0.11	0.00	0.2	0.67	0.08	0.13	0.14
95	El Salvador	0.05	0.25	0.39	0.42	0	0.13	0.13
96	Korea, Dem. Rep.	0.10	0.00	0.22	0.5	0.08	0.1	0.12
97	Malaysia	0.04	0.25	0.41	0.08	0.54	0.14	0.12
98	Seyshelles	0.50	0.00	0.06	0.17	0	0.07	0.11
99	Kenya	0.05	0.25	0.36	0.33	0.15	0.14	0.1
100	Iran, Islamic Rep.	0.03	0.25	0.6	0.21	0.05	0.1	0.1
101	Botswana	0.05	0.25	0.16	0.33	0.37	0.09	0.08
102	Tunisia	0.03	0.00	0.34	0.5	0.28	0.08	0.08
103	Iraq	0.10	0.25	0.06	0.5	0.3	0.08	0.07
104	Cyprus	0.03	0.00	0.22	0.75	0	0.04	0.07
105	Zimbabwe	0.10	0.00	0.17	0.42	0.1	0.08	0.07
106	Cote d'Ivoire	0.05	0.25	0.13	0.39	0.27	0.07	0.06
107	Papua New Guinea	0.05	0.25	0.14	0.5	0.05	0.05	0.05
108	Macedonia	0.05	0.00	0.19	0.75	0.01	0.05	0.05
109	Bhutan	0.05	0.00	0.16	0.58	0.05	0.04	0.05
110	Algeria	0.05	0.00	0.24	0.28	0.14	0.05	0.05
111	Nepal	0.03	0.00	0.22	0.75	0.03	0.04	0.05
112	Togo	0.02	0.00	0.44	0.75	0.12	0.06	0.05
113	Dominican Republic	0.07	0.00	0.14	0.58	0.04	0.05	0.04
114	Egypt	0.04	0.25	0.1	0.33	0.28	0.04	0.04
115	Libya	0.05	0.25	0.11	0.67	0.05	0.05	0.04
116	Jordan	0.05	0.00	0.16	0.13	0.5	0.04	0.04
117	Mauritius	0.04	0.00	0.17	0.5	0.05	0.03	0.04
118	Madagascar	0.02	0.00	0.13	0.75	0.35	0.03	0.03
119	Nicaragua	0.04	0.00	0.16	0.75	0.05	0.04	0.03
120	Syrian Arab Republic	0.05	0.00	0.16	0.25	0.12	0.03	0.03
121	Cambodia	0.02	0.00	0.2	0.33	0.28	0.02	0.03
122	Rwanda	0.04	0.25	0.08	0.53	0.04	0.03	0.03
123	Kuwait	0.10	0.00	0.11	0.17	0	0.03	0.02
124	Panama	0.04	0.00	0.2	0.33	0.03	0.03	0.02
125	Benin	0.04	0.00	0.23	0.25	0.01	0.03	0.02
126	Zambia	0.02	0.00	0.31	0.25	0.13	0.03	0.02
127	Guinea	0.02	0.00	0.22	0.21	0.25	0.02	0.02
128	Niger	0.01	0.00	0.44	0.39	0.03	0.02	0.02
129	Qatar	0.05	0.00	0.12	0.33	0	0.02	0.02
130	Namibia	0.02	0.00	0.11	0.58	0.28	0.02	0.02
131	Burundi	0.04	0.00	0.14	0.33	0.05	0.02	0.02
132	Yemen	0.05	0.25	0.08	0.17	0	0.02	0.01
133	Mali	0.04	0.00	0.11	0.44	0	0.02	0.01
134	Macao, China	0.07	0.00	0.13	0	0	0.01	0.01
135	Swaziland	0.02	0.00	0.22	0.13	0.03	0.01	0.01
136	Lesotho	0.02	0.00	0.38	0	0.03	0.01	0.01
137	Cape Verde	0.05	0.00	0.06	0.17	0.08	0.01	0.01
138	Congo, Dem. Rep.	0.04	0.00	0.12	0.17	0.05	0.01	0.01
139	Somalia	0.05	0.25	0.06	0.17	0	0.01	0.01
140	Malawi	0.02	0.00	0.13	0.67	0	0.01	0.01
141	Congo, Rep.	0.02	0.00	0.15	0.17	0.05	0.01	0.01
142	Cameroon	0.02	0.00	0.12	0.42	0.05	0.01	0.01
143	Liberia	0.05	0.00	0.11	0	0.05	0.01	0.01
144	Burkina Faso	0.03	0.00	0.08	0.5	0.08	0.01	0.01
145	Jamaica	0.01	0.00	0.22	0.5	0.03	0.01	0.01
146	Malta	0.01	0.00	0.1	0.58	0	0.01	0.01
147	Mauritania	0.02	0.00	0.13	0.33	0	0.01	0.01

Table A2: (continued)

pos	country	LG RI	LG SE	FDI	PDI	ADI	DI	GCI
148	Chad	0.02	0.00	0.1	0.39	0.05	0.01	0.01
149	Sierra Leone	0.02	0.25	0.06	0.25	0	0.01	0.01
150	Saudi Arabia	0.05	0.00	0.06	0.08	0.05	0.01	0.01
151	Guinea-Bissau	0.05	0.00	0.06	0	0.13	0.01	0.01
152	Oman	0.05	0.00	0.06	0	0.05	0.01	0.01
153	Angola	0.02	0.00	0.14	0	0.07	0.01	0
154	Central African Republic	0.02	0.00	0.1	0	0.05	0	0
155	Afghanistan	0.01	0.00	0.18	0	0.05	0.00	0
156	Eritrea	0.02	0.00	0.06	0	0	0	0
157	Suriname	0.00	0.00	0.06	0.33	0	0	0
158	Bahamas		0.00	0.06	0.42	0	0	0
159	Bahrain		0.00	0.11	0.33	0.1	0	0
160	Barbados		0.00	0.06	0	0	0	0
161	Comoros		0.00	0.11	0.67	0.25	0	0
162	Djibouti		0.00	0.06	0.5	0	0	0
163	Dominica		0.00	0.16	0.33	0	0	0
164	Equatorial Guinea		0.00	0.06	0.44	0	0	0
165	Fiji		0.00	0.06	0.46	0.02	0	0
166	Gabon		0.00	0.22	0.5	0	0	0
167	Gambia		0.00	0.06	0.67	0.3	0	0
168	Grenada		0.00	0.06	0	0	0	0
169	Guyana	0.00	0.00	0.06	0.5	0.18	0	0
170	Haiti	0.00	0.00	0.06	0	0	0	0
171	Kosovo	0.30	0.00	0.19	0.67	0.45	0.62	0
172	Mozambique	0.00	0.00	0.41	0.17	0	0	0
173	Myanmar	0.00	0.00	0.09	0	0	0	0
174	Netherlands Antilles		0.00	0.06	0.67	0	0	0
175	Samoa		0.00	0.06	0	0	0	0
176	Sao Tome and Principe		0.00	0.06	0.5	0	0	0
177	St. Lucia		0.00	0.06	0.58	0	0	0
178	St. Vincent and Grenadines		0.00	0.06	0.17	0	0	0
179	Taiwan	0.20	0.25	0.56	0.67	0	0.92	0
180	Timor-Leste		0.00	0.13	0	0.1	0	0
181	Trinidad and Tobago		0.00	0.11	0.5	0	0	0
182	Turkmenistan		0.00	0.18	0.36	0.15	0	0

Source: Authors' calculations based upon data sources reported in Annex Table A1.
Note: LG SE - LG security of existence as defined in Table 3; *LG RI* - LG relative importance as defined in Table 3; *FDI* - fiscal decentralization index as defined by equation (3); *PDI* - political decentralization index as defined by equation (4); *ADI* - administrative decentralization index as defined by equation (5), *DI* - decentralization index as defined by equation (6); *GCI* - Government Closeness Index: decentralization index (DI) adjusted for an average LG unit population, average LG unit area, and heterogeneity of a country, moderate scenario, as defined by equation (7).

Table A3: Country Rankings on Relative Importance of Local Governments

pos	country	pos	country	pos	country
1	Denmark	62	Croatia	123	Syrian Arab Republic
2	Sweden	63	Vietnam	124	Madagascar
3	Switzerland	64	Argentina	125	Panama
4	Hong Kong, China	65	Taiwan	126	Kuwait
5	Singapore	66	Armenia	127	Rwanda
6	Finland	67	Mongolia	128	Cambodia
7	Japan	68	Cuba	129	Niger
8	Norway	69	Kazakhstan	130	Burundi
9	United States	70	Paraguay	131	Guinea
10	Korea, Rep.	71	Turkey	132	Qatar
11	Iceland	72	Belarus	133	Namibia
12	Canada	73	Ireland	134	Yemen
13	Brazil	74	Tanzania	135	Mali
14	Poland	75	Kosovo	136	Macao, China
15	Hungary	76	India	137	Somalia
16	Austria	77	Bangladesh	138	Congo, Dem. Rep.
17	China	78	Sudan	139	Swaziland
18	Georgia	79	Honduras	140	Malawi
19	Colombia	80	Greece	141	Lesotho
20	Germany	81	Mexico	142	Liberia
21	France	82	Tajikistan	143	Burkina Faso
22	United Kingdom	83	Kyrgyz Republik	144	Cameroon
23	Belgium	84	Venezuela	145	Congo, Rep.
24	Latvia	85	Guatemala	146	Jamaica
25	Italy	86	Ghana	147	Cape Verde
26	Netherlands	87	Lao PDR	148	Chad
27	Czech Republik	88	Sri Lanka	149	Mauritania
28	Bolivia	89	Senegal	150	Saudi Arabia
29	Ukraine	90	Belize	151	Guinea-Bissau
30	Indonesia	91	Lebanon	152	Sierra Leone
31	Lithuania	92	Azerbaijan	153	Oman
32	Bosnia and Herzegovina	93	Morocco	154	Malta
33	Philippines	94	Brunei Darrusalam	155	Angola
34	Albania	95	Malaysia	156	Central African Republic
35	Slovenia	96	Kenya	157	Afghanistan
36	Thailand	97	Costa Rica	158	Eritrea
37	Ethiopia	98	Israel	159	Suriname
38	Serbia	99	El Salvador	160	Gambia
39	Russian Federation	100	Korea, Dem. Rep.	161	Comoros
40	Portugal	101	Iran, Islamic Rep.	162	Guyana
41	New Zealand	102	Botswana	163	Turkmenistan
42	Luxembourg	103	Tunisia	164	Timor-Leste
43	Chile	104	Iraq	165	Bahrain
44	Slovak Republik	105	Zimbabwe	166	Fiji
45	Bulgaria	106	Seyshelles	167	Mozambique
46	Spain	107	Cote d'Ivoire	168	Gabon
47	South Africa	108	Togo	169	Dominica
48	Nigeria	109	Papua New Guinea	170	Trinidad and Tobago
49	Uganda	110	Libya	171	Myanmar
50	Estonia	111	Algeria	172	Netherlands Antilles
51	United Arab Emirates	112	Macedonia	173	St. Lucia
52	Uzbekistan	113	Dominican Republik	174	Djibouti
53	West Bank and Gaza	114	Egypt	175	Sao Tome and Principe
54	Moldova	115	Jordan	176	Equatorial Guinea
55	Australia	116	Nepal	177	Bahamas
56	Montenegro	117	Bhutan	178	St. Vincent and Grenadines
57	Romania	118	Cyprus	179	Barbados
58	Peru	119	Nicaragua	180	Grenada
59	Ecuador	120	Mauritius	181	Haiti
60	Pakistan	121	Benin	182	Samoa
61	Uruguay	122	Zambia		

Source: Authors' calculations based upon data sources reported in Annex Table A1.

Table A4: Country Rankings on Security of Existence of Local Governments

pos	country	pos	country	pos	country
1	Austria	62	Bangladesh	123	Dominican Republic
2	Brazil	63	Botswana	124	Equatorial Guinea
3	Denmark	64	Cote d'Ivoire	125	Eritrea
4	Norway	65	Ecuador	126	Fiji
5	Sweden	66	Egypt	127	Gabon
6	Switzerland	67	El Salvador	128	Gambia
7	Belgium	68	Ghana	129	Grenada
8	Canada	69	Guatemala	130	Guinea
9	Estonia	70	Honduras	131	Guinea-Bissau
10	Ethiopia	71	Iran, Islamic Rep.	132	Guyana
11	Finland	72	Iraq	133	Haiti
12	Germany	73	Kenya	134	Ireland
13	Iceland	74	Lebanon	135	Israel
14	Japan	75	Libya	136	Jamaica
15	Korea, Rep.	76	Malaysia	137	Jordan
16	Poland	77	Mexico	138	Kazakhstan
17	United States	78	Mongolia	139	Korea, Dem. Rep.
18	Albania	79	Papua New Guinea	140	Kosovo
19	Argentina	80	Paraguay	141	Kuwait
20	Armenia	81	Peru	142	Kyrgyz Republic
21	Australia	82	Romania	143	Lao PDR
22	Azerbaijan	83	Rwanda	144	Lesotho
23	Bolivia	84	Senegal	145	Liberia
24	Bosnia and Herzegovina	85	Serbia	146	Macao, China
25	Bulgaria	86	Sierra Leone	147	Macedonia
26	Chile	87	Somalia	148	Madagascar
27	China	88	Sri Lanka	149	Malawi
28	Colombia	89	Sudan	150	Mali
29	Costa Rica	90	Taiwan	151	Malta
30	Croatia	91	Tanzania	152	Mauritania
31	Czech Republic	92	Uruguay	153	Mauritius
32	France	93	Uzbekistan	154	Morocco
33	Georgia	94	Venezuela	155	Mozambique
34	Greece	95	Vietnam	156	Myanmar
35	Hong Kong, China	96	West Bank and Gaza	157	Namibia
36	Hungary	97	Yemen	158	Nepal
37	India	98	Belize	159	Netherlands Antilles
38	Indonesia	99	Afghanistan	160	Nicaragua
39	Italy	100	Algeria	161	Niger
40	Latvia	101	Angola	162	Oman
41	Lithuania	102	Bahamas	163	Panama
42	Luxembourg	103	Bahrain	164	Qatar
43	Moldova	104	Barbados	165	Samoa
44	Montenegro	105	Belarus	166	Sao Tome and Principe
45	Netherlands	106	Benin	167	Saudi Arabia
46	New Zealand	107	Bhutan	168	Seyshelles
47	Nigeria	108	Brunei Darrusalam	169	St. Lucia
48	Pakistan	109	Burkina Faso	170	St. Vincent and Grenadines
49	Philippines	110	Burundi	171	Suriname
50	Portugal	111	Cambodia	172	Swaziland
51	Russian Federation	112	Cameroon	173	Syrian Arab Republic
52	Singapore	113	Cape Verde	174	Tajikistan
53	Slovak Republic	114	Central African Republic	175	Timor-Leste
54	Slovenia	115	Chad	176	Togo
55	South Africa	116	Comoros	177	Trinidad and Tobago
56	Spain	117	Congo, Dem. Rep.	178	Tunisia
57	Thailand	118	Congo, Rep.	179	Turkmenistan
58	Turkey	119	Cuba	180	United Arab Emirates
59	Uganda	120	Cyprus	181	Zambia
60	Ukraine	121	Djibouti	182	Zimbabwe
61	United Kingdom	122	Dominica		

Source: Authors' calculations based upon data sources reported in Annex Table A1.

Table A5: Country Rankings on Fiscal Decentralization Index

pos	country	pos	country	pos	country
1	Hong Kong, China	62	Mozambique	123	Montenegro
2	Singapore	63	Bolivia	124	Nicaragua
3	Switzerland	64	Lithuania	125	Dominica
4	United States	65	Slovenia	126	Syrian Arab Republic
5	Denmark	66	El Salvador	127	Jordan
6	Canada	67	Paraguay	128	Congo, Rep.
7	Luxembourg	68	Lesotho	129	Dominican Republik
8	Iceland	69	Kazakhstan	130	Papua New Guinea
9	New Zealand	70	Peru	131	Burundi
10	Australia	71	Kenya	132	Angola
11	Georgia	72	Netherlands	133	Macao, China
12	Brazil	73	Mongolia	134	Madagascar
13	Sweden	74	Ethiopia	135	Malawi
14	Bosnia and Herzegovina	75	Ukraine	136	Cote d'Ivoire
15	Finland	76	Tunisia	137	Mauritania
16	Austria	77	West Bank and Gaza	138	Timor-Leste
17	France	78	Russian Federation	139	Cameroon
18	Spain	79	Greece	140	Qatar
19	Norway	80	Bulgaria	141	Congo, Dem. Rep.
20	Czech Republik	81	Zambia	142	Comoros
21	Belgium	82	Honduras	143	Libya
22	Korea, Rep.	83	Cuba	144	Namibia
23	Serbia	84	Ireland	145	Trinidad and Tobago
24	Japan	85	Morocco	146	Mali
25	Germany	86	Nigeria	147	Bahrain
26	Albania	87	Senegal	148	Kuwait
27	Poland	88	Algeria	149	Liberia
28	Hungary	89	Benin	150	Chad
29	Iran, Islamic Rep.	90	Estonia	151	Egypt
30	South Africa	91	Belarus	152	Central African Republic
31	Chile	92	Tajikistan	153	Malta
32	China	93	Swaziland	154	Myanmar
33	Slovak Republik	94	Kyrgyz Republik	155	Rwanda
34	Taiwan	95	Cyprus	156	Burkina Faso
35	United Arab Emirates	96	Nepal	157	Yemen
36	Portugal	97	Gabon	158	Brunei Darrusalam
37	Colombia	98	Jamaica	159	Gambia
38	Uruguay	99	Korea, Dem. Rep.	160	Netherlands Antilles
39	Latvia	100	Sri Lanka	161	St. Lucia
40	Argentina	101	Sudan	162	Djibouti
41	United Kingdom	102	Guinea	163	Guyana
42	Philippines	103	Lebanon	164	Iraq
43	Pakistan	104	Tanzania	165	Sao Tome and Principe
44	Indonesia	105	Panama	166	Fiji
45	Italy	106	Uganda	167	Equatorial Guinea
46	Costa Rica	107	Israel	168	Bahamas
47	India	108	Cambodia	169	Suriname
48	Venezuela	109	Macedonia	170	Sierra Leone
49	Thailand	110	Kosovo	171	Cape Verde
50	Armenia	111	Belize	172	Seyshelles
51	Turkey	112	Moldova	173	Somalia
52	Bangladesh	113	Afghanistan	174	St. Vincent and Grenadines
53	Togo	114	Uzbekistan	175	Saudi Arabia
54	Ecuador	115	Turkmenistan	176	Barbados
55	Niger	116	Guatemala	177	Eritrea
56	Romania	117	Zimbabwe	178	Grenada
57	Mexico	118	Lao PDR	179	Guinea-Bissau
58	Azerbaijan	119	Mauritius	180	Haiti
59	Malaysia	120	Vietnam	181	Oman
60	Croatia	121	Bhutan	182	Samoa
61	Ghana	122	Botswana		

Source: Authors' calculations based upon data sources reported in Annex Table A1.

Table A6: Country Rankings on Political Decentralization Index

pos	country	pos	country	pos	country
1	Japan	62	Denmark	123	Niger
2	Switzerland	63	Dominican Republik	124	Belize
3	United States	64	France	125	Turkmenistan
4	Brazil	65	Ireland	126	Albania
5	Canada	66	Luxembourg	127	Armenia
6	Greece	67	Malta	128	Bahrain
7	Italy	68	Namibia	129	Botswana
8	Mexico	69	Norway	130	Burundi
9	Uruguay	70	Poland	131	Cambodia
10	Argentina	71	Romania	132	Dominica
11	Austria	72	St. Lucia	133	Egypt
12	Bosnia and Herzegovina	73	Thailand	134	Ghana
13	Bulgaria	74	Turkey	135	Guatemala
14	Cyprus	75	Vietnam	136	Kazakhstan
15	Germany	76	Pakistan	137	Kenya
16	Hungary	77	Sweden	138	Mauritania
17	Iceland	78	Lao PDR	139	Panama
18	Korea, Rep.	79	Rwanda	140	Qatar
19	Lithuania	80	Uzbekistan	141	Suriname
20	Macedonia	81	Indonesia	142	Costa Rica
21	Madagascar	82	Azerbaijan	143	Algeria
22	Montenegro	83	Burkina Faso	144	Kyrgyz Republik
23	Nepal	84	Chile	145	Bangladesh
24	Nicaragua	85	Djibouti	146	Benin
25	Peru	86	Ethiopia	147	China
26	Philippines	87	Gabon	148	Sierra Leone
27	Portugal	88	Guyana	149	Syrian Arab Republic
28	Serbia	89	Iraq	150	Tajikistan
29	Slovak Republik	90	Jamaica	151	West Bank and Gaza
30	Slovenia	91	Korea, Dem. Rep.	152	Zambia
31	Togo	92	Latvia	153	Guinea
32	Uganda	93	Lebanon	154	Iran, Islamic Rep.
33	Bolivia	94	Mauritius	155	Cape Verde
34	Russian Federation	95	Moldova	156	Congo, Dem. Rep.
35	Australia	96	Morocco	157	Congo, Rep.
36	Belgium	97	Netherlands	158	Kuwait
37	Brunei Darrusalam	98	Papua New Guinea	159	Mozambique
38	Colombia	99	Sao Tome and Principe	160	Seyshelles
39	Comoros	100	Spain	161	Somalia
40	Cuba	101	Tanzania	162	St. Vincent and Grenadines
41	Ecuador	102	Trinidad and Tobago	163	Yemen
42	Finland	103	Tunisia	164	Jordan
43	Gambia	104	Sri Lanka	165	Swaziland
44	Hong Kong, China	105	Fiji	166	Malaysia
45	India	106	Equatorial Guinea	167	Saudi Arabia
46	Israel	107	Mali	168	Afghanistan
47	Kosovo	108	Bahamas	169	Angola
48	Libya	109	Belarus	170	Barbados
49	Malawi	110	Cameroon	171	Central African Republic
50	Netherlands Antilles	111	El Salvador	172	Eritrea
51	New Zealand	112	Estonia	173	Grenada
52	Nigeria	113	Georgia	174	Guinea-Bissau
53	Paraguay	114	Honduras	175	Haiti
54	Singapore	115	Mongolia	176	Lesotho
55	Taiwan	116	Senegal	177	Liberia
56	United Kingdom	117	South Africa	178	Macao, China
57	Venezuela	118	United Arab Emirates	179	Myanmar
58	Ukraine	119	Zimbabwe	180	Oman
59	Bhutan	120	Chad	181	Samoa
60	Croatia	121	Sudan	182	Timor-Leste
61	Czech Republik	122	Cote d'Ivoire		

Source: Authors' calculations based upon data sources reported in Annex Table A1.

Table A7: Country Rankings on Administrative Decentralization Index

pos	country	pos	country	pos	country
1	Switzerland	62	South Africa	123	Nicaragua
2	Denmark	63	Argentina	124	Congo, Rep.
3	Sweden	64	Indonesia	125	Papua New Guinea
4	Finland	65	Morocco	126	Burundi
5	Norway	66	Sudan	127	Cameroon
6	Albania	67	Spain	128	Congo, Dem. Rep.
7	Armenia	68	Botswana	129	Libya
8	Moldova	69	Luxembourg	130	Liberia
9	Hungary	70	Pakistan	131	Chad
10	United States	71	India	132	Central African Republic
11	Canada	72	Thailand	133	Saudi Arabia
12	Azerbaijan	73	Bangladesh	134	Oman
13	Ukraine	74	Belize	135	Mauritius
14	China	75	Madagascar	136	Bhutan
15	Brazil	76	Italy	137	Dominican Republik
16	Austria	77	Tanzania	138	Lao PDR
17	Poland	78	Turkey	139	Rwanda
18	Latvia	79	Honduras	140	Niger
19	Lithuania	80	Ireland	141	Lesotho
20	Slovenia	81	Ghana	142	Swaziland
21	Netherlands	82	Guatemala	143	Nepal
22	Bulgaria	83	Iraq	144	Jamaica
23	Montenegro	84	Gambia	145	Panama
24	Georgia	85	Egypt	146	Costa Rica
25	Belgium	86	Cambodia	147	Fiji
26	France	87	Tunisia	148	Macedonia
27	Hong Kong, China	88	Mexico	149	Benin
28	Singapore	89	Namibia	150	Taiwan
29	Iceland	90	Kyrgyz Republik	151	Mozambique
30	Bosnia and Herzegovina	91	Cote d'Ivoire	152	El Salvador
31	Peru	92	United Arab Emirates	153	Cyprus
32	Germany	93	Russian Federation	154	Gabon
33	Philippines	94	Guinea	155	Dominica
34	Chile	95	Comoros	156	Macao, China
35	Croatia	96	Kazakhstan	157	Malawi
36	Portugal	97	Mongolia	158	Mauritania
37	Sri Lanka	98	Nigeria	159	Qatar
38	Estonia	99	Tajikistan	160	Trinidad and Tobago
39	Japan	100	Guyana	161	Mali
40	Australia	101	Uruguay	162	Kuwait
41	New Zealand	102	Venezuela	163	Malta
42	Colombia	103	Cuba	164	Myanmar
43	Paraguay	104	Turkmenistan	165	Yemen
44	Vietnam	105	Kenya	166	Brunei Darrusalam
45	Senegal	106	Algeria	167	Netherlands Antilles
46	Bolivia	107	Zambia	168	St. Lucia
47	Malaysia	108	Guinea-Bissau	169	Djibouti
48	Korea, Rep.	109	Greece	170	Sao Tome and Principe
49	United Kingdom	110	Togo	171	Equatorial Guinea
50	Ecuador	111	Syrian Arab Republic	172	Bahamas
51	West Bank and Gaza	112	Zimbabwe	173	Suriname
52	Uzbekistan	113	Timor-Leste	174	Sierra Leone
53	Jordan	114	Bahrain	175	Seyshelles
54	Uganda	115	Cape Verde	176	Somalia
55	Serbia	116	Korea, Dem. Rep.	177	St. Vincent and Grenadines
56	Slovak Republik	117	Israel	178	Barbados
57	Czech Republik	118	Burkina Faso	179	Eritrea
58	Romania	119	Angola	180	Grenada
59	Ethiopia	120	Lebanon	181	Haiti
60	Kosovo	121	Iran, Islamic Rep.	182	Samoa
61	Belarus	122	Afghanistan		

Source: Authors' calculations based upon data sources reported in Annex Table A1.

Table A8: Country Rankings on Decentralization Index

pos	country	pos	country	pos	country
1	Denmark	62	Croatia	123	Syrian Arab Republic
2	Sweden	63	Vietnam	124	Madagascar
3	Switzerland	64	Argentina	125	Panama
4	Hong Kong, China	65	Taiwan	126	Kuwait
5	Singapore	66	Armenia	127	Rwanda
6	Finland	67	Mongolia	128	Cambodia
7	Japan	68	Cuba	129	Niger
8	Norway	69	Kazakhstan	130	Burundi
9	United States	70	Paraguay	131	Guinea
10	Korea, Rep.	71	Turkey	132	Qatar
11	Iceland	72	Belarus	133	Namibia
12	Canada	73	Ireland	134	Yemen
13	Brazil	74	Tanzania	135	Mali
14	Poland	75	Kosovo	136	Macao, China
15	Hungary	76	India	137	Somalia
16	Austria	77	Bangladesh	138	Congo, Dem. Rep.
17	China	78	Sudan	139	Swaziland
18	Georgia	79	Honduras	140	Malawi
19	Colombia	80	Greece	141	Lesotho
20	Germany	81	Mexico	142	Liberia
21	France	82	Tajikistan	143	Burkina Faso
22	United Kingdom	83	Kyrgyz Republik	144	Cameroon
23	Belgium	84	Venezuela	145	Congo, Rep.
24	Latvia	85	Guatemala	146	Jamaica
25	Italy	86	Ghana	147	Cape Verde
26	Netherlands	87	Lao PDR	148	Chad
27	Czech Republik	88	Sri Lanka	149	Mauritania
28	Bolivia	89	Senegal	150	Saudi Arabia
29	Ukraine	90	Belize	151	Guinea-Bissau
30	Indonesia	91	Lebanon	152	Sierra Leone
31	Lithuania	92	Azerbaijan	153	Oman
32	Bosnia and Herzegovina	93	Morocco	154	Malta
33	Philippines	94	Brunei Darrusalam	155	Angola
34	Albania	95	Malaysia	156	Central African Republic
35	Slovenia	96	Kenya	157	Afghanistan
36	Thailand	97	Costa Rica	158	Eritrea
37	Ethiopia	98	Israel	159	Suriname
38	Serbia	99	El Salvador	160	Gambia
39	Russian Federation	100	Korea, Dem. Rep.	161	Comoros
40	Portugal	101	Iran, Islamic Rep.	162	Guyana
41	New Zealand	102	Botswana	163	Turkmenistan
42	Luxembourg	103	Tunisia	164	Timor-Leste
43	Chile	104	Iraq	165	Bahrain
44	Slovak Republik	105	Zimbabwe	166	Fiji
45	Bulgaria	106	Seyshelles	167	Mozambique
46	Spain	107	Cote d'Ivoire	168	Gabon
47	South Africa	108	Togo	169	Dominica
48	Nigeria	109	Papua New Guinea	170	Trinidad and Tobago
49	Uganda	110	Libya	171	Myanmar
50	Estonia	111	Algeria	172	Netherlands Antilles
51	United Arab Emirates	112	Macedonia	173	St. Lucia
52	Uzbekistan	113	Dominican Republik	174	Djibouti
53	West Bank and Gaza	114	Egypt	175	Sao Tome and Principe
54	Moldova	115	Jordan	176	Equatorial Guinea
55	Australia	116	Nepal	177	Bahamas
56	Montenegro	117	Bhutan	178	St. Vincent and Grenadines
57	Romania	118	Cyprus	179	Barbados
58	Peru	119	Nicaragua	180	Grenada
59	Ecuador	120	Mauritius	181	Haiti
60	Pakistan	121	Benin	182	Samoa
61	Uruguay	122	Zambia		

Source: Authors' calculations based upon data sources reported in Annex Table A1.