

State Capacity in Latin America

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Abstract

State capacity is exceptionally low in Latin America, even when compared to other former colonies. This paper analyzes four possible factors that could potentially explain this troubling feature: political inequality, economic inequality, interstate conflict and civil war. With the exception of external war, these variables have a negative effect on state-building in models where the accumulation of state capacity is analogous to investment under uncertainty. These analytical predictions are then tested with cross-country data, paying special attention to Latin America. Democracy's impact on state capacity is quite positive, as is the effect of the frequency of external wars when data for the last century is used. However, in the data for the last half century, external wars have little effect, but the negative effects of internal wars and income inequality become highly significant. The model explains why Latin America has failed to develop its state, despite the improvement in the various measures of democracy. In fact, both the theoretical model and the empirical evidence suggest that the effects of democracy are undermined in the presence of high economic inequality.

Introduction

The debate on the role of the state in economic development of Latin America swings from the defense of state activism to the minimalist view emphasizing the advantages of market liberalization and privatization. Too often, this ideologically-driven controversy has been framed in terms of a simple choice between market mechanisms and state intervention. Rather than asking whether the state should be in or out of the development strategy, this paper adopts a different approach and focuses on the more basic abilities of the state to provide public goods and support the economy with a sound legal framework. Despite the intense controversy on its role, the Latin American state has been extremely weak in terms of the most basic capacity measures. This is what is salient about the region, compared to other more successful development experiences.

Although defining state capacity is difficult, much of the literature in the social sciences uses the term to mean the professionalization of the state bureaucracy, its ability to protect property rights and make credible commitments to private investors, as well as its ability to raise revenue from the society. This is a broad definition which encompasses “contracting institutions” (institutions supporting private contracts) and “property rights institutions” (institutions constraining government expropriation) to use the terminology in Acemoglu and Johnson (2005).¹ In addition to these “legal” measures of state capacity, and building on the recent work by Besley and Persson (2008 and 2009), this paper adds the “fiscal” dimension to measure the capacity of the state to raise revenues from the population (including the ability to tax incomes and other sources of economic activity different than foreign trade). This last dimension is essential for the state to be able to deliver public goods or to engage in redistribution between different groups in society.

¹ Greif (2005) uses the terms contract-enforcement and coercion-constraining institutions and makes the important point that in the case of the latter it is only those that rely on sanctions imposed by the state (“public-order”) that can really be considered as reflecting state capacity.

The paper emphasizes the role of political and economic inequalities as the key factor explaining why state capacity is stunted in Latin America. To put the argument in its simplest form, when these manifestations of inequality are present, the incentives to invest in state capacity are much lower. The main conclusion is that well functioning democracies—in the sense of political systems where there is competition, openness, representation and constraints on the power of the executive—are more likely to develop state capacity. Economic inequality produces very similar effects. However, in this case, the empirical evidence has to be interpreted with care, as in many ways income concentration is a manifestation of weak state capacity.

The paper also explores other potential determinants of state capacity. For years, the bellicist approach to state development has emphasized the role of external threat and war, arguing that societies that have to engage in interstate wars are more likely to build their state apparatus. With some few exceptions, major external confrontations have been rare in Latin America (in part as a result of the Monroe Doctrine, which has kept other global powers outside the region). Thus, it seems logical to argue that the lack of external confrontation is part of the explanation of Latin America's weak state capacity. But a careful consideration of this hypothesis suggests that interstate wars have had no relationship with the development of state capacity during the past half century in a large cross-section of countries. This theory may have some historical validity in the development of state capacity in the U.S. and Europe, but it does not have the predictive power when post-1960 data is used. In contrast, the role of internal conflict and civil war is particularly relevant in explaining weak state capacity in Latin America, as Centeno (2002) has argued.

The next section introduces the appropriate definitions and measures of state capacity and provides the key stylized facts on the underdevelopment of state capacity in Latin America—when the region is compared to the rest world, specific groups of countries. This comparison is particularly eloquent in the case of measures of fiscal state capacity. Second, the paper analyzes relevant literature to argue that the specific mechanisms through which political and economic inequality reproduce weak state capacity deserve a greater attention, both from a theoretical and empirical perspective. This section also explores the link between wars and state building,

summarizing the main conclusions of the existing literature. The third section develops a model where the two forms of inequality (political and economic) and the two types of conflict (external and internal) drive the outcomes in terms of state capacity. The model formalizes the specific mechanisms through which these four dimensions affect the incentives to invest in state capacity. Developing state capacity takes resources away from consumption, which is costly. Also, state capacity can end up in the hands of the opponents which can imply some future redistribution. Thus, when the elites are in power, greater inequality reduces the expected payoff from investment in state building. External conflict, on the contrary, can enhance the dividend associated with the state capacity investment decision, mainly because the value of public goods (i.e., defense) increases. Fourth, the paper presents the econometric evidence supporting the predictions of the model. The main result is that democracy is a key driver of state capacity. The incidence of external wars, while greatly important when the long-run data is used (1900-1975), loses some relevance when the analysis focuses on the last half century. In contrast, the negative effect of internal wars on state capacity is particularly strong and significant in the more recent period. Lastly, the paper concludes with suggestions for future research.

Stylized Facts

Defining and measuring state capacity is not simple as there are many dimensions to consider. Although the concept has been widely used in political science and sociology literature—and more recently in economics—there is no unique interpretation of what it means. According to Hendrix (2009), the use of the term can be grouped into three categories. The first one is military capacity, which represents the state's ability to overcome the rebellious actions against its authority with force. The proxies commonly used in this category are military personnel per capita and military spending per capita. The second one is bureaucratic and administrative capacity, which focuses on the professionalization of the state bureaucracy, its ability to protect property rights and make credible commitments to private investors as well as its ability to raise revenue from the society. The popular measures used in this category consist of Political Risk

Services Group's International Country Risk Guide (ICRG), specifically the measure that assesses the risk of expropriation and repudiation of government contracts. This category also includes measures of fiscal state capacity, such as the GDP share of total taxes. The third category is the quality and coherence of political institutions, which considers the degree of interference between the democratic and nondemocratic features in the political system. Studies in the civil war literature, such as Hegre et al. (2001), Fearon and Laitin (2003) and DeRouen and Sobek (2004) use the Polity index to represent this concept of state capacity.

This paper focuses on the bureaucratic and administrative definitions of state capacity for three reasons. First, military capacity is to a large extent a reflection of the state's ability to collect taxes and deliver public goods. Second, the quality of political institutions should be a determinant of state capacity rather than a measure of state capacity itself. In other words, state capacities are the result of decisions taken by governments, which have different incentives and constraints depending on the relevant political institutions. For example, bureaucratic and administrative state capacities can differ greatly depending on whether a country has a democratic or an autocratic form of government. The third reason is that all measures of state capacity are highly collinear and endogenous, so it is appropriate to select a few that are highly correlated with the others. Using factor analysis, Hendrix (2009) shows that bureaucratic quality and the GDP share of total taxes stand out as the most representative definitions and measures of state capacity.²

To have a broad perspective on fiscal and legal state capacity, this section presents eight different measures that are related to the revenue-generation ability and bureaucratic quality of the state. The first three measures are related to the state's ability to raise revenue from the public: (i) GDP share of total tax revenues; (ii) GDP share of income tax revenues; and (iii) total tax share of domestic tax revenues. These variables are available in Baunsgaard and Keen

² In total, Hendrix uses 15 different and highly correlated measures of state capacity including military personnel and expenditures (per capita), ICRG's measures of bureaucratic quality and investment profile, GDP share of total taxes, GDP share of total revenue and polity2 index, among others. Using principal factor analysis to create a smaller set of measures that can account for most of the variance in the 15 measures, he concludes that bureaucratic quality and GDP share of total tax revenues can explain cumulatively 90.6 percent of the variance in all the measures considered, with the first factor alone capturing 53.2 percent.

(2009), who use annual data for the period 1975-2006 from the Government Finance Statistics (GFS) and IMF country documents.³ Their sample contains 125 countries, but excludes Mexico and Brazil. Similar tax measures for these two countries are added to the database using information available from Lora (2007).

The remaining five measures represent the state's bureaucratic quality. The measure of the risk of "outright confiscation and forced nationalization" of property from ICRG has been widely used in the institutions and growth literature.⁴ This variable ranges from zero to 10 where higher values represent a lower probability of expropriation. This variable is calculated as the average from 1982 through 1997, and is taken from Glaeser et al. (2004).⁵ The "ease of doing business ranking" is taken from the Doing Business Project of the World Bank.⁶ The 2009 version of the dataset ranks 181 countries. To facilitate the interpretation, it is simpler to transform the ranking, so that each country takes a value between zero and one, where the country with the best performance has a value of one.

The next measure is the "government effectiveness index," which represents one of the six dimensions of the Worldwide Governance Indicators (WGI) developed by the World Bank. This particular index measures the quality of public services, the capacity of the civil service and its independence from political pressures, as well as the quality of policy formulation. The index takes values between -2.5 and 2.5, where a higher value indicates a more effective government. The index values are computed for every year since 1996.⁷

Another useful measure of state capacity comes from the Columbia University State Capacity Survey (also known as the Political Instability Task Force State Capacity Survey). In particular, question 21 asks respondents to rate the "state's ability to formulate and implement

³ Data for the share of income taxes in GDP is available for 1975-2000 only.

⁴ See for example Hall and Jones (1999) and Glaeser et al. (2004), among others.

⁵ Unfortunately, this variable was discontinued by the International Country Risk Guide. See <http://www.countrydata.com/datasets/>.

⁶ The data can be found at <http://www.doingbusiness.org/>. For each economy, the index is calculated as the ranking on the simple average of its percentile rankings on each of the following 10 topics: Starting a business, dealing with construction permits, employing workers, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts and closing a business.

⁷ The definitions and the data are available online at <http://info.worldbank.org/governance/wgi/>.

national policy initiatives.” The index goes from zero to 10, where 10 is the highest possible ability. The survey data has information for the years 1990, 1999, 2000 and 2002.

Finally, Berkman et al. (2009) construct a measure of state capacity by combining expert evaluations and survey responses from the Bertelsmann Transformation Index, the World Economic Forum's Global Competitiveness Report and the Columbia University State Capacity Survey.⁸ This particular index is a subjective quality measure of the country's “ability to implement and enforce regulations and policies, as well as its effectiveness to collect tax revenues.” It ranges from zero to four with four representing a higher ability to implement and enforce policies.

Table 1 shows the descriptive statistics of the eight measures of state capacity. For the measures involving taxation there is significant dispersion between the 127 countries with available data. On average, between 1980 and 2006, the mean tax revenue to GDP ratio was 10.5 percent, with a maximum value of 51.4 percent. Interestingly, when the sample is restricted to the more recent period (2000-2006), these values do not change much, suggesting high persistence. This point is further made in Figure 1, which compares the average tax revenue to GDP ratios for the periods 1975-1985 and 1995-2005. The diagonal is the best possible fit in a simple OLS regression on the data points, indicating that tax revenues (as a share of GDP) tend to remain constant for the average country. Regarding the GDP share of income taxes, there is even greater dispersion, with countries ranging from no taxation on income to a high value of 37.3 percent of GDP. Collecting taxes from individuals and firms is more difficult than taxing transactions and, thus, requires greater administrative and bureaucratic capacities. The same can

⁸ Berkman et al. (2009) average the following variables: (i) Expert evaluation of whether the minimum wage set by law in the country is enforced (Source: World Economic Forum's Global Competitiveness Report 2002); (ii) Expert evaluation of whether tax evasion in the country is rampant or minimal (Source: World Economic Forum's Global Competitiveness Report 2002); (iii) Expert evaluation of whether environmental regulation in the country is enforced (Source: World Economic Forum's Global Competitiveness Reports 2002-2006); (iv) Estimate of whether the government implements its reform policy effectively (Source: Bertelsmann Transformation Index 2006); (v) Rating of states' ability to formulate and implement national policy initiatives (Source: Question 21 Columbia University State Capacity Survey 1990, 1999, 2000, and 2002); (vi) Rating of states' effectiveness in collecting taxes or other forms of government revenues (Source: Question 22 from Columbia University State Capacity Survey 1990, 1999, 2000, and 2002). This measure is close to the concept of bureaucratic competence, underscored by Geddes (1996) in her work on state capacity and reform in Latin America.

be said about the share of domestic taxes in total taxes, as opposed to taxes on international trade.

In order to assess state capacity in Latin America, Table 2 shows the results of simple OLS regressions of each of the measures described above on regional dummies. The Latin America dummy includes all former Iberian colonies (plus Haiti), but excludes the smaller island-states of the Caribbean (although the results do not change much when these countries are added to the definition).⁹ The regressions also include a dummy for the East Asian countries, mainly because many observers consider that state capacity plays a dominant role in explaining why this region has outperformed Latin America in the recent decades (output per worker in Latin America relative to East Asia fell steadily to 0.45 in 2005 from 1.7 in 1960).¹⁰

To be able to compare these two regions and each of them with the rest of the world, the regressions include two dummies: one for the East Asia and one for East Asia and Latin America, combined. The estimate of coefficient of the Latin America and East Asia dummy is found to be negative and significant for the first two tax measures. This shows that the GDP share of total tax and income tax revenues have been lower in Latin America and East Asia relative to the rest of the world. However, relative to the rest of the world, total taxes and income taxes (over GDP) have been significantly lower (8.8 and 6.5 percentage points, respectively) in Latin America than in East Asia (6.2 and 3.4 percentage points, respectively). When only former colonies are used in the comparisons, as in Acemoglu et al. (2008), the results show that total taxes and income taxes (as a share of GDP) are lower in Latin America relative to other countries, while in the case of East Asia total taxes are lower but income taxes (as a share of GDP) are higher than in other former colonies. Interestingly, domestic taxes (i.e., the share of taxes that is not related to international trade) are higher in Latin America and East Asia compared to other countries.

⁹ The included countries are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Guatemala, Honduras, Haiti, Mexico, Nicaragua, Panama, Peru, Paraguay, El Salvador, Uruguay, and Venezuela. This grouping does not correspond to the World Bank's geographical definition of Latin America and the Caribbean, but is often used in the literature. For example, see Cerra and Saxena (2008).

¹⁰ In this paper East Asia includes: Cambodia*, China, Hong Kong, Indonesia*, Korea, Laos*, Malaysia*, Philippines*, Singapore*, Taiwan, Thailand and Vietnam* (* denotes former colonies according the definition in Acemoglu et al. 2008).

As for the proxies of legal state capacity, Latin American countries are found to be associated with lower levels of protection against expropriation risk and less effective governments; and have been, on average, less successful in the implementation and enforcement of policy compared to East Asian countries and the rest of the world. Again, these results follow from comparing the sign and significance of the estimates of the coefficients of the regional dummies. However, Latin America does not seem to underperform in the ease of doing business ranking and the state's ability to formulate and implement national policy initiatives.

When the sample is restricted to the group of former colonies, Latin America does not underperform relative to East Asia or the rest of the world in the case of legal state capacity. However, total tax revenue and income taxes (as a share of GDP) are lower in Latin America relative to the sample of former colonies in general, but also so relative to East Asia. Therefore, what is exceptional about Latin America is the underdeveloped fiscal state capacity. In fact, this feature has not changed much in recent years. The average GDP share of tax revenues for the period 2000-2006 yields exactly the same result: the Latin America dummy continues to have a negative and significant coefficient estimate, even when the sample is restricted to former colonies. This is the main stylized fact regarding state capacity in Latin America.

Determinants of State Capacity

Understanding the differences in state capacity has been a central question in the social sciences for decades, if not centuries. Much of the recent literature has focused on the original—sometimes also referred as deep or fundamental—determinants of state capacity. The most well know contributions in this regard are the series of seminal contributions by Engerman and Sokoloff (1997, 2000 and 2002) and Acemoglu, Johnson and Robinson (2001 and 2002). In particular, Engerman and Sokoloff (1997) argue that the historical determinants of state capacity in Latin America are related to factor endowments. In places where productive crops exhibited large economies of scale, like sugar and cotton, extractive institutions were developed. In contrast, in places where the productive crops showed weaker scale economies—and, thus,

production was atomized in many small units—the institutional development favored the protection of property rights.

Acemoglu, Johnson and Robinson (2001), in what can be described as a broader view of factor endowments, show that places with higher initial pre-colonial levels of wealth, population density and disease incidence were also likely to be colonized with the use of extractive institutions controlled by small elites. In other words, modern-day countries that had high rates of settler mortality, urbanization and population density around 1500, and a lower fraction of the population living under temperate climate, had a higher likelihood of developing weak institutions.¹¹

In addition, the lack of a well-developed system of property rights did not allow countries with extractive institutions to take advantage of industrialization opportunities in the late 1700s and early 1800s (Acemoglu, Johnson and Robinson, 2002). This explains why places that were relatively rich in 1500 or 1700 are relatively poor today. In other words, the big divergence took place in the late 1700s and early 1800s, precisely when institutions protecting property rights enabled countries to take advantage of the industrialization opportunities.

Although pre-colonial conditions underscored by Acemoglu et al. (2001 and 2002) can be very helpful in explaining today's state capacity (such as the measure of the risk of expropriation and forced nationalization described in the previous section) there are other factors that need to be considered. For example, relative to the East Asian former colonies, Latin American countries had lower population density, a higher proportion of the population living in temperate climates and a similar level of settler mortality.¹² These factors alone would suggest higher state capacity in today's Latin America relative to East Asia. But, as the evidence presented in the previous section confirms, East Asia performs better than Latin America along many institutional

¹¹ Explanations based on religion and culture have been rejected by much of the recent literature. See Edwards (2009) for a discussion.

¹² These are t-tests for equality of means (one-sided) which allow for unequal variances across groups. The variables of interest are population density around 1500, proportion of the population living in temperate climate and settler mortality as defined in Acemoglu et al. (2001).

dimensions. Therefore, other factors have to be considered in order to account for the changing nature of institutions.

Understanding why certain types of institutions were adopted in 1500 is a crucial step. But understanding the mechanisms that explain why weak state capacity has persisted for so long is equally important. Income inequality and its corollary of elite-control, is likely to be the state variable that connects the past with the present, but the details of this relationship are still opaque, including the real dimension of inequality prior to the 20th century.¹³ Emphasizing the relationship between economic inequality and fiscal state capacity, Sokoloff and Zolt (2006) argue that Latin America is in a high inequality and low taxation trap. In their view, tax policy is a mechanism for the reproduction of inequality, mainly because the elites prefer a combination of low taxes and low investment in public goods. This interpretation captures the essence of a range of previous contributions, including the dependency and structuralist views.¹⁴

These theories work well in societies where the degree of political representation and participation is low, making it possible for the elites to impose their preferences. For example, Sokoloff and Zolt (2006) show that the extension of the franchise was very slow in Latin America relative to the U.S. and Canada during the 19th century and argue that the types of taxes introduced in both regions differed greatly. While property taxes were introduced early in North America, they did not develop in Latin America in the 19th century. Along the same lines, De Ferranti et al. (2004, Ch.5) argue that political institutions bordering on authoritarianism precluded the investment on education and the redistribution of land, perpetuating economic inequality.

But these generalizations miss the important point that political inequality can change through time, as countries become more or less democratic, affecting the incentives to invest in

¹³ The actual degree of inequality prior to the 20th century is a matter of much controversy. For example, Williamson (2009) argues that what is unique about Latin America is the high increase in inequality between 1870 and 1929 (reflecting an increase in the value of land associated with an export-led development strategy). According to his estimations, Brazil, Chile, Mexico and Peru had levels of inequality in 1870 comparable to those of Northern Europe.

¹⁴ These theories see development problem as a result of a combination of forces including the commodity-dependence in the periphery and the alliance between the center and the local elites who benefit from the status quo and do not engage in economic and social transformations that require state capacity.

state capacity. To illustrate the changes in political inequality, Figure 2 shows the polity2 score for each Latin American country since 1900 from the Polity IV database.¹⁵ The polity2 score captures the nature of the political regime on a scale ranging from -10 (hereditary monarchy) to +10 (consolidated democracy). The score is constructed by calculating the difference between the regime's democracy and autocracy scores for a given year.¹⁶ What the figure shows is that, despite significant fluctuations, there has been an unambiguous trend toward greater democracy in Latin America.¹⁷ A theory on the persistence of low state capacity in Latin America has to acknowledge this fact.

One possibility as Acemoglu and Robinson (2008) suggest is the persistence of *de facto* power. Even if *de jure* institutions (like voting rights, elections, and controls on the executive) are introduced, the political equilibrium may not change. *De facto* political power may reflect economic power, exercised through mechanisms such as the campaign contributions and control of the media. As they mention, this does not mean that democratization is not desirable, but that it fails to deliver the expected results. To put the argument in an extreme form, Latin America's history is rich in social revolutions disguised in the rhetoric of empowering the masses which have created new elites that reproduced economic inequality (the so-called "iron law of oligarchy"). In sum, jointly modeling economic and political inequality (or the distribution of *de jure* and *de facto* power) seems to be the right approach to disentangle the causes of low state capacity in Latin America. As Robinson (2008) rightly points, there are no iron rules in the social sciences, so figuring out the specific circumstances under which changes in economic and political inequality can trigger a new equilibrium in state capacity is of great relevance.

¹⁵ The data can be accessed online at <http://www.systemicpeace.org/polity/polity4.htm>.

¹⁶ The Democracy score uses a 0-10 scale and combines measures of (maximum scores in parentheses) competitiveness (2) and openness (2) of executive recruitment, constraints on the executive (4), and competitiveness of political participation (3). The Autocracy score also uses a 0-10 scale to measure the degree of restriction or suppression of competitive political participation. Its components are competitiveness (2 if the executive is selected) and openness of the executive recruitment (2 if the recruitment is closed), constraints on the executive (3 if the chief executive has unlimited authority), regulation of participation (2 if participation is restricted) and competitiveness of political participation (2 if it is repressed).

¹⁷ Przeworski (2008) argues that even if in the initial years after independence very few people had voting rights in Latin America, this was not the main difference vis-à-vis the developed world in the beginning of the 20th century.

In addition, other forces can alter the development path of state capacity in a way that is not entirely predictable by just looking at political and economic inequality. In particular, theories on state formation and state building have long emphasized the role of wars or threats to the ruler's ability to extract resources from a given territory and population, as in Tilly (1975, 1985, 1992). The central claim is that the rulers engage in war-making (to neutralize external rivals) and state-making (to neutralize rivals from within and to protect supporters) which require resource extraction from the population that they are attempting to control. Historically, wars have been an important determinant of increases in the level taxation and debt (the so-called "ratchet effect") in part because external confrontations demanded greater military and bureaucratic capacity and also because taxpayers preferred greater contributions to external domination. In other words, wars required organization and efficiency, supporting the institutional development of the state. But in as much as wars make states, it is states that make wars, so care should be exercised in the interpretation of a causal relationship.

Even if war is not the only catalyst for state development, many studies consider that the bellicist approach to state building has some relevance in developing countries in general, and Latin America in particular. For example, Stubbs (1999) claims that the threat of war has been an important factor in molding state institutions, economy and society in the most successful economies of East Asia (Japan, South Korea, Taiwan, Hong Kong, Singapore, Malaysia and Thailand), while Desch (1996) looks into the cases of China, Cuba, Israel and South Korea to conclude that their threatening external environments have resulted in stronger states.

In Latin America, Centeno (1997 and 2002) and López-Alves (2000) have explored the role of wars for state formation, complementing the traditional views that have emphasized the importance the distributive and class tensions.¹⁸ An important insight in their contributions is the treatment of external and internal wars as two distinct types of conflict that have opposing effects in the development of state capacity. In particular, internal wars have been mainly destructive, as opposed to central prediction of the bellicist approach. Besley and Persson (2008) substantiate

¹⁸ Thies (2004) argues that interstate and intrastate *rivalry* is more important than actual war from the point view of state building. Thies (2005) highlights this distinction for Latin America, claiming that interstate rivalry (but not war) has played a role in determining tax ratios.

this claim by providing empirical evidence, which shows that the incidence of external wars is associated with stronger states, while the incidence of internal wars goes in the opposite direction.

The evidence on the frequency and magnitude of interstate (called here external) and intrastate (internal) wars, available from the Correlates of War database, shows that the former have been rare, but the latter have been relatively frequent in Latin America. According to Figure 3, cumulative battle deaths have been larger in internal than in external conflicts in Latin America, contrary to the experience of Asia, Europe and the U.S. Only since the mid 1970s, have deaths in internal conflicts in Africa surpassed those resulting from external wars.¹⁹ Figure 4 shows the frequency of external and internal wars in each Latin American country, illustrating again that the latter have been much more common than the former. As Centeno (2002) puts it, Latin America has had many limited wars, but very few total wars. The striking fact is that no state has disappeared in Latin America since independence two centuries ago, and borders have changed little while internal wars have been frequent.

To sum, the previous discussion suggests that political and income inequality, as well as external and internal wars, are potentially relevant factors in explaining the persistence of weak state capacity and the differences in state building between former colonies. The next section presents a model that helps to understand the interaction between these variables and state capacity in an integrated framework. The model also produces some hypotheses which are tested later in this paper.

State Capacity, Wars, and Inequality: Conceptual Framework²⁰

This section presents a model that explores the interaction between state capacity, wars and inequality. The model extends the framework developed by Besley and Persson (2009) by

¹⁹ The high incidence of civil war is a striking feature of the developing world which has led to a significant amount of research on its causes and determinants, more than its consequences for state building. See Blattman and Miguel (2009) for a survey.

²⁰ This section is based on Cárdenas and Tuzemen (2010).

looking in more detail at the mechanisms through which income inequality affects state capacity and comparing how results differ when the elites' rule is replaced by citizens' rule. In addition, the model captures the effects of civil war on state capacity, in the spirit of Besley and Persson (2008).

The basic setting is as follows. Time is discrete and consists of two periods, $s = 1, 2$. There are two groups of agents in the economy $J = A, B$, which can be thought as corresponding to citizens and elites. Groups differ in their population shares β^A and β^B (by definition the population share of elites is smaller relative to citizens). In each period, one group, say group A, holds the political power (becomes the government) and makes the taxation and government spending decisions. Note that group A can be either citizens or elites depending on who is holding power. Groups may also differ in their per capita income levels Y^A and Y^B , with the elites having a higher per capita income level. The group-specific tax rates t_s^A and t_s^B in each period s can take negative values in order to make redistribution possible. The total population is normalized to unity. Each agent in a group J has the same preferences and income levels as the other members of the group. Agents derive utility from consuming private goods, which they purchase with their after-tax income, and public goods provided by the government.

State capacity is defined as the state's ability to generate tax revenue from the public. In this setting, state capacity provides the maximum tax rate that the government can effectively apply. In other words, if the government sets an excessively high tax rate, agents operate informally and the government is unable to collect taxes. Limits to the taxes the government can impose are given by the bureaucratic and administrative capabilities of the state.

As in Besley and Persson (2009), the capacity to tax depends on the previous investments in building bureaucratic capabilities, such as an effective tax administration which manages and monitors taxation. More specifically, the government can extract resources from the private sector in order to invest in state capacity. The stock of state capacity accumulated determines the maximum tax rate that is feasible for the government (which is assumed to be equal to the stock

of state capacity in each period). Also, it is assumed that the stock of state capacity does not depreciate.

The government takes the stock of the first period state capacity τ_1 as given and decides the level of state capacity for the next period τ_2 . In order to have a higher level of state capacity in the second period, the government needs to make a non-negative investment in the first period. The costs associated with this investment are given by $F(\tau_2 - \tau_1)$, which is assumed to be increasing and convex in the level of investment. Assuming increasing marginal costs of investment in state capacity has crucial implications for the results of the model, but is justified on the grounds that it is extremely hard for governments to eliminate informality completely (in fact, all countries show some degree of informality). In addition, the solution to the model requires that the properties $F(0) = F_\tau(0) = 0$ are satisfied. Investment in state capacity takes place only in the first period, since the world ends at the end of the second period.

In addition to funding investment in state capacity, the government can use the resources it extracts from the private sector to provide public goods G_s in each period s . By assumption, both groups benefit equally from public goods. The value given to public goods in the utility function in each period is denoted by α_s , which is a stochastic variable with a cumulative distribution function H and a probability density function h on the interval $[0, 1]$. This means that there is uncertainty regarding how much society will value the public good in period 2.

There are many shocks that can change the way societies value public goods. For example, expenditures on security and defense can be valued differently if the country is at war or not. In the absence of an expected conflict, defense is valued less and the government invests fewer resources in state capacity, while societies that are more likely to be involved in wars invest more in state capacity (this is the fundamental claim of the bellicist approach to state building). However, societies can also have a high valuation of public goods for reasons different than wars (e.g., public expenditures on health can have a higher value if there are serious public health risks). The important feature of the model is that if the government expects a higher valuation of public goods in the future, it will invest more in state capacity today.

The timing of events is as follows: First, nature determines the value of public goods and which group holds the political control in the beginning of each period. Next, the government picks the policy vector of taxes, spending in public goods and investment in state capacity. Finally, agents consume and derive utility from consuming private and public goods.

Assuming that preferences of the agents in the economy are linear in private consumption and public goods provision, the indirect utility for each individual in group J is represented as:

$$v_s^J(t_s^J, G_s) = \alpha_s G_s + (1 - t_s^J) Y^J \quad (1)$$

The government makes the policy decisions that maximize the sum of the weighted utilities of the two groups. In the case of a utilitarian government, the weights should be equal to the population shares of the two groups, which roughly speaking, corresponds to a fully democratic political system. Think of this as the theoretical counterpart to the maximum value in the polity2 score, corresponding to the case when the executive is competitively and openly elected and its power is subordinated to the legislative branch where the different groups can be proportionally represented.

Yet, many countries do not have fully democratic systems, but rather function on partial democracies which imply some form of political inequality. In this case, the weights are not equal to the population shares; instead they are the population shares multiplied with two new parameters ρ^A and ρ^B , which represent the political weight the government gives to each group. Therefore, the total weight the group in power attaches to its own group becomes $\rho^A \beta^A$ and that for the opponent group becomes $\rho^B \beta^B$. The political system can be labeled as unequal if one group's utility gets a weight greater than their population share, or in short if the group in power favors its own group members, which corresponds to $\rho^A > 1$ and $\rho^B < 1$. (Think of the completely selfish autocrat that suppresses political participation as in the case where $\rho^B = 0$.) From now on, assume that $\rho^A \geq 1$ and $\rho^B \leq 1$, and define political inequality as the difference between ρ^A and ρ^B . By assumption, the sum of the weights attached to the groups' utilities should add up to 1, that is $\rho^A \beta^A + \rho^B \beta^B = 1$. Again, under a fully democratic political system,

each group's weight in the utility of the ruler should be equal to its share in the population, i.e., $\rho^A = \rho^B = 1$.

Under these conditions, the first period problem of the government is to choose the policy vector $\{G_1, t_1^A, t_1^B, \tau_2\}$ in order to:

$$\max \alpha_1 G_1 + \rho^A \beta^A (1 - t_1^A) Y^A + \rho^B \beta^B (1 - t_1^B) Y^B + ENP \quad (2)$$

$$s. t. \sum t_1^J \beta^J Y^J = G_1 + F(\tau_2 - \tau_1) \quad (3)$$

$$and \tau_1 \geq t_1^J \quad (4)$$

where Eq. (3) is the government's period 1 budget constraint (i.e., tax revenues have to equal to the provision of public goods plus the costs associated with investing in state capacity) and Eq. (4) states that the tax rates cannot be higher than the stock of state capacity (i.e., feasible tax rates are constrained by state capacity). Eq. (2) is the weighted average of the two groups' indirect utilities (where the weights are given by the population shares and the political preferences of the ruler) plus the second period Expected Net Payoff (ENP) for the group who is in power in the first period. This is an expected payoff because the outcome depends on which group is in power in the second period and the realization of α_2 , both of which are uncertain.

Before fully explaining the term ENP, substituting Eq. (3) into Eq. (2) provides some additional insights on the ruler's maximization problem:

$$(\rho^A \beta^A Y^A + \rho^B \beta^B Y^B) + \beta^A t_1^A Y^A (\alpha_1 - \rho^A) + \beta^B t_1^B Y^B (\alpha_1 - \rho^B) + ENP \quad (5)$$

Note that in order to maximize Eq. (5) with the choice of a positive provision of public goods in period 1, the condition $\alpha_1 \geq \rho^A$ has to be satisfied (which simply means that the value of the public good has to be greater than the value that the group in power assigns to its own private consumption). Given the cumulative distribution of the stochastic variable α_1 , this event occurs with probability $[1 - H(\rho^A)]$. Conversely, when $\alpha_1 < \rho^A$ the group in power values public goods less than its own private consumption and, hence, finds it optimal to set $G = 0$. This occurs with probability $H(\rho^A)$. Therefore, the value attached to public goods relative to the private good

determines whether the government provides public goods or not. If public goods are provided, the corresponding state of the world can be named “Common Interest State.” If no public goods are provided, then the state is called “Redistribution State.” It is convenient to think of this last possibility as a state of affairs where the group in power taxes the other group in order to increase its own private consumption (which is valued more than public goods).

Finally, the second period problem of the government is to choose the policy vector $\{G_2, t_2^A, t_2^B\}$ in order to:

$$\max \alpha_2 G_2 + \rho^A \beta^A (1 - t_2^A) Y^A + \rho^B \beta^B (1 - t_2^B) Y^B \quad (6)$$

$$s. t. \sum t_2^J \beta^J Y^J = G_2 \quad (7)$$

$$and \tau_2 \geq t_2^J \quad (8)$$

where Eq. (7) is the government’s period 2 budget constraint (tax revenues are equal to the expenditures in public goods as there is no investment in state capacity in period 2). Again, Eq. (8) states that the tax rates can be at most equal to the stock of state capacity. Since the maximization problem of the government is linear in the policy variables, the optimal taxation and the optimal level of public goods provision decisions can be analyzed separately from the optimal investment in state capacity decision.

First, consider the optimal taxation results in each state of the world. In the common interest state, public goods are valued highly and provision of public goods is the priority of the government. Therefore, regardless of which group is in power, both groups are equally and maximally taxed. In contrast, under the redistribution state there is no public goods provision, but the group not in power is still taxed maximally in both periods. The difference is that in this case the revenues from taxation are redistributed to the group in power.

In order to solve for the optimal investment in state capacity, which is the variable of interest, it is necessary to calculate the Expected Net Payoff (ENP) that appears in Eq. (5). This is the crucial step in the derivations as the decisions made in period 1 will depend on what the ruler expects will happen in period 2. One key issue is who will hold power in period 2. In what

follows, assume that the group in power keeps the political authority with an exogenous probability of γ . This is a strong assumption about political transitions, but useful in order to focus on the problem of investment in state capacity.

There are two sources of uncertainty regarding period 2. One is related to who will rule, while the other is about the state of nature (the realization of α_2). As discussed above, under the common interest state—which occurs with probability $[1 - H(\rho^A)]$ —it is irrelevant who holds power, so the first uncertainty can be ignored. In this case, both groups are taxed at the maximum amount and public goods are provided. The payoff in period 2 under the common interest state (V_C) is given by:

$$V_C = \tau_2 [\beta^A Y^A + \beta^B Y^B] E \{ \alpha_2 | \alpha_2 > \rho^A \} + [\rho^A \beta^A (1 - \tau_2) Y^A + \rho^B \beta^B (1 - \tau_2) Y^B] \quad (9)$$

The first component in Eq. 9 is the payoff from the provision of public goods. Note that the value of public goods in period 2 is in expectation since it is unknown as of period 1. The second component is the sum of the payoffs for the two groups from the consumption of the private goods with their after-tax income.

However, with probability $H(\rho^A)$, the world can be in the redistribution state in period 2. In this case, the payoff depends on which group holds power. If the ruling group continues to hold the political power in period 2, it will tax the other group at the maximum possible rate and use the proceeds for redistribution. The total payoff in period 2 under the redistribution state when the incumbent remains in power (V_{RA}) is given by Eq. (10):

$$V_{RA} = \{ \rho^A \beta^A [1 + (\tau_2 \beta^B Y^B / \beta^A Y^A)] Y^A + \rho^B \beta^B (1 - \tau_2) Y^B \} \quad (10)$$

where it is shown that the members of the opposition group (B) lose a share of their income due to taxation, while the ruling group (A) receives the collected taxes and consumes more than its period income. If, on the contrary, the ruling group loses power to the opposition, the total payoff under the redistribution state when the opposition rules in period 2 (V_{RB}) is given by Eq. (11):

$$V_{RB} = \{ \rho^A \beta^A (1 - \tau_2) Y^A + \rho^B \beta^B [1 + (\tau_2 \beta^A Y^A / \beta^B Y^B)] Y^B \} \quad (11)$$

which says that group A is taxed and the resources are redistributed to group B. As of period 1, accounting for all these possible period 2 outcomes, the ruling group calculates the ENP as a weighted average:

$$ENP = [1 - H(\rho^A)] V_C + H(\rho^A) \{ \gamma V_{RA} + (1 - \gamma) V_{RB} \} - \lambda(\alpha_1) F(\tau_2 - \tau_1). \quad (12)$$

The first term is the probability that in the second period society is in the common interest state multiplied by the payoff associated with that state. The next term is the probability that in period 2 the redistribution state occurs multiplied by the payoff associated with that state (from the point of view of group A which is the ruler in period 1). This payoff is the average of the indirect utilities for group A when it remains in power and when it loses it (weighted by their respective probabilities γ and $1-\gamma$). This is the expected gain from investing in state capacity in period 1.

But there are costs associated with this decision as well. These costs are captured by the third term on the right hand side of Eqn. (12). This term shows that investing in state capacity takes $F(\tau_2 - \tau_1)$ resources away from consumption in period 1. Under the common interest state, these public funds are extracted from the provision of public goods, which have a value of α_1 in the indirect utility function. Under the redistribution state, the funds are taken away from private consumption which is valued at ρ^A . This is why $\lambda(\alpha_1) = \max \{ \alpha_1, \rho^A \}$.

In order to determine the optimal level of investment, it is necessary to plug the complete expression for ENP into the first period maximization problem. After some straightforward derivations, the first order condition with respect to τ_2 is given by the following equation:

$$\begin{aligned} \lambda(\alpha_1) F_\tau(\tau_2 - \tau_1) &= [1 - H(\rho^A)] [\beta^A Y^A + \beta^B Y^B] E \{ \alpha_2 \mid \alpha_2 > \rho^A \} \\ &\quad - [1 - H(\rho^A)] [\rho^A \beta^A Y^A + \rho^B \beta^B Y^B] \\ &\quad + H(\rho^A) (\rho^A - \rho^B) [\gamma \beta^B Y^B - (1 - \gamma) \beta^A Y^A]. \end{aligned} \quad (13)$$

This equation says is that the optimal level of investment depends on the key variables of the model, namely α_1 , α_2 and $(\rho^A - \rho^B)$. Since this optimality condition has to hold, it can be used to analytically determine the effects of the key variables on the equilibrium level of state capacity

investment. For example, when the value of α_1 increases, it leads to a higher $\lambda(\alpha_1)$. Since the optimality condition has to be satisfied, a decrease in $F_\tau(\tau_2 - \tau_1)$ is necessary, which would be possible only when the level of investment in state capacity decreases (given the convexity of the cost function). Similarly, in the case of an increase in α_2 , the right hand side of Eq. (13) goes up and needs to be offset with an increase in $F_\tau(\tau_2 - \tau_1)$, which corresponds to an increase in the level of state capacity investment.

This analytical investigation is very important to understand the effects of wars on state capacity. To start, note that fighting an external war corresponds to the common interest state in period 1, where the valuation of public goods is higher than the valuation of private consumption by the ruler. In this case, the optimal solution is to provide public goods at the expense of investment in state capacity. This is what happens during a war, where military expenditures—and not investing in bureaucratic capacity—are the government’s priority. However, this is different from the expectation of being involved in an external war in the second period, which corresponds to a high α_2 . In this case, the government chooses to increase the level of investment in state capacity in the first period to be able to fight the war in period 2.

The effect of political inequality ($\rho^A - \rho^B$) on the government’s state capacity investment decision is also of interest. The model gives different results depending on the value of γ , which is the probability that the group in power in the first period keeps authority in the second period. Consider first a situation where this probability is lower than the ruling group’s population share. In this case, a higher degree of political inequality results in a lower level of investment in state capacity (see the appendix). Intuitively, if the group in power is likely to lose authority to the opponent group in the second period, then it will prefer less investment in state capacity in order to avoid the possibility of redistributive taxation in the second period. Therefore, a higher level of political inequality results in a lower level of investment in state capacity. These results remain the same when the citizens or the elites hold political power.

Introducing income inequality to the model provides some very interesting additional insights. This is done by allowing for differences in the per capita income levels of the two

groups. In particular, the per capita income level of the elite (minority group) is assumed to be $Y + \varepsilon$, which is higher than that of the citizens (majority group) $Y - \varepsilon$. In this setup, ε is defined as the income inequality parameter. Using these new income definitions, the optimality condition in Eq. (13) becomes:

$$\begin{aligned} \lambda(\alpha_1) F_\tau(\tau_2 - \tau_1) = & [1 - H(\rho^A)] [\beta^A (Y + \varepsilon) + \beta^B (Y - \varepsilon)] E \{ \alpha_2 | \alpha_2 > \rho^A \} \\ & - [1 - H(\rho^A)] [\rho^A \beta^A (Y + \varepsilon) + \rho^B \beta^B (Y - \varepsilon)] \\ & + H(\rho^A) (\rho^A - \rho^B) [\gamma \beta^B (Y - \varepsilon) - (1 - \gamma) \beta^A (Y + \varepsilon)]. \end{aligned} \quad (14)$$

With this slight modification, the model makes some clear-cut predictions when elites rule in period 1. In particular, the model shows that a higher level of income inequality leads to a lower level of investment in state capacity (see the appendix). This result is obtained by taking the derivative of the right hand side of the optimality condition in Eq. (14) with respect to ε , which has a negative sign. Recall that this optimality condition has to hold in the equilibrium; therefore as the right hand side of the equality decreases with an increasing level of income inequality, the left hand side of the equality should also decrease. This would only be possible if the level of investment in state capacity is decreased. Intuitively, the elites invest less in state capacity because the amount of resources that they can extract from the citizens is small, since their income is low as a result of income inequality. To put it bluntly, for high levels of inequality it simply does not pay to invest in state capacity when the elites are making the decision.

However, the results on the effects of income and political inequality on investment in state capacity become ambiguous when citizens hold political power in the first period. Using simulations, Cárdenas and Tuzemen (2010) show that when income inequality is low, an increase in political inequality has a negative effect on investment in state capacity. This means that citizens behave just like elites do: they know that they can lose power and do not want to leave greater state capacity in the hands of the opponents. But, for higher levels of income inequality things change. Taxing the elites has a greater payoff because of their higher income. In this case, as the level of political inequality increases citizens invest more in state capacity to

be able to tax the elites at a higher rate in period 2. This last case is reminiscent of a social revolution that first builds state capacity and then engages in redistribution.

But history is rich in examples of social revolutions, especially in Latin America, that promise to reduce inequality and deliver public goods but fail to do so. Social experiments that empower the citizens, but do not increase state capacity, can be rationalized with this model. One possibility is that the probability of losing power in the next period is high. In this case, the *expected* return from investment in state capacity is low and naturally the citizens prefer to redistribute the available resources while they are in power. A second possibility has to do with the fact that social revolutions are not smooth political transitions, but are often associated with civil wars, which brings along a new dimension that can lower the incentives to invest in state capacity.

Thus, as a final theoretical exercise, the model can be extended to allow for the presence of civil wars, which are conflicts that arise when the citizens rebel against the authority of the elites. Civil wars can only occur in the redistribution state as there is no conflict between groups when the common interest prevails. While external wars make the common interest state more likely (because of the high valuation of public goods and the diminished selfishness of the ruling group), civil wars are assumed to take place when one group is taxing the other for its own benefit.

From an analytical point of view, there are now three states of nature: the common interest state, the redistribution state with a civil war and the redistribution state without a civil war. Civil wars can be model as a result of political and/or economic inequality, but to keep matters simple assume that at the beginning of each period nature determines an exogenous probability of the occurrence of a civil war. If it is also assumed that civil wars take away part of the income of both groups and destroy state capacity, the results are straightforward. The model predicts a negative relationship between the incidence of a civil war and the investment in state capacity. The reason is simple: as the probability of fighting a civil war in the second period increases, investment in state capacity has a lower return. Moreover, compared to the previous results, the

possibility of the occurrence of a civil war amplifies the negative effects of both political and income inequalities on the investment in state capacity.

Empirical Evidence

As mentioned, there are four elements that are central to state building: political inequality, economic inequality, external and internal (or civil) wars. This section looks at the empirical counterparts of these variables. The goal is to assess the relative position of Latin America and the empirical validity of the theoretical predictions discussed in the previous section.

The incidence of external wars is measured with the help of a dummy variable that takes a value of one if the country has been involved in an interstate or extrastate war in a given year and zero otherwise, based on the Correlates of War database.²¹ To be classified as an interstate war, at least two participants in sustained combat should qualify as members of the interstate system and there should be at least 1,000 battle related fatalities among all of the system members involved. A state involved is regarded as a participant if it incurs a minimum of 100 fatalities or has 1,000 armed personnel engaged in fighting. Extrastate wars are wars between a state and a non-state entity. To be classified as an extrastate war, at least one major participant in the conflict (however irregular and disorganized) should not be a member of the state system and there should be at least 1,000 battle related fatalities in every year for each of the state participants. The external war dummy is then used to calculate the fraction of years that a particular country was involved in an interstate or extrastate war during two periods: 1900 (or year of independence if after 1900) and 1975, and 1960-1997. The variable is in the range of zero to one, where a country that has been engaged in an external war in all years in the sample has a value of one.

²¹ Original data is available online at <http://correlatesofwar.org/>. See the discussion of democracy variables for the matching procedure with modern countries. The Correlates of War data reports countries that have involved in civil wars or internal disputes in other polities (e.g., European powers that were involved during the Russian civil war after the end of World War I). The data reported here excludes foreign countries from the definition of civil wars.

The incidence of internal wars is measured similarly, using the definition of intrastate wars available in the Correlates of War database. Intrastate wars are fought within state borders between a government and non-government forces (civil war), or at least two non-government forces (inter-communal war). In order to be classified as a civil war, the central government should be actively involved in military action with effective resistance for both sides and there should be at least 1,000 battle related deaths. In order to constitute as effective resistance, both sides must have been initially organized for violent conflict, or the weaker side must be able to inflict upon the stronger opponents at least five percent of the number of fatalities it sustains. As with external wars, the variable of interest is the fraction of years between during two periods: 1900 (or year of independence if afterwards) and 1975, and 1960-1997.

The measure of political inequality is based on the polity2 score available in the Polity IV database (described above). In particular, a country is considered democratic in a certain year if the polity2 score is greater than three. Although this is an arbitrary criterion, it captures the idea that countries above that threshold are likely to show low levels of political inequality (results do not change if the threshold is set at polity2 equal to zero). As in the case of the conflict variables, the fraction of the years that a country has had low political inequality (polity2 greater than three) in the periods 1900-1975 (or since independence if it occurred after 1900) and 1960-1999.²²

The measure of income inequality is the Gini coefficient available from the 2008 World Income Inequality Database of the United Nations University-World Institute for Development Economics Research (UNU-WIDER). The data covers the time period 1867-2006, and includes in the more recent years 186 countries. The reported Gini coefficients come from surveys that can differ greatly along 10 dimensions such as coverage area (e.g., national, rural, urban, metropolitan, city, etc.), surveyed population (e.g., all, workers, taxpayers, certain age groups,

²² Some assumptions need to be made to match the country classifications in the Polity IV and Correlates of War databases. The starting point is the countries that exist today. When the current country is the result of the unification of several countries, the data that is used prior to the unification corresponds to the absorbing country (e.g., West Germany in the case of today's Germany or North Vietnam in the case of today's Vietnam). If the current country is the result of a division, then the historical data from the original country is used (prior to the date of creation of a new country). For example Czech Republic and Slovakia are both assigned the value of Czechoslovakia prior to 1991.

etc.), unit of analysis (e.g., individual, household, etc.) and variable of interest (e.g., income or expenditures). Given the heterogeneity in the original data, it is important to select those measures of the Gini coefficient that are comparable across countries and time. The criteria adopted in this paper follow simple guidelines: Only Gini coefficients calculated from national surveys covering all population groups are used. If more than one observation per country/year meets these criteria, the higher quality observation is chosen (based on a quality index included in the database). Finally, when there are several reported Gini coefficients that meet the same criteria and are of equal quality, then the one with more observations is used. From this dataset, the average Gini coefficient per country for the periods 1900-1975 and 1960-1999 is calculated.²³

To begin, Table 3 compares the average values of these four variables for Latin American and East Asian countries, for the two periods (1900-1975 and 1960-1999) and the two samples: all countries and only the former colonies. Latin American and East Asian countries are found to be less democratic than the rest of countries in the period 1900-1975. In terms of external wars, the coefficient estimates associated with the Latin America dummy is negative and significant, restating the point that Latin American countries spent a smaller fraction of years between 1900 and 1975 fighting external wars (and East Asian countries spent a higher fraction of years) than the rest of the world. In the case of internal wars, Latin America does not seem to be different than the rest of the world, while East Asian countries seem to have spent more time waging interstate conflicts as well. So, Latin America has been clearly more peaceful than East Asia, at least in the long period between 1900 and 1975. Finally, note that the estimate of the Gini coefficient is significantly higher in Latin America than in the rest of the world (it is also slightly higher in East Asia than in the rest of the world). When the same calculations are reproduced for the sample of former colonies, an interesting outcome follows. Between 1900 and 1975, Latin America was less democratic, more peaceful and less egalitarian than the rest of the world, while East Asia was more likely to experience wars, both external and internal.

²³ Some countries have very few observations between 1900 and 1975 (31 countries have only one data point). The median country has two observations in that period.

The results for the 1960-1999 period show some differences and similarities that are worth mentioning. First, Latin America now appears distinctively more democratic than the rest of the world, especially East Asia, in contrast to what has been found in the longer time period. Second, Latin America appears as a region with an exceptionally low incidence of external wars. Third, income inequality has remained persistently high compared to East Asia and the rest of the world. The same is true when the comparison is made with the former colonies.

Before moving to the econometric analysis, it is important to consider the cross-correlations between the measures and determinants of state capacity. The following four measures are used as proxies for state capacity in this exercise: the GDP share of total tax revenues (2000-2006), the policy implementation and enforcement index, the government effectiveness index (2002-2008) and the ease of doing business ranking (2009). The cross-correlations are plotted in Figure 5 and Figure 6. Given the definitions of these state capacity measures, a higher value for each measure corresponds to a higher level of state capacity. As seen in the figures, the democracy scores and the incidence of external wars are positively correlated with the measures of state capacity, while the incidence of internal wars and the Gini indices are negatively correlated with each measure of state capacity. Intuitively, countries with more democratic political systems (less political inequality) and higher incidence of external wars (higher valuation of public goods) have stronger states, while countries that have spent longer time fighting internal wars and have higher levels of income inequality have lower levels of state capacity.

Turning to the econometric analysis, the model's main propositions can be estimated with cross-country regressions of the following form:

$$SC_{it} = \beta_0 + X'_{it-1}\beta_K + Z'_{it-1}\beta_K + u_{it}, \quad (15)$$

where SC_{it} is the measure of state capacity of interest for country i in period t . X_{it} is the vector of potential determinants of state capacity, which includes four variables: percentage of years under democracy, external and internal wars and a measure of the Gini coefficient. Z_{it} is the vector of other controls, which are the dummy variables for the legal origin of the corresponding

country.²⁴ The coefficients β are the parameters of interest. Specifically, the incidence of democracy (a proxy for lower political inequality) should have a positive effect on state capacity, as well as the fraction of years under external war (a proxy for the probability of being engaged in an external war in the future and thus should increase the future value of public goods). In contrast, a higher percentage of years under intrastate conflict (a proxy for the probability of an internal conflict) and the Gini coefficient (a proxy for economic inequality) should have a negative impact on state capacity, according to the model's predictions.

Before reporting the regression results, a word of caution is necessary given the potential endogeneity and simultaneity problems that affect the estimation results. The explanatory variables used in the regressions may have been jointly determined with the different measures of state capacity through channels that the theoretical model fails to capture. As a way to deal with these potential problems and the explanatory variables shown in the model to be driving the decisions to invest in state capacity, they should precede in time the actual measures of state capacity.

This section reports the results from the regressions estimated with data from two different sample periods. First, taking a long-run perspective, the average value of the explanatory variables corresponds to the period 1900-1975. The purpose of these regressions is to see to what extent the historical levels of democracy, inequality and wars have had an impact on the average values of state capacity after 1980. The second set of regressions correlates the average level of the explanatory variables between 1960 and 1999 with measures of state capacity corresponding to the 2000-2006 period. In both sets of regressions a dummy variable for Latin America is added in order to assess the accuracy of the model in explaining the relative low states capacities of the region.

Table 4 shows the first set of regressions using the eight measures of state capacity as dependent variables. The results indicate that countries with more democratic political systems

²⁴ This is now a standard procedure in the empirical literature. The corresponding dummies control for British, French (omitted category), German, Scandinavian, and Socialist legal origin. To save space, the results discussed below do not report the estimated coefficients on these variables.

between 1900 and 1975 have, on average, higher levels of state capacity compared to the countries with less democratic political systems. Quantitatively, a one standard deviation increase in the fraction of years under democracy is associated with a 4.1 percentage point increase in the GDP share of total tax revenues and a 3.5 percentage point increase in the GDP share of income tax revenues (but there is no significant correlation between the incidence of democracy and the domestic tax revenues over total tax revenues). The same increase in the share of years under democracy is associated with a 0.7 increase (in a 10 point scale) in the protection against expropriation risk and a 0.4 increase in the government effectiveness (in a scale that ranges from -2.5 to +2.5) indices. The implementation and enforcement of policy (0.2) and the state's ability to formulate and implement national policy initiatives (0.5) indices also increase (magnitudes in parentheses). Finally, the rank in the ease of doing business measure is improved by 10 percent.

The results also show that the incidence of external wars is positively correlated with the level of state capacity. A country with one standard deviation higher share of years under external war has 2.4 percentage points higher GDP share of total tax revenues, 1.8 percentage points higher GDP share of income tax revenues and 5.9 percentage points higher share of domestic tax revenues in total tax revenues. The effects are also sizable when the other measures of state capacity are considered. Meanwhile, countries engaged in internal wars have, on average, lower levels of state capacity. More precisely, a one standard deviation increase in the incidence of internal wars corresponds to a 1.7 percentage point decrease in the GDP share of total tax revenues (the coefficients are not significant for the other two measures of fiscal capacity). A country with one standard deviation higher incidence of internal wars has the protection against expropriation risk and government effectiveness indices lower by 0.3 and 0.2, respectively. This country is associated with the ease of doing business ranking lower by 0.1, as well as lower values in the state's ability to formulate and implement national policy initiatives (0.5) and the implementation and enforcement of policy (0.1) indices.

Given the data limitations, adding income inequality to the list of explanatory variables comes at a cost in terms of the number of observations. Panel B in Table 4 reports these

regressions and shows that the previous results generally hold. The only exception is that the estimate of the internal wars coefficient loses significance in the regression which uses the GDP share of total tax revenues as the dependent variable. The main result is that lower income inequality is associated with higher levels in two of the measures of state capacity. More specifically, a one standard deviation decrease in the Gini coefficient is associated with an increase of 0.4 in the protection against expropriation risk index and an increase of 0.2 in the government effectiveness index. When the other state capacity measures are used, the coefficient estimate of the Gini coefficient turns out to be not statistically significant.

Finally, the coefficient estimate of the Latin America dummy is statistically significant when state capacity is measured with the three fiscal variables and the ease of doing business ranking. These results suggest that the model is not able to capture all the variation when the fiscal measures and the ease of doing business ranking is used to measure state capacity. However, when the remaining bureaucratic measures of state capacity are considered, the coefficient estimate of the Latin America dummy is not statistically significant.

Table 5 reports the regressions using measures of democracy and inequality between 1960 and 1999 and wars between 1960 and 1997 as determinants of three recent measures of state capacity for which recent data for the 2000s is available (taxes over GDP, government effectiveness, and the ease of doing business index). The basic results (reported in columns 1, 4 and 7) are similar to the ones obtained with the long-run data. The incidence of democracy and internal conflict seem to have a strong correlation with these measures of state capacity (positive in the case of former and negative in the latter). Importantly, economic inequality (measured as the log of the Gini coefficient) does have a negative and significant impact on state capacity. However, the effect of external wars vanishes in the case of the tax revenues over GDP, suggesting that interstate confrontations no longer play the role they had played in the earlier part

of the 20th century, when they contributed to the development of the state in Europe and the U.S.²⁵

The Latin America dummy has a negative and highly significant coefficient estimate when state capacity is measured as tax revenues (over GDP), but not with the other two measures of state capacity, suggesting that it does not add any explanatory power. In the regression using the tax ratio as the dependent variable, the dummy acts as a substitute for the Gini coefficient. Since inequality is a better way of capturing the specificity of Latin America, rather than a dummy, and in order to explore the role of economic inequality even further, the regressions reported in columns 3, 6 and 9 include a new term corresponding to the interaction of the measures of political and economic inequality (i.e., the Gini coefficient and the incidence of democracy). The estimate of the coefficient on the interacted term shows that when the (log) Gini coefficient is high, the effect of democracy on state capacity falls significantly. As Latin America has a much higher Gini coefficient than other parts of the world, this result can explain why progress in terms of democracy in the region has failed to deliver the expected results on state capacity. The conclusion to be drawn from this last set of exercises is that the model is able to explain the main determinants of state capacity. In the specific case of Latin America, democracy has a positive effect, but this effect is lower in the region compared to the other parts of the world. Higher economic inequality seems to partially undermine the effects of political democratization on the incentives to invest in state capacity.

Conclusion

As Albert O. Hirschman (1995, Ch. 15) said, the more conspicuous characteristic of Latin America's recent experience is diversity and the most interesting stories are country-specific rather than broad generalizations. But, to understand that diversity, such as the emergence of

²⁵ These results are in line with the panel estimations in Cárdenas and Eslava (2010) where internal war, rather than external, seems to be the key driver explaining changes in state capacity.

Brazil as a regional power, the economic problems of Mexico, and the exceptional performance of Chile, few concepts are as important as state capacity.

This paper has attempted to explain why state capacity is generally low in Latin America. In doing so, it has identified four key determinants: the degree of political and economic inequality, and the incidence of internal and external wars. Both theory and evidence show that the concentration of political and economic power reduce the incentives to invest in state capacity. Although each one of these forms of inequality operates through different mechanisms, their joint presence is particularly damaging. Economic inequality exacerbates the problems caused by political inequality and vice versa. By the same token, the adoption of democratic practices does not deliver its full benefits in countries that are highly unequal in economic terms. This can be part of the explanation as to why democratization in Latin America has failed to deliver the expected results in terms of state capacity.

In addition to moral objections, external wars are easily discarded on empirical grounds as a viable strategy for state building. During the last 50 years, interstate wars have had no effect in explaining fiscal state capacity, suggesting that the earlier experiences of Europe and the U.S. are not replicable. While the effects of external wars have lost significance, internal wars are a major and growing source of problems for many countries, especially those that are former colonies. In fact, between 1960 and 1997 the average former colony spent 10 percent of the time fighting internal wars with devastating effects on state capacity.

Although this paper makes some progress in understanding the way political and economic inequalities jointly determine state capacity, as well as the role of conflict, it is silent on a number of interesting questions that deserve further study. One important issue relates to the effects of state capacity on economic inequality, which need to be modeled and incorporated in the empirical investigation. Another interesting extension is to model civil war as a joint outcome of political and economic inequality. Finally, this paper does not cover the relationship between state capacity and economic growth and productivity. Determining the precise channels

though which state capacity affects economic wellbeing is another promising route for future research.

Appendix

Proof 1. The Effect of Political Inequality $\rho^A - \rho^B$ on Investment in State Capacity:

In order to simplify the notation in the rest of the proof, define the level of political inequality as $\rho^A - \rho^B = \psi$. Recall that the sum of the political weights is equal to unity, $\rho^A \beta^A + \rho^B \beta^B = 1$. Using the new political inequality definition and this constraint, the weighting parameters can be re-expressed as $\rho^A = 1 + \psi \beta^B$ and $\rho^B = 1 - \psi \beta^A$. Updating the optimality condition in Eq. (13) with these expressions gives:

$$\begin{aligned} \lambda(\alpha_1) F_\tau(\tau_2 - \tau_1) = & [1 - H(1 + \psi \beta^B)] [\beta^A Y^A + \beta^B Y^B] E \{ \alpha_2 | \alpha_2 > (1 + \psi \beta^B) \} \\ & - [1 - H(1 + \psi \beta^B)] [(1 + \psi \beta^B) \beta^A Y^A + (1 - \psi \beta^A) \beta^B Y^B] \\ & + H(1 + \psi \beta^B) \psi [\gamma \beta^B Y^B - (1 - \gamma) \beta^A Y^A] \end{aligned} \quad (16)$$

Since there is no income inequality $Y^A = Y^B = Y$, this equation can be further simplified as:

$$\begin{aligned} \lambda(\alpha_1) F_\tau(\tau_2 - \tau_1) = & [1 - H(1 + \psi \beta^B)] Y E \{ \alpha_2 | \alpha_2 > (1 + \psi \beta^B) \} \\ & - [1 - H(1 + \psi \beta^B)] Y [(1 + \psi \beta^B) \beta^A + (1 - \psi \beta^A) \beta^B] \\ & + H(1 + \psi \beta^B) \psi (\gamma - \beta^A) Y \end{aligned} \quad (17)$$

To determine the effect of political inequality on the state capacity investment decision, take the derivative of the right hand side of Eq. (17) with respect to ψ , which gives $-\beta^B h(1 + \psi \beta^B) \psi (1 - \gamma) Y - H(1 + \psi \beta^B) (\beta^A - \gamma) Y$. Assuming that there is political instability $\beta^A \geq \gamma$, this derivative becomes negative. The optimality condition in Eq. (17) has to hold in the equilibrium; therefore as its right hand side decreases with increasing political inequality ψ , the left hand side should also decrease. This would be possible only if $F_\tau(\tau_2 - \tau_1)$ decreases, as a result of a decrease in the level of investment in state capacity $(\tau_2 - \tau_1)$.

Proof 2. The Effect of Income Inequality ε on Investment in State Capacity:

Recall the optimality condition in Eq. (14):

$$\begin{aligned} \lambda(\alpha_1) F_\tau(\tau_2 - \tau_1) = & [1 - H(\rho^A)] [\beta^A (Y + \varepsilon) + \beta^B (Y - \varepsilon)] E \{ \alpha_2 | \alpha_2 > \rho^A \} \\ & - [1 - H(\rho^A)] [\rho^A \beta^A (Y + \varepsilon) + \rho^B \beta^B (Y - \varepsilon)] \\ & + H(\rho^A) (\rho^A - \rho^B) [\gamma \beta^B (Y - \varepsilon) - (1 - \gamma) \beta^A (Y + \varepsilon)] \end{aligned} \quad (18)$$

To determine the effect of income inequality ε on the level of investment in state capacity, take the derivative of the right hand side of Eq. (18) with respect to ε , which gives $-[1 - H(\rho^A)] (\beta^B - \beta^A) E \{ \alpha_2 | \alpha_2 > \rho^A \} - [1 - H(\rho^A)] [\rho^A \beta^A - \rho^B \beta^B] - H(\rho^A) (\rho^A - \rho^B) [\gamma \beta^B + (1 - \gamma) \beta^A]$. This derivative is negative. As the right hand side of Eq. (18) decreases with increasing income inequality, the left hand side should also decrease in order to maintain the equality. This would

be possible only if $F_{\tau}(\tau_2 - \tau_1)$ decreases, which happens when the level of investment in state capacity ($\tau_2 - \tau_1$) decreases.

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Table 1: Descriptive Statistics

Measures of State Capacity								
	Obs.	Mean	Std.	Min.	Max.	25th Percentile	75th Percentile	Period Covered
Total Taxes (% of GDP)	127	20.63	10.52	1.86	51.43	13.12	27.02	1980-2006
Total Taxes (% of GDP)	127	20.83	10.84	2.97	51.00	12.67	27.65	2000-2006
Income Taxes (% of GDP)	127	8.64	8.53	0.00	37.30	2.61	11.44	1980-2000
Dom. Taxes (% of Tot. Taxes)	127	77.04	17.56	32.16	99.71	65.19	93.57	1980-2006
Protection Ag. Exp. Risk In.	129	7.19	1.75	2.40	10.00	5.99	8.49	1982-1997
Ease of Doing Bus. Ranking	181	0.50	0.29	0.00	1.00	0.25	0.75	2009
Government Eff. Index	210	0.01	0.98	-2.10	2.29	-0.70	0.71	1996-2008
Government Eff. Index	210	0.01	0.99	-2.12	2.27	-0.70	0.70	2002-2008
Policy Imp. & Enf. Index	151	2.01	0.72	0.26	3.73	1.52	2.44	'90, '99, '00, '02-'06
State's Ability Index	131	5.45	2.16	0.00	10.00	3.89	6.66	'90, '99, '00, '02
Determinants of State Capacity								
	Obs.	Mean	Std.	Min.	Max.	25th Percentile	75th Percentile	Period Covered
Democracy (% of Years)	156	0.27	0.38	0.00	1.00	0.00	0.41	1900-1975
Democracy (% of Years)	161	0.35	0.38	0.00	1.00	0.00	0.60	1960-1999
External Wars (% of Years)	156	0.07	0.11	0.00	0.57	0.00	0.12	1900-1975
External Wars (% of Years)	161	0.03	0.08	0.00	0.39	0.00	0.03	1960-1997
Internal Wars (% of Years)	156	0.05	0.13	0.00	1.00	0.00	0.06	1900-1975
Internal Wars (% of Years)	161	0.08	0.16	0.00	0.87	0.00	0.04	1960-1997
Gini (Averages)	88	42.12	9.91	18.42	63.70	33.78	49.50	1900-1975
Gini (Averages)	142	41.34	10.82	21.42	74.33	32.34	49.07	1960-1999

Table 2: Measures of State Capacity - Regional Comparison

	Total Taxes (% of GDP) 1980-2006		Income Taxes (% of GDP) 1980-2000		Domestic Taxes (% of Tot. Taxes) 1980-2006		Prot. Ag. Exp. Risk Index 1982-1997	
	All Countries	Former Col.	All Countries	Former Col.	All Countries	Former Col.	All Countries	Former Col.
East Asia	2.565** (1.234)	3.071** (1.514)	3.062** (1.188)	4.783*** (1.367)	3.443 (4.229)	2.241 (6.017)	1.565*** (0.396)	1.135* (0.593)
Latin America & East Asia	-8.789*** (1.502)	-5.572*** (1.409)	-6.502*** (1.066)	-3.452*** (0.918)	7.079** (3.024)	10.550*** (3.085)	-0.845*** (0.293)	-0.121 (0.318)
Constant	22.210*** (1.098)	19.000*** (0.961)	9.754*** (0.906)	6.704*** (0.724)	75.460*** (1.859)	71.980*** (1.942)	7.261*** (0.190)	6.537*** (0.224)
Number of obs.	127	90	127	90	127	90	129	75
Adjusted R-sq.	0.082	0.070	0.060	0.049	0.019	0.074	0.032	0.008
	Ease of Doing Business Rank. 2009		Government Eff. Index 1996-2008		State's Ability Index		Policy Implementation & Enforcement Index	
	All Countries	Former Col.	All Countries	Former Col.	All Countries	Former Col.	All Countries	Former Col.
East Asia	0.186* (0.104)	0.045 (0.134)	0.656** (0.300)	0.377 (0.423)	1.267* (0.739)	0.803 (0.926)	0.471* (0.246)	0.164 (0.290)
Latin America & East Asia	-0.083 (0.052)	0.047 (0.057)	-0.309** (0.145)	0.047 (0.160)	-0.461 (0.567)	0.216 (0.620)	-0.289* (0.154)	-0.126 (0.175)
Constant	0.502*** (0.024)	0.372*** (0.034)	0.019 (0.076)	-0.337*** (0.100)	5.447*** (0.217)	4.771*** (0.323)	2.034*** (0.067)	1.871*** (0.105)
Number of obs.	181	98	210	104	131	73	151	80
Adjusted R-sq.	0.006	-0.010	0.007	-0.004	0.003	-0.010	0.012	-0.019

Table 3: Determinants of State Capacity - Regional Comparison

	Incidence of Democracy (% of Years)				Incidence of External Wars (% of Years)			
	1900-1975		1960-1999		1900-1975		1960-1997	
	All Countries	Former Col.	All Countries	Former Col.	All Countries	Former Col.	All Countries	Former Col.
East Asia	0.015 (0.105)	0.116 (0.138)	-0.275*** (0.101)	-0.264* (0.136)	0.168*** (0.056)	0.141** (0.071)	0.115*** (0.034)	0.114** (0.047)
Latin America & East Asia	-0.123* (0.064)	-0.156** (0.077)	0.137* (0.073)	0.176** (0.081)	-0.056*** (0.010)	-0.010 (0.009)	-0.021*** (0.007)	-0.023** (0.010)
Constant	0.293*** (0.036)	0.326*** (0.056)	0.338*** (0.035)	0.299*** (0.050)	0.070*** (0.009)	0.024*** (0.008)	0.028*** (0.006)	0.030*** (0.010)
Number of obs.	156	88	161	89	156	88	161	89
Adjusted R-sq.	0.003	0.005	0.012	0.026	0.092	0.173	0.103	0.113
	Incidence of Internal Wars (% of Years)				Log of Gini (Averages)			
	1900-1975		1960-1997		1900-1975		1960-1999	
	All Countries	Former Col.	All Countries	Former Col.	All Countries	Former Col.	All Countries	Former Col.
East Asia	0.112* (0.061)	0.143* (0.083)	0.066 (0.080)	0.135 (0.110)	-0.205*** (0.065)	-0.084 (0.063)	-0.275*** (0.054)	-0.243*** (0.056)
Latin America & East Asia	-0.006 (0.020)	-0.028 (0.029)	0.026 (0.039)	-0.009 (0.044)	0.233*** (0.046)	0.134*** (0.048)	0.291*** (0.035)	0.118*** (0.037)
Constant	0.048*** (0.012)	0.070*** (0.024)	0.069*** (0.014)	0.104*** (0.025)	3.666*** (0.033)	3.764*** (0.035)	3.647*** (0.026)	3.820*** (0.028)
Number of obs.	156	88	161	89	88	55	142	77
Adjusted R-sq.	0.030	0.020	0.009	0.009	0.105	0.067	0.125	0.111

Table 4: Long-run Determinants of State Capacity

a. Without Income Inequality

	Total Taxes (% of GDP) 1980-2006	Income Taxes (% of GDP) 1980-2000	Domestic Taxes (% of Total Taxes) 1980-2006	Prot. Ag. Exp. Risk Index 1982-1997	Ease of Doing Business Rank. 2009	Government Eff. Index 1996-2008	State's Ability Index	Policy Imp. & Enforcement Index
Democracy (1900-1975)	10.790*** (2.861)	9.274*** (2.546)	5.494 (4.902)	1.878*** (0.365)	0.229*** (0.070)	1.039*** (0.230)	1.429*** (0.494)	0.613*** (0.140)
External Wars (1900-1975)	21.560** (8.526)	16.470** (7.490)	52.360*** (12.170)	3.368*** (1.056)	0.630*** (0.158)	1.984*** (0.540)	4.191*** (1.462)	1.177*** (0.432)
Internal Wars (1900-1975)	-12.700* (7.409)	-3.414 (4.223)	11.220 (10.150)	-2.205** (1.048)	-0.486*** (0.148)	-1.495*** (0.449)	-3.435*** (1.076)	-1.071*** (0.308)
Latin America Dummy	-3.554** (1.655)	-3.591*** (1.261)	10.190*** (3.409)	-0.043 (0.315)	0.120* (0.064)	0.147 (0.159)	0.036 (0.611)	-0.086 (0.170)
Constant	15.190*** (1.215)	5.004*** (0.857)	70.040*** (2.284)	6.121*** (0.233)	0.269*** (0.037)	-0.583*** (0.106)	4.779*** (0.314)	1.755*** (0.098)
Number of obs.	104	104	104	119	147	154	128	144
Adjusted R-sq.	0.528	0.578	0.279	0.465	0.439	0.472	0.227	0.350

b. With Income Inequality

	Total Taxes (% of GDP) 1980-2006	Income Taxes (% of GDP) 1980-2000	Domestic Taxes (% of Total Taxes) 1980-2006	Prot. Ag. Exp. Risk Index 1982-1997	Ease of Doing Business Rank. 2009	Government Eff. Index 1996-2008	State's Ability Index	Policy Imp. & Enforcement Index
Democracy (1900-1975)	8.400*** (2.850)	7.290*** (2.663)	6.328 (5.784)	1.788*** (0.487)	0.276*** (0.094)	1.121*** (0.238)	1.879*** (0.593)	0.612*** (0.192)
External Wars (1900-1975)	25.800*** (8.656)	19.890*** (7.342)	46.290*** (13.970)	3.352*** (1.201)	0.620*** (0.197)	2.024*** (0.577)	4.013** (1.666)	1.543*** (0.527)
Internal Wars (1900-1975)	-15.020 (9.467)	-4.742 (5.081)	1.405 (9.435)	-3.713*** (1.093)	-0.574*** (0.172)	-2.184*** (0.397)	-6.906*** (2.217)	-1.957*** (0.417)
Latin America Dummy	-6.267** (2.443)	-4.809** (1.960)	11.690*** (4.293)	0.364 (0.425)	0.136 (0.082)	0.294 (0.203)	0.558 (0.730)	0.101 (0.206)
Log of Gini (1900-1975)	5.455 (5.818)	1.511 (4.043)	-2.394 (10.650)	-1.444* (0.778)	-0.098 (0.112)	-0.964** (0.395)	-0.177 (1.601)	-0.107 (0.403)
Constant	-2.410 (22.010)	0.765 (15.180)	80.060* (40.180)	11.540*** (2.911)	0.642 (0.436)	3.147** (1.552)	5.261 (6.188)	2.134 (1.562)
Number of obs.	67	67	67	76	78	80	69	77
Adjusted R-sq.	0.583	0.591	0.286	0.565	0.502	0.599	0.295	0.437

Table 5: Determinant of State Capacity - Recent Measures

	Total Taxes (% of GDP) 2000-2006			Government Eff. Index 2002-2008			Ease of Doing Bus. Index 2009		
Democracy (1960-1999)	9.833*** (2.394)	13.150*** (2.390)	131.600*** (43.620)	1.184*** (0.188)	1.183*** (0.197)	7.111*** (2.262)	0.355*** (0.061)	0.332*** (0.063)	0.658 (0.694)
External Wars (1960-1997)	2.203 (8.495)	-4.426 (8.338)	7.443 (8.174)	1.722*** (0.428)	1.723*** (0.436)	1.802*** (0.399)	0.378** (0.165)	0.429** (0.167)	0.382** (0.168)
Internal Wars (1960-1997)	-18.840*** (4.900)	-17.710*** (4.440)	-16.840*** (5.262)	-1.116*** (0.263)	-1.117*** (0.267)	-1.068*** (0.273)	-0.243* (0.128)	-0.250* (0.126)	-0.240* (0.131)
Log of Gini (1960-1999)	-9.854** (4.709)	-3.144 (4.733)	10.190 (7.883)	-1.433*** (0.260)	-1.433*** (0.278)	-0.601 (0.381)	-0.271*** (0.079)	-0.315*** (0.085)	-0.229** (0.116)
Latin America Dummy	-	-9.452*** (2.475)	-	-	0.001 (0.185)	-	-	0.077 (0.072)	-
Democracy*Log of Gini (1960-1999)	-	-	-32.240*** (11.700)	-	-	-1.583*** (0.601)	-	-	-0.081 (0.188)
Constant	53.180*** (18.130)	30.070* (17.550)	-23.920 (30.100)	4.853*** (1.027)	4.856*** (1.084)	1.685 (1.489)	1.292*** (0.304)	1.438*** (0.322)	1.133** (0.446)
Number of obs.	93	93	93	131	131	131	129	129	129
Adjusted R-sq.	0.532	0.599	0.587	0.650	0.647	0.664	0.513	0.515	0.510

Figure 1: Changes in Total Tax Revenues

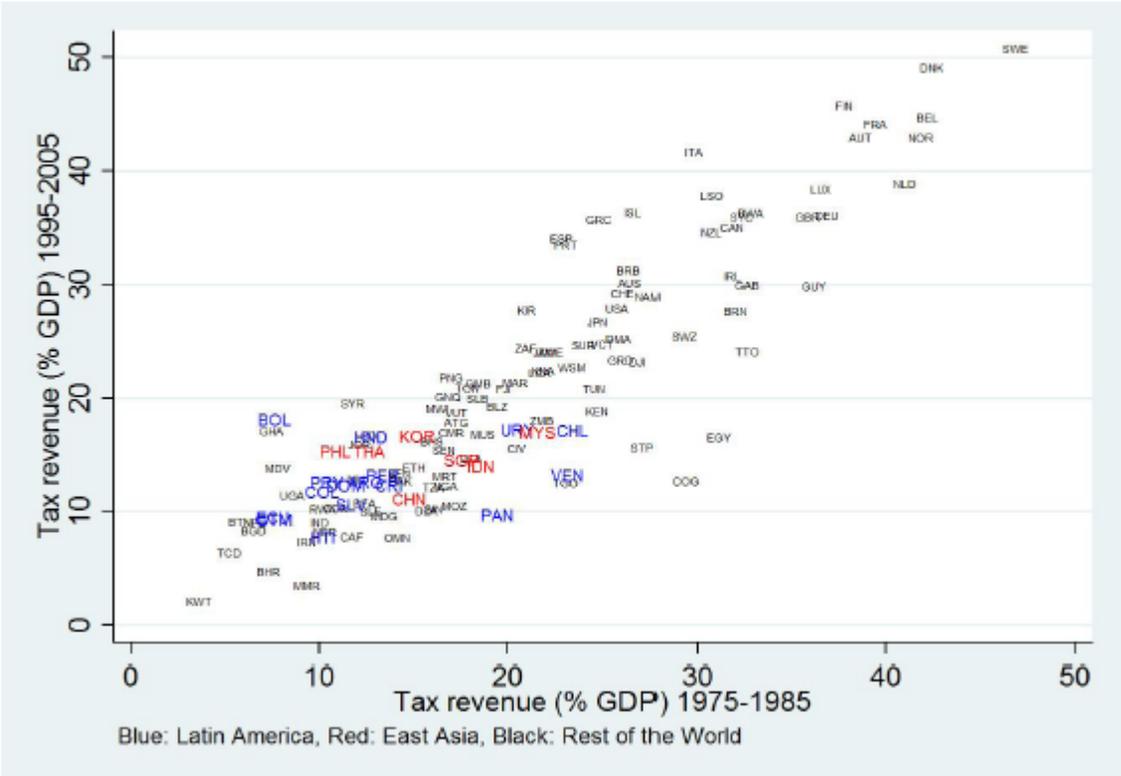


Figure 2: Polity2 Measure: Democracy - Autocracy (+10, -10)

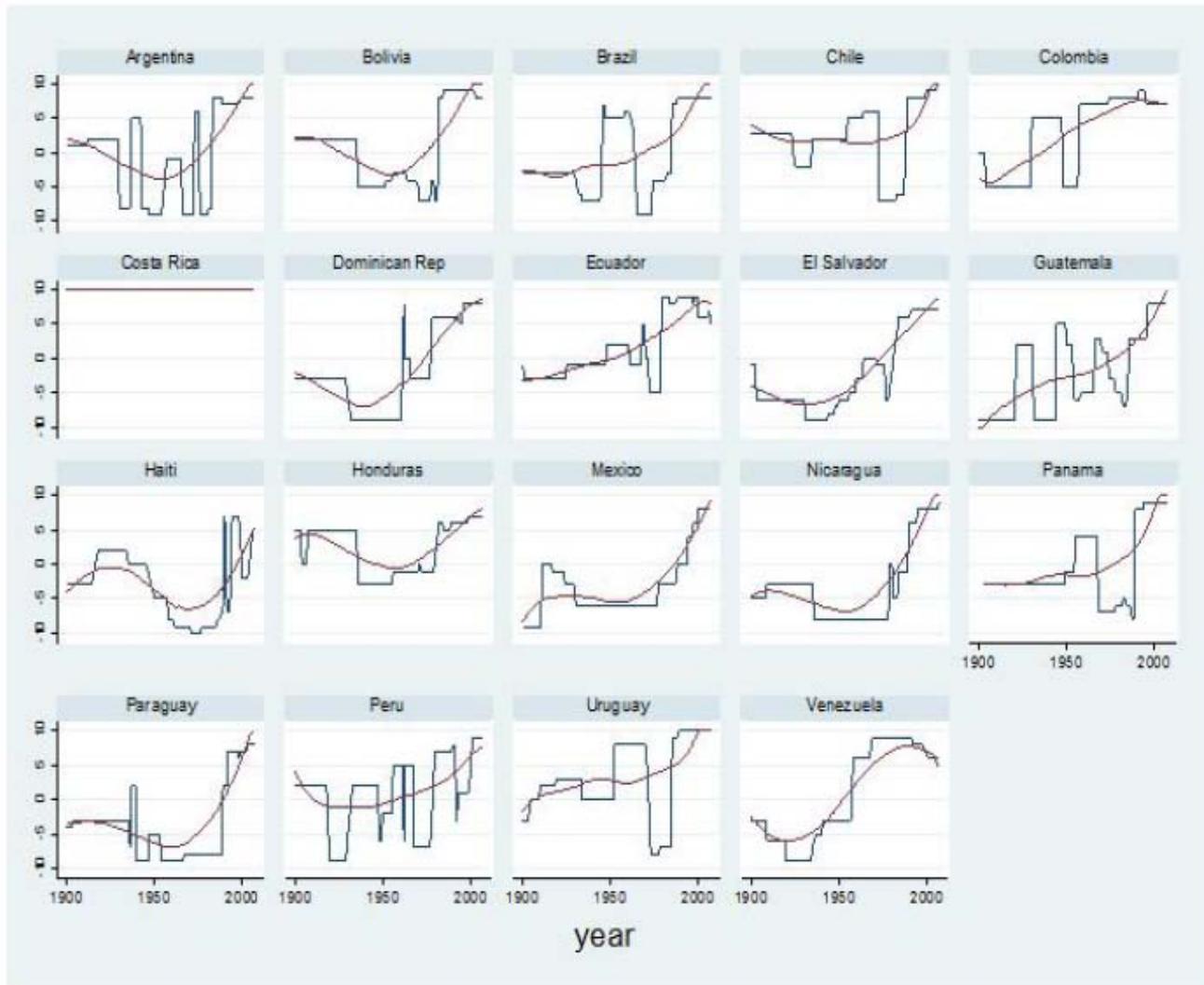
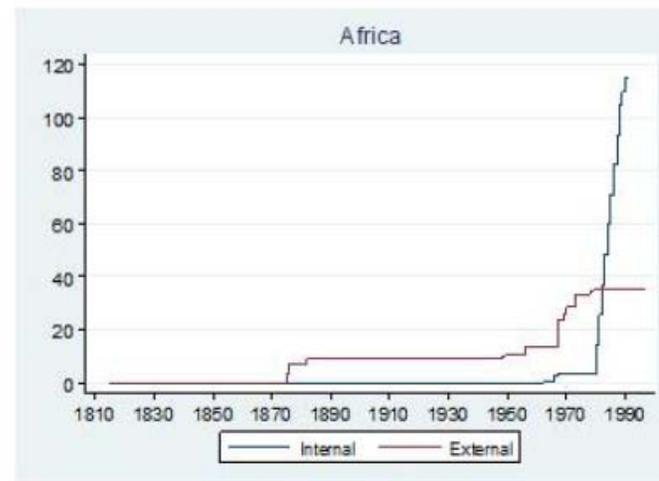
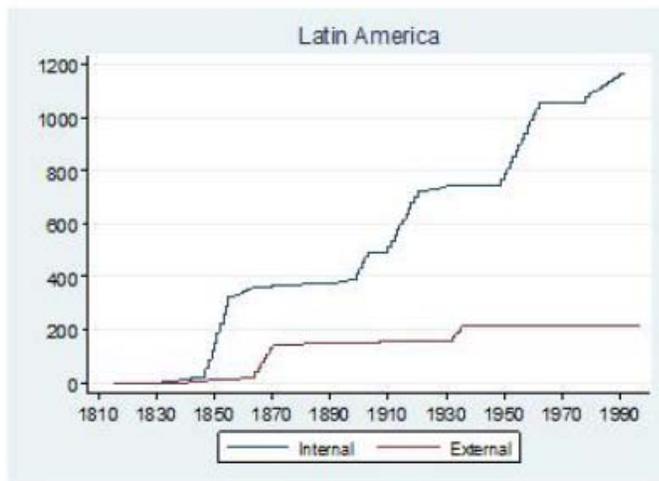
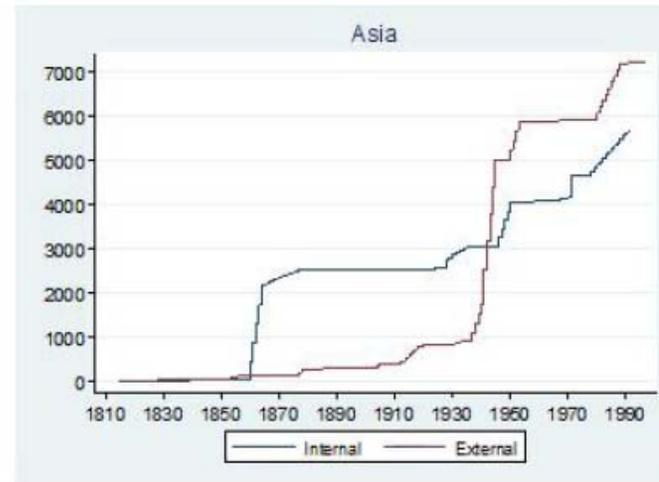
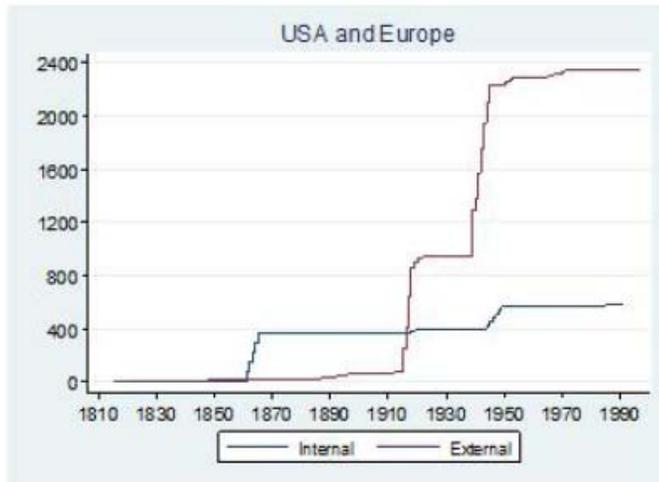
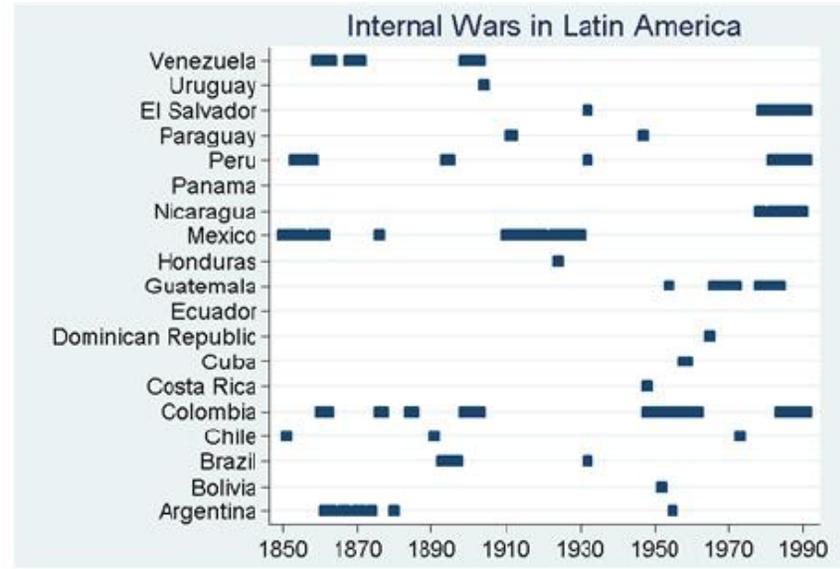


Figure 3: Cumulative Battle Deaths (Thousands)



Source: Own calculations based on Correlates of War database.

Figure 4: Wars in Latin America



Source: Own calculations based on Correlates of War database.

Figure 5: Cross Correlations - Measures of State Capacity vs. Determinants of State Capacity

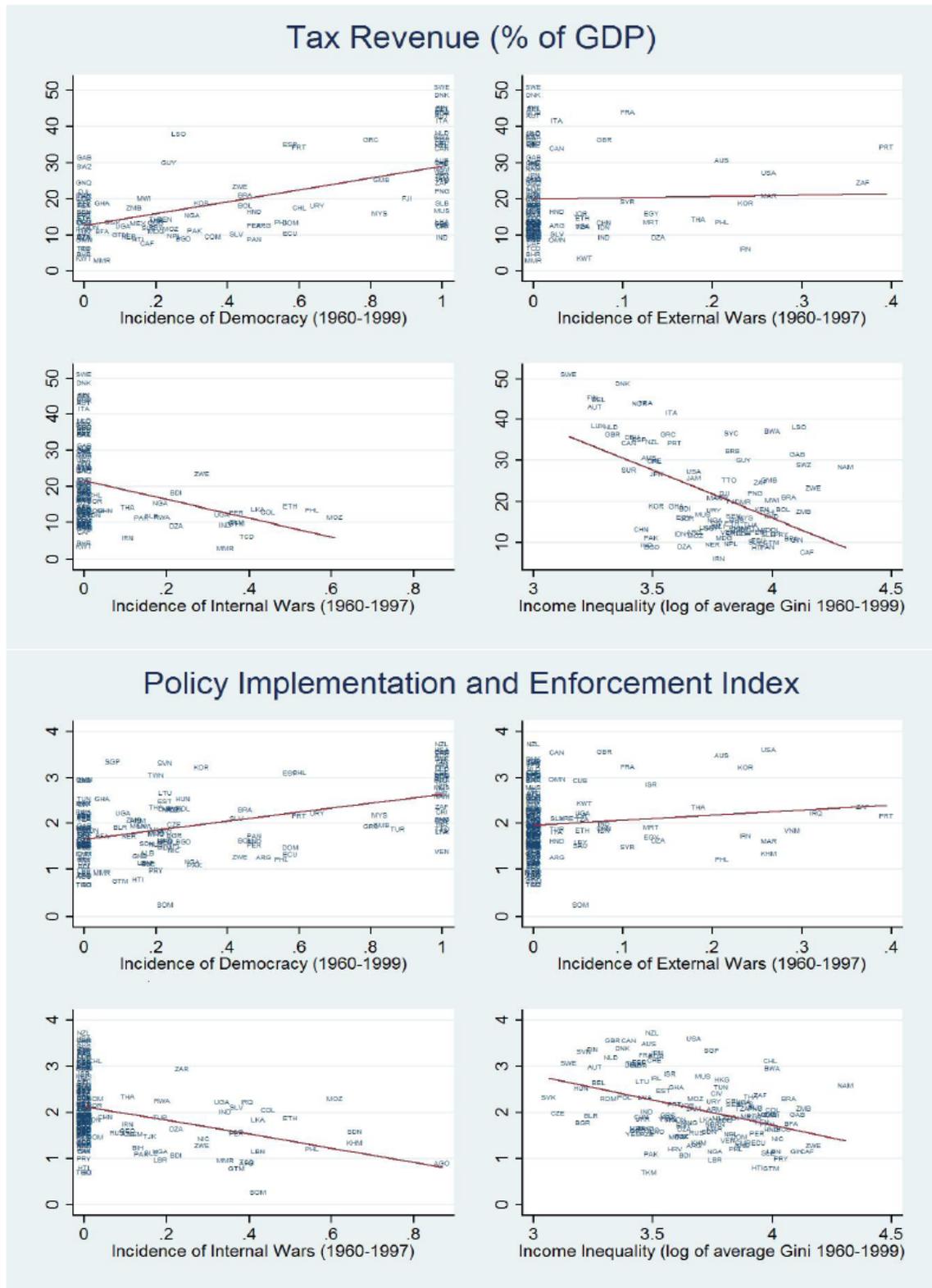


Figure 6: Cross Correlations (Cont.) - Measures of State Capacity vs. Determinants of State Capacity

