RELATIVE POLITICAL CAPACITY:
EMPIRICAL AND THEORETICAL UNDERPINNINGS

Marina Arbetman-Rabinowitz
Sentia Group
&
Kristin Johnson
The University of Rhode Island

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Introduction

Economists have always used one imperfect measure to assess the well-being of the national economy of a country: the total level of output per capita. The measure is often criticized as incomplete or inaccurate but it is still the golden standard as a parsimonious, robust, and simple approach. Agreeing on a measure to assess the effectiveness of governments has been elusive, primarily because it is difficult to agree on what should be measured. The World Bank states that “governance is the manner in which power is exercised in the management of a country’s economic and social resources for development” (World Bank, 1992.) The concept they are trying to capture is good governance, which includes justice, ethics, and institutional quality, among other variables (World Bank, 2007). The political values embraced by a government need not correlate with the policy outcomes we wish or expect. A politically capable government, on the other hand, will achieve their desired policy outcomes—ceteris paribus. The measure of Political Capacity (RPC) proposed emulates in the political and institutional arena, what GNP is in the economic field. As such it has to be parsimonious, robust, and simple.

The indicator of political capacity presented here has been developed for the national level of analysis, inter-country and regional comparisons as well as by levels of development. Often, when issues are entangled in the domestic arena or are frontier related problem or when the theoretical questions asked require more granularity in the analysis, the country level of analysis is not sufficient. Therefore, we have operationalized a conceptually similar model with some empirical adjustments, at the sub-national level of analysis: provincial or state.

Relative Political Capacity: A historical overview

Political capacity measures the ability of a government to extract resources from a population given their level of economic development. Efficient governments are able to meet or exceed their expected extractive capabilities; inefficient governments fail to reach their expected extraction levels. This measure of efficiency also represents the ability of a government to implement a set of policy choices: politically capable governments will be able to change or influence policy—pursuing their political and economic goals while preserving political stability.

The use of social indicators to reflect government capabilities falls into two distinct camps. First, a variety of indicators reflecting the well-being of a population were used by Deutsch (1966), Rokkan (1970), and Gurr (1974). This approach culminated in the effort and publication of by the World Bank with the World Handbook of Social Indicators. Additional efforts to capture the wellbeing of populations have culminated in the Human Development Index published by the United Nations and selected basic indicators tracked as part of the Millennium Development Goals. The second camp has theoretical foundations in democracy research, with a focus on participation, representation, electoral choice, institutions, and the bureaucracy (Campbell, Converse, Stokes and Miller, 1960; Verba, Nie and Petrocik, 1972; and Fiorina, 1981). These approaches each fall into the trap of measuring or reflecting phenomena other than capabilities.

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1 They cover 212 countries and territories for 1996, 1998, 2000, and annually for 2002-2006. The indicators (voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption) are based on several hundred individual variables measuring perceptions of governance, drawn from 33 separate data sources constructed by 30 different organizations.

2 This scale of democracy has continued to be an important measure in political research, with extensive measures of the degree of democracy found in the Freedom House Index and democracy/autocracy measures available in Polity IV.
The former reflects government and elite choice in resource allocation, the latter favors democratic systems of government over other forms of governance.

Organski and Kugler (1980) were the first ones to adapt measures of fiscal capacity from IMF economic models to measure government capability. Previous efforts utilize taxation data to (tax efforts and tax ratios) represent economic reach of governments (Bahl, 1971; Lotz and Morse 1967). Use of the extraction of resources from a population by a government as a representation of the ability to implement policy choices has its roots in these traditions.

The use of relative capacity of governments was first used by Organski and Kugler (1980) with the argument that the ability of a government to mobilize the resources of its population represents a critical component in the ability to effectively wage war. Earlier and alternate measures of national capabilities rely on the GDP or military expenditures of a country (Singer 1960) and are not useful when examining conflicts where larger countries with objectively more resources fare poorly in conflicts with smaller countries.

Early assessments of the relative capacity measure demonstrated empirical support for this relationship between resource extraction and the outcome of international conflict. Based on this approach, Kugler and Organski, in The War Ledger (1980), demonstrate that the early success of Japan in World War II can be better explained by high political capacity – or extremely high levels of extraction from the population – than by military expenditures alone. Additional early support includes comparison of resource extraction in Vietnam; despite high levels of US support and greater wealth, the extraction and therefore capabilities of South Vietnam continued to be lower than North Vietnam, consistent with the outcome of the conflict. RPC continues to be an integral component of power transition research program, particularly in its empirical evaluations (Lemke 1996, Tammen et al 2002), and in applications of power transition to internal conflicts (Kugler, Hira 1997, Panavitch, & Benson, Benson & Kugler 1998).

Political capacity also has extensions in political economy research. The political capabilities of a government can be essential at assessing changes in the reach of national governments and in tracing development trajectories. The fact that politics influences economic outcomes has long been established. For example, Arbetman, Kugler, and Organski (1980, 1994, 1999) initially examine the relationship between political capacity and demographic change, in particular declines in fertility and mortality in a population. This work has been formalized and extended by Kugler, Feng, and Zak (2000; 2007) in dynamic models of population, fertility, and economic growth (POFED).

Recent extensions of political capacity research have extended the application of political capacity to sub-national distributions of capability within states. Initial work by Royer (1997) assesses sources of political capacity in Indian states. An additional extension by Swaminanthan (2005; 2007) identifies the political capacity of states in India and levels of infant mortality and other physical survival measures. Finally, Johnson (2007) examines the relationship between sub-national capabilities and the severity of violence within countries.

The relationship between political capacity and economic growth demonstrates that governments with high and stable levels of political capacity are able to intervene or influence policy that encourages economic growth (Leblang 1997), decreasing inflation (Alacazar 1997), increasing private investment (Feng and Chen 1997, Feng 2004), and increasing the ability of the

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3 This tradition and assessments of RPC as a useful indicator in identifying national capabilities can be found in Kugler & Domke Comparing the Strength of Nations, and more recently in Kadera and Sorokin (2003): Measuring National Power.
government to implement a range of different policies (Snider 1997). Furthermore, economic activities that occur outside the sphere of taxation limit the reach or penetration of the government. Arbetman (1990, 1994,) and Arbetman and Ghosh (1997) demonstrate the relationship between government inefficiency and the level and rate of change of black market activities.

The measurement of politics comprises a difficult task for researchers. As mentioned in the previous section, initial forays into the measurement of government capability either relied on the effects of policy outcomes – e.g. physical well-being - or levels of democracy within a country which reflects the governmental structure of a country. All these efforts rely on the idea that capable governments are able to enact their social, political and economic goals. Governments and elites make different decisions about resource allocation, some heavily invest in social programs while others act to facilitate economic growth or seek some other objective. Measurements of well-being or of freedom capture the choice indirectly without measuring the innate ability to make those choices.

Governments all require resources in order to enact policies. Taxation represents willingness on the part of the population (or enforcement ability on the part of the government) to transfer resources from private individuals to the government. This resource transfer is the bridge between politics and money; taxation demonstrates an endorsement or at least acceptance of a government by the population.

Governments in possession of material resources can pursue their objectives more easily since money is fungible. Governments also need human resources; that is they need to convince their population to abide by their goals. The existence of a black market labor sector shows that there is a segment of the population that defies the government rules and operates outside their realm. There can be a correlation between low extraction and the size of the black market labor sector, but conceptually they are different. For example, a country that has a large drug market will show few people working outside the official labor sector but large amounts of money. Conversely, a subsistence economy will show many people and little money. This area of research has developed two components for RPC, one related to extraction and the other to black market labor markets.

By assessing the relative capabilities of a government to extract resources, RPC avoids the more normative traps earlier measures fall into. Organski and Kugler illustrate this shortcoming well, "It is evident to us that a highly capable political system need not be free, democratic, stable, orderly, representative, participatory or endowed with any of the other desiderata..." these other measures rely on. A measure based on extractive capabilities of a government allows for an assessment of the efficiency and performance of a government (in relation to its expected performance) that does not reflect resource allocation and is not tied to institutional design.

Levels of development and their relationship to fiscal extraction are shown in the next figure. Underdeveloped countries have low levels of both gdps and extraction and very little dispersion. At high levels of developments, governments have high levels of extraction and high income and

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4 By basing effectiveness on policy choices or governmental structure, these measures make politics a dependant rather than explanatory variable. Countries, based on their choices or regime type will score high in terms of capabilities, failing to capture much of what they are attempting to explain.
again not much variance. The most interesting area is the developing world. The variance is very high as well as the difference in income and extraction. In general it is difficult to navigate from one level of development to other. In the area of development economic and politics do not run in parallel, they are intertwined but political change and government control directly shape policies. The chain reactions between social, political and economic have many links and in each of the stages of development one or the other becomes the vital engine. How the countries develop and navigate the different stages depends on the strength of the appropriate stimulus. Political, economic, demographic or social stimuli need to prevail at different stages.

Economics is fundamental at lower levels of development, subsistence economies have difficulties providing savings, and that capital is crucial for investments. At the same time a healthy population, thus contracting infant mortality and increasing the expectancy of life are paramount. Therefore investments in infrastructure, sanitation and potable water to minimize death from starvation and disease are the key (Organski et al., 1984). The political system must bring the structure into place to make this happen. As countries start to develop, laws and regulation become necessary to minimize transaction costs and to create an environment where investments can have positive returns. The government creates the conditions for human and physical capital to reproduce and minimizes societal conflict and instability by making the rules known and citizens accountable. It is in the middle stages of development that governments have the strongest effects on development. As countries become developed, the political organization becomes more stable, coalitions settle and the political capacity of the government tends to be less volatile, economics again becomes the driver.

Methodology

National level of Analysis
The original measure of relative political capacity looked at a model of extraction taking into account the economic profile of that economy and compared the actual levels of extraction to its predicted values.

Relative Political Capacity = \frac{\text{Actual Extraction}}{\text{Predicted Extraction}}

**Conceptual differences between developed and developing countries**

The economic models that account for levels of extraction depend upon the level of development of a country as well as its particular mix of resources. Developed and developing countries are characterized quite sharply by differences in the structure of their economies and the patterns and allocation of expenditures. For developed countries, controls for GDP and health expenditures are important to account for differences in levels of wealth and in the distribution of resources throughout a population. Extractive capabilities of a government are necessarily viewed with consideration of wealth per capita.

Poor countries fail to extract resources at the levels of wealthier countries not because they lack the capability, but because the economic base in the country is much smaller. This small economic base also limits choice for these regimes. With fewer resources to allocate, policy preferences of the population may not be as readily expressed in resource allocation as is evident in wealthier countries (where societies can express their policy preferences by choosing to allocate it to health care, education, welfare, or other social programs). Developed countries do not face this limitation of extraction on the basis of fiscal resources (Arbetman 1990). Taxation in developed countries reflects not a limit on available resources, but the choice of a population to have public or private provision of services like health care. Arbetman (1990) illustrates this with contrasting examples of Sweden and Japan. Establishment of extensive public institutions that deliver educational and health services in Sweden requires a greater degree of tax collection. A lack of similar public institutions in Japan does not indicate a lesser ability to extract resources; instead it reflects a desire by the population to obtain these services by private means.

The extractive capabilities of countries should be based on resources extracted from the population rather than revenues obtained from sources that do not pressure the population in order to be accurate. Mineral production or oil profits are an easy target for revenue for a government that does not require imposition of cost on the population. Taxation of imports and exports similarly do not pressure the population. Controls for these revenue sources are critical in determining extractive capacities from the population.

Countries with extremely low levels of development tend to be less industrialized and more agrarian. However, this measure may not be less relevant than at the initial construction of the series, as an increase in global development results in a net global decrease in monies generated by agricultural production.

For this model therefore we used two equations:

Very poor developing societies:

\[ Tax / GDP = \beta_0 + \beta_1 (time) + \beta_2 (mining \ GDP) + \beta_3 (Agriculture \ GDP) + \beta_4 (Exports \ GDP) + \beta (CrudeOilExports / TotalExports) + \epsilon \]
Developing & Developed Societies

\[ \text{Tax/GDP} = \beta_0 + \beta_1 (\text{time}) + \beta_2 (\text{mining/GDP}) + \beta_3 (\text{Exports/GDP}) + \beta_4 (\text{ConstantGDP}) + \epsilon \]

**Basic RPC equation**

\[ Y_{it} = \alpha + \beta X_{it} + V_t \]

- \( Y_{it} \) = Adjusted tax revenue for country i at time t
- \( X_{it} \) = Vector of variables that determine potential tax collection
- \( V \) = White noise disturbance

**Sub National Level of Analysis**

Adaptation of national level models of political capacity to the sub national level requires the measurement of the extractive capabilities or local or regional governments and/or the transfer of resources from the central government to local governments. Understanding of individual national tax structures is important in discerning the appropriate model for a given country.\(^5\)

Like the cross national measure of political capacity, relative provincial political capacity is based on the economic endowment of provincial governments. The measure captures how regional governments are performing based on their economic endowments or in other words, are provincial governments performing in terms of resource extraction at a level to anticipated levels based on their economic endowments. Estimation of political capacity of a region is relative to other regions, states or provinces within that country. Due to the differing taxation structures, some small adjustments in the estimation is required on a case by case basis. This does not impact the overall estimation as the scores are relative for a given country.

Initially, the concentration of tax collection efforts requires attention. Although, this is not a model of the efficacy of centralization or decentralization of the fiscal system, the structure itself gives us an indication of the political pressures. On average, fiscal decentralization is 15% for developing countries and 30% for developed countries (World Bank 2007). An increase in centralization may give the government more flexibility and a greater equalization potential, while an increase in decentralization may foster stability. Furthermore, from a data collection stand point, special attention should be paid to changes in the accounting systems. In sum, which level of government collects taxes can make a significant difference in resource extraction. For example, in much of Africa, local and regional governments are charged with the bulk of tax collection resulting in significant differences in collection across regions. This makes sense, as there is a significant need in developing countries for governments to generate revenues to provide even basic services but few resources to collect them. In addition, populations are highly resistant to parting with the few resources they do possess, requiring higher levels of coercive mechanisms in order to acquire resources (and often official presence). A final compounding factor is leaders not

\(^5\) Much in this section on sub national analysis is excerpted from Johnson (2007).
wishing to be associated with imposing costs on populations. Requiring local efforts to gather taxes solves some of these problems.

The structure of tax systems is also an important component in determining the appropriate model for the estimation of sub national political capacity. In some countries, local governments collect taxes and retain the revenues, in others taxation is centralized with all receipts relinquished to the central government.

**Basic models of Sub national Political Capacity**

(1) \[ \text{Transfers/GDP} = \alpha + \beta_1 \text{time} + \beta_2 \text{Mining/GDP} + \beta_3 \text{Agriculture/GDP} + \beta_4 \text{Revenue/GDP} + \xi \]

Control variables included in political capacity estimates at the sub national level also rely on the level of development of the country and the mix of resources available. Countries at different levels of development are characterized by different economic profiles and patterns of expenditure. Poor countries are characterized by small economic bases, with countries constrained in policy choices by limited resources as much as choice (Arbetman 1990). Similar to the national level estimation of political capacity, Model 1 is appropriate for less developed countries. Countries characterized by lower levels of development tend to be less industrialized and more agrarian.

(2) \[ \text{Transfers/GDP} = \alpha + \beta_1 \text{time} + \beta_2 \text{Mining/GDP} + \beta_3 \text{GDP per Capita} + \beta_4 \text{Revenue/GDP} + \xi \]

Model 2 is appropriate for the estimation of provincial political capacity in more developed countries characterized by more highly industrialized societies. GDP per capita is appropriate to include in countries with higher levels of wealth because it demonstrates distribution of resources through the population. Additional control variables such as manufacturing/GDP or service/GDP may be appropriate based on the economic structure of the country.

Some complicating issues include whether or not the allocations of resources are negotiated on an annual basis or if there is a constitutional formula for transfers of resources from the central to regional governments (Arbetman 2006). In instances where transfers are negotiated on an annual basis, either model captures the concept of sub national political capacity.

Additional attention needs to be paid to resources governments can tax without putting pressure on the population. In provinces where natural mineral resources exist, it may be easier for governments to collect revenues generated from exploitation of oil or mineral resources. Where possible, it is important to control for these resources.7

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6 These initial models of sub national political capacity have been formulated by Arbetman (2006; 2007) in working papers for the Trans Pacific Consortium, and are used in Johnson (2007) and Swaminathan (2007) to assess different levels of political capacity.

7 In existing work on sub national political capacity, controlling for oil resources has been integral for accurate estimates. For example, in Nigeria, Constitutional changes were made that allow oil producing states to retain a small percentage of revenues prior to taxation in order to allow those states to realize some of the benefits of supporting oil industries. These states have exceptionally low levels of taxation due to the financing of government through oil profits. In other countries (e.g. Iran) profits from oil resources are disproportionately allocated to non oil producing states.
Some countries do not publish mining data because it is considered national security information. Provincial exports are very seldom published but can be a surrogate measure for points for easy taxation. Subsidies from central governments need to be analyzed in the context of centralized – decentralized systems.

In sum, the models used for sub-national level RPC are often driven by the country accounting system and data availability. Conceptually, the family of models needs to reflect a viable economic model for each country that explains the tax ratio, leaving the residuals as a political explanation.

**Empirical Challenges**

Tax revenues can suffer from poor reporting and variance in reporting, particularly in countries without strong financial institutions that collect information on regular basis. Even in countries characterized by strong institutions and transparency, changes in accounting can contribute to the distortion of revenue figures. Inflation also contributes to the distortion of revenues and the allocation of expenditures and makes the reporting date an important issue, although monthly deflators correct these fluctuations.

Social security also suffers from inaccuracy in reporting, and the differences between and within countries (e.g. the elimination or implementation of a social security program, changes in the structure of collection and disbursement) compounds the difficulty in accurate measurement across societies. At the same time, some countries have semi privatized or privatized systems making inter-country comparisons more challenging.

For the same reason, health expenditures also are difficult to measure comparatively across societies. Countries have different mixes of private and public health care systems that drastically alter the level of expenditures on health care by individual governments. These same countries change the degree of government involvement in health care provision over time, and different budget line items may be included under the umbrella of health care in some countries that may fall under other social services in others (e.g. hospice care and nursing homes in Scandinavian countries are included in health care expenditures – these are frequently private expenses in other countries). Although, health expenditures have also been attached to developed countries array of policy choices (private vs. public), more and more developing countries are making similar decisions both in social security and health.

Additional empirical challenges are presented at the sub national level. Data distortions caused by inflation, accounting changes, or even poor record keeping practices are magnified at the sub national level. In some instances, different variables are reported in different currencies or measured differently (for example GDP for the province in local market currency while the value added or revenue variables are reported in constant dollars or at constant levels). In addition, most data comes from national government sources, leaving far fewer sources to rely on for data on overlapping series when data points in the series are missing.

**Sample Size**

There is a trade off between expansion of the sample to include all countries and accuracy in the data (this is covered more extensively in the next section). For some countries, particularly extremely poor developing countries, accurate reporting of the components of RPC for the
duration of the series is difficult to obtain. Inaccuracies in the data, gaps in reporting, both influence whether data within a given country is reliable. Ex Soviet Republics and eastern European countries reported Net material product until the mid eighties and those series are difficult to convert back to the 1960s, when our data collection starts, to GNP or GDP. These countries will be added at the cost of having shorter time series.

At the same time, the model requires a large sample in order to be accurate. Without a sufficiently large sample, the establishment of a relative model does not yield results that reflect the capability of a country in comparison to others in the international system. A goal of data collection and extension of this data set should be to expand the sample to cover more countries in the world for the duration of the series. Improvements in transparency, reporting, and information access greatly facilitates this goal.

This relative model has relevance when tested within large samples. The smaller and the more homogeneous the sample, the less variance, resulting in predicted values that are not that different from actual values. This is a problem, especially when the availability of data for developed countries is greater than for underdeveloped countries. The need for data for developing countries should not be dismissed and often is better to make assumptions and accept lower quality data than to reject those series altogether.

**Data collection**

Sources for RPC are chosen on the basis of consistent reliable data that is reported regularly and in comparable units. Sources share some standardization in reporting format and methods (e.g. the IMF, World Bank). The World Bank used to be the depository of all data collection, however since 1972 the IMF has assumed responsibility for the collection. The IMF relies on national reporting – countries fill out forms required by the IMF and the IMF does not necessarily audit the data. Data can be reported and then updated by countries of origin, resulting in differences for IMF reporting for a country at different times. As is the case with any data reliant on national reporting, accuracy is not guaranteed, however the data are consistent. Certainly, more transparent countries and those with established internal checks and balances tend toward greater accuracy in reporting. Political objectives such as external debt may contribute to inaccuracy in reporting for some countries as well. Countries facing these problems may create ghost accounts in order to appear to be in better circumstances to external parties, resulting in inaccuracy in the most recent data. These reporting variances are typically adjusted with the passage of time. Updates in RPC require going back five years to assess and correct all of these reporting errors. National Central Bank Reports and figures can also be used to fill holes in IMF reporting.

In some instances, different institutions stop reporting particular items or alter reporting mechanisms. Tax structures can dramatically change, as can currencies. When these changes occur, transition years can contain reporting under each structures or both currencies, making it difficult to consistently look at the measure.

**Methodology for overlapping time series**

Comparisons of the rate of change are an initial starting point for making comparisons between series. Series often reflect different measurement units or methods. Consistency in the variance in observations contained in both series can be a basis for some confidence that the series are capturing the same variables. Applying the rate of change to existing measures prevents artificial
introduction of variance created by differing measurement techniques or reporting agencies. Historical sources must be referenced in order to assure that steady change is occurring. The occurrence of dramatic or drastic change such as a coup, financial crisis or natural disaster can massively affect the rate of revenue collection and national expenditure.

Quality Control

As in any other data collection situation we need to look at reliability and validity. The accuracy of the sources and the quality of the transcription of the data are of utmost importance. But there also problems related to the level of change from year to year of the data that cannot be accounted for by a normal trend. For example, countries that suffer from high level of inflation might report data at different times of the year that are not comparable. Countries might change their currencies and the same problem presents, those two pieces of information are not comparable. These problems are usually highlighted when we work with ratios. Ratios that are very different raise a red flag to check what is the reason for the outlier and permits us to “translate” all the info to common “currency”. Other problem that often presents is the change of accounting systems.

So for quality control, working with absolute numbers in developing countries might lead us to ignore problems of the data itself. Of course, problems related to politics or natural disasters have their own explanations.

NEXT STEPS

The first step for extending the measure lies with the sample size. Expansion of the sample to include additional countries will necessarily increase (consistency assumed) the accuracy of the measure. Eastern European countries and ex-Soviet republics need to be included. The sample of countries at the sub-national level also needs to be expanded.

New directions for RPC include explicit specification of policy interactions that result in the political capacity measure – particularly the processes that give the measure its explanatory power. Edwards (1997) suggests inclusion of technological and political constraints that inhibit revenue collection, arguing that a maximum capacity for a country could be measured. Kugler and Arbetman (1997) also identify political costs of increasing extraction as important in making this assessment. This cost could explain why policy choices concerning public or private funding of services like healthcare and education occur. The analysis of frontiers is part of this effort (initial work by Abdollahian and Arbetman 2007).

Inclusion of the extent of the black market can also aid in identification of limitations of government control and missed taxation opportunities in a country. The degree of economic activity that occurs within black markets also demonstrates a failure by the government to gain compliance or endorsement of legitimacy by the population. Evasion of tax collection efforts demonstrates both an inability of the government to enforce revenue collection efforts and population that does not trust governments to pursue policies that are in their interests.

Direct taxation efforts demonstrate the ability of a government to collect revenues overtly from a population. These revenue collection strategies are subject to high levels of criticism from populations, particularly when they increase dramatically. Governments often supplement direct revenues with indirect taxes, often in the form of VAT (this mix of direct and high indirect taxes is
found in many European countries that are characterized by large social service programs). The mix of direct versus indirect taxation efforts, and the optimal revenue generating strategies of governments is a lively and ongoing debate among economists (Arkinson 1997; Cremrel, Pestriel and Rochet 2001). This mix of differing taxation efforts is likely due to both what is politically feasible for a government and their overall levels of efficiency.

Finally, the use of RPC can be extended to Comparative Politics and the ability of state and regional governments to both extract and provide services to populations. Certainly, data differences exist in this calculation. Transfers of revenue from the central government to regional governments are an important control as they comprise resources not obtained through direct extraction from the population. Import and Export controls (and social security) are relatively meaningless at the local level.
APPENDIX

COUNTRIES INCLUDED IN THE SAMPLE: 1960-Present

The current sample includes 129 countries at varying levels of development and geographic distribution. Countries in the existing sample include:

Afghanistan; Algeria; Angola; Argentina; Australia; Austria; Bahamas; Bahrain; Barbados; Benin; Bolivia; Botswana; Brazil; Burkina Faso; Burundi; Cameroon; Canada, Cape Verde; Central African Republic; Chad; Chile; China; Colombia; Congo; Comoros; Costa Rica; Cyprus; Denmark; Djibouti; Dominican Republic; Ecuador; Egypt; El Salvador; Equatorial Guinea; Eritrea; Ethiopia; Fiji; Finland; France; Gabon; Gambia; Germany; Ghana; Greece; Guatemala; Guinea; Guinea-Bissau; Haiti; Honduras; Iceland; India; Indonesia; Iran; Iraq; Ireland; Israel; Italy; Ivory Coast; Jamaica; Japan; Jordan; Kenya; Korea South; Kuwait; Lebanon; Lesotho; Libya; Liberia; Madagascar; Malawi; Malaysia; Mali; Malta; Mauritania; Mauritius; Mexico; Morocco; Myanmar; Mozambique; Namibia; Nepal; Netherlands; New Zealand; Nicaragua; Niger; Nigeria; Norway; Oman; Pakistan; Panama; Papua New Guinea; Paraguay; Peru; Philippines; Portugal; Qatar; Rwanda; Sao Tome & Principe; Saudi Arabia; Senegal; Seychelles; Sierra Leone; Singapore; South Africa; Spain; Sri Lanka; Sudan; Suriname; Swaziland; Sweden; Switzerland; Syria; Tanzania; Thailand; Togo; Trinidad Tobago; Tunisia; Turkey; Uganda; UK; Uruguay; USA; United Arab Emirates; Venezuela; Yemen; Zaire; Zambia; Zimbabwe.

Countries with data at the sub-national level: Time span varies

Bolivia, Brazil, China, EU Countries, India, Indonesia, Iran, Mexico, Nigeria, The Sudan, Thailand, The United States.
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