

The Current Developing State

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Abstract

This chapter examines what leads to the growth or decline of state capacity in the contemporary period by developing propositions drawn from a variety of perspectives in the scholarly literature and subjecting them to large-sample empirical tests using the State Capacity Dataset. In the process, the chapter contributes to the de-centering of the study of state formation and state capacity-building in three ways. First, by focusing on states in the contemporary period, it tests the extent to which foundational theories in the literature generalize beyond the historical contexts in which they were developed. Second, the approach is geographically inclusive, moving beyond Eurocentric accounts. Third, the approach does not give war primacy over any other factor that may affect the formation and growth of states.

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When it comes to theorizing about state formation and the construction of state capacity, we have an embarrassment of riches. Ever since states were “brought back in,” scholars in comparative politics, international relations and historical sociology have produced a vibrant stream of research that explores why states form and become strong in some cases, while remaining weak and fragile in others. Given the diversity and breadth of this research enterprise, we do not need to generate more theories but instead should seek to synthesize this body of work and construct a more complete narrative. This chapter pursues the latter goal.

In the process, the chapter contributes in three ways to the objective of “de-centering” theories of state formation and the growth of state capacity. First, its empirical focus on the current developing state tests the generalizability of theoretical propositions developed to explain state formation in historical time periods. The integrated perspective developed here portrays state formation, or degradation, as being influenced by a set of factors, the levels of which can be specified to reflect any particular period of time. Second, the theory is not confined geographically, consciously expanding beyond the Eurocentric nature of much of the literature. Finally, war and security concerns are not given predominance over other factors that can affect state formation. Domestic and international factors are treated in a more integrated fashion.

The chapter proceeds by drawing upon theories of state formation to identify three main challenges facing potential state-builders: the provision of security, the creation of political community, and the revenue imperative. The next section builds upon this discussion to produce a set of empirical propositions regarding key causal factors. Subsequently, I describe the data and then test predictions derived from this approach using the *State Capacity Dataset* (Hanson and Sigman 2013) for the years 1960-2010. I argue that the empirical findings from this

comparatively data-rich contemporary period help illustrate the value of a de-centered approach to understanding general processes of state formation and development.

An Integrated Perspective on State Formation

Given the complex, multifaceted nature of state-building processes, it is unsurprising that the literature on the subject contains many different perspectives to explain why states emerge and become strong in some cases but not others. The situation is akin to that of the proverbial blind men who touch different parts of the elephant and thus provide quite different descriptions.

Scholars in comparative politics tend to focus on the incentives for state capacity-building that arise from internal factors related to governance of the territory. Rulers may build greater state capacities in order to solidify their rule, increase their revenues, facilitate internal commerce, and settle disputes. States emerge as the legal-institutional expression of dominant actors or social forces, and they evolve in their capabilities over time as a function of the policies they are tasked to perform by state actors. Yet, as these institutions become entrenched and gain legitimacy within the populace, they also begin to take on a life of their own and serve to help define the incentives facing these actors and the options available to them. The endogenous nature of the relationship between institutions and political actors is described well in North (1990).

International relations scholars, naturally, are more focused on the state as an actor in the international system, particularly with respect to the role of conflict. State formation and the construction of state capacities are portrayed as responses to external threats and changes in military technology (Spruyt 2011). The bellicist theory of state formation sees state-building as an effort to build the coercive and extractive capabilities of the state to defend against external threats or engage in territorial expansion (Tilly 1990). War serves as a source of selective

pressure to weed out weaker states. Thies (2004, 2005) extends bellicist theory to include enduring interstate rivalries, finding that rivalries of this kind lead to the growth of state extractive capacity.

Geographical factors affect the strength of both these internal and external incentives to build greater state capacity. Rougher terrain makes it more difficult for a proto-state to have authority over a territory, while waterways and coastlines facilitate commerce and transportation, as well as the potential reach of the state. Natural barriers such as mountains and oceans, on the other hand, serve to mitigate threats from external powers, with effects that work in different directions when it comes to state-building. On the one hand, weaker incentives to build defensive capabilities may slow the growth of state capacity. On the other hand, geographically-protected states are less likely to be eliminated through conquest and absorption by neighboring powers.

All of these factors likely matter, and we should seek to integrate them in a coherent fashion. State capacities evolve as state actors respond to incentives to implement particular policies or defend against threats, and citizens accord legitimacy to the state to the degree that they accept this authority. Whether the motivation for these actions arises from internal or external conditions is not the fundamental issue. They are neither mutually exclusive nor competing explanations.

Accordingly, I argue, an important part of de-centering our understanding of state-making is to incorporate key causal factors from a broad range of theoretical perspectives into a common empirical framework. We can treat all of these factors as creating a range of possible stimuli for state formation and capacity-building that exist to varying degrees in different times and places. The potential value of this approach is both empirical and theoretical. Empirically, we can determine whether particular factors have the expected effects when controlling for other

important factors, and we can assess the magnitude of these effects compared to each other. Theoretically, a better understanding of which factors are important empirically can help us build a more integrated theory of state-making that accounts for a range of possible influences acting in concert and how they may interact with each other.

As a first step, I examine three main challenges facing potential state-builders: the provision of security, the creation of political community, and the revenue imperative. This discussion helps identify key independent variables that, theoretically, are connected with changes in state capacity. Once identified, we can operationalize these variables and employ them in empirical tests.

The Provision of Security

As Hintze (1975b) argues, in the beginning all state organization was military organization. Citizens banded together either in defense of territory or for purposes of seizing territory held by others. As the nature of threats grew and evolved due to changes in military technology and organization, the capacity of the state to wage war had to expand in response, leading to the emergence of territorial nation-states with large standing armies.

Wars can affect state development in several ways. They create pressure to develop the infrastructure to defend territory. When borders are contested, rulers must do more to extend the state's coercive reach out to these frontier areas, creating stronger linkages between the centers of power and outlying areas (Herbst 2014). Wars also force rulers to develop extractive capacities to mobilize military forces and money, requiring the development of bureaucratic organization (Tilly 1990). Additionally, wars serve to create nationalist sentiments that can build a sense of citizenship and cohesion (Hintze 1975a; Dannreuther 2007).

Tilly (1990) argues that state development in response to war has coercion-intensive and capital-intensive dimensions. The former requires the development of an extractive structure to squeeze revenues and manpower out of the population; the latter involves access to revenues through bargains with capitalists that can provide the resources to fund military operations. The strongest states have capacity in both dimensions. An important component of his theory is that competition between states creates the need to develop these capacities or face defeat. Wars thus foster stronger states. As Thies (2004, 2005) argues, enduring rivalries create similar incentives to build extractive capacity.

The dominant perspective from international relations literature, however, is that state development in the modern era is fundamentally different from earlier times due to changes in the nature of the international system. First, territorially-based sovereign states superseded other forms of organizing the international system and, in particular, the organization of extraterritorial violence (Spruyt 1994; Thomson 1994). Second, state borders are for the most part established, recognized internationally, and often defended by dominant powers in the international system when disputes arise (Jackson and Rosberg, 1982). In earlier times, frontier areas stood between different centers of power, leaving the precise boundaries subject to contestation. States in the post-WW II era less frequently face the same security imperatives that led to the extension of state infrastructure out to the territorial boundaries.

The Creation of a Political Community

Other theories focus more on internal factors that relate to the construction of a political community that confers legitimacy to the state. Holsti, for example, emphasizes the importance of the “ideas and myths that sustain the legitimacy of political orders and the communities on which those orders are based” (Holsti 1996, 45). In Holsti's framework, legitimacy has both

horizontal and vertical components. The former refers to agreement over the definition of the political community; the latter pertains to the principles on which the right-to-rule is based. This framework serves as a useful tool.

Baseline conditions for the construction of horizontal legitimacy differ. The greater the heterogeneity of the population, the less likely that there exists a shared sense of community. Loyalties to locality, kinship-based unit, or religion may dominate. Thus, where ethnic, linguistic, or religious diversity is greater, state builders face greater challenges in creating the idea that all people in the territory should be ruled by a common political order. As Weber's (1976) study of France makes clear, these challenges are not insurmountable, but they do require significant effort and time. Not until the 20th century did the idea of France as a nation take full hold. Prior to that time, inhabitants “knew themselves to be French subjects, but to many this status was no more than an abstraction” (p. 486). What changed was the growth of transportation linkages, broader markets, greater uniformity of schooling, and military service that created a shared understanding of what it meant to be French.¹

Challenges of horizontal legitimacy may be particularly acute when groups with a shared identity are split by territorial borders. Colonialism left in place a system of states that were created through processes that reflected the interests of the colonizing powers, producing borders that often bore little correspondence to population patterns. Generally, these borders were accepted by rulers in the post-colonial era (Herbst 2014), but this fact did not make the task of creating political community in the newly-independent states easier. As Holsti argues, a political community requires not just a notion of citizenship but a sentiment that binds people together.

¹ Singh and vom Hau (2016) argue that present-day ethnic heterogeneity is endogenous to the legacy of state-building in a particular territory. Consequently, we should be conscious of the possibility that any correlation between the levels of state capacity and ethnic diversity across countries in the contemporary period are a function of these histories.

Vertical legitimacy requires a widespread acceptance of the regime's right to rule. In earlier times, this authority may be based upon the divine rights of kings or the mandate of heaven. The Enlightenment era brought a fundamental shift in values that made the “consent of the governed” the primary source of legitimacy, led to the creation of liberal democracies, and influenced absolutist rulers to reframe themselves as servants of the people. Although history provides examples of autocrats that brought considerable improvements to the lives of common citizens, thus sustaining the legitimacy of their regimes, democratic regimes are logically much more conducive to the creation of vertical legitimacy.

Ertman (1997) argues for the importance of strong, representative assemblies in affecting the character of state development. These assemblies produced constitutional, rather than absolutist, states with greater internal cooperation and stronger connections between central and local governments. When participatory politics at the local level are combined with a strong political center, conditions are optimal for balanced political, social and economic development. This combination prevents the rise of patrimonialism in politics and fosters the rise of the modern bureaucratic state.

The Revenue Imperative

Since revenue collection is so fundamental to the operation of the state, the relationship between the nature of revenue collection and the state's development is naturally very strong. As Levi succinctly puts it, “[t]he history of state revenue production is the history of the evolution of the state” (Levi 1988, 1). The form and extent of taxation in Levi's formulation is a function of the bargaining power of the ruler relative to subjects and the costs of revenue collection. Actions of rulers to maximize revenues subject to these constraints leads to the evolution of state structures. Capable, effective states have reliable sources of revenue.

Revenue collection varies in difficulty across contexts according to many factors: the nature of production, the degree of commercial activity, the extent of compliance on the part of constituents, the political power of those with taxable wealth, and the level of natural resources. Rulers can attempt to extract revenues solely through coercive means, but evidence suggests that institutionalized bargaining and representative institutions are more conducive to robust revenue collection in the long run.² The latter approach builds greater cooperation and compliance with tax policies.

In Tilly's (1990) framework, the presence of readily taxable resources is a critical factor that permits a capital-intensive extractive strategy driven by agreements with holders of capital. Robust long-distance trade, both internally and with external trading partners, is an engine of wealth creation that provided an important source of revenues for the state, but excessive demands by the state could drive these merchants to different locations. Rulers instead found it worthwhile to negotiate with capital-holding classes in order to raise revenues for war (p. 64). In capital-poor areas, by contrast, strategies of coercive extraction prevailed.

This logic is consistent with the fiscal sociology perspective, which argues that variations in the source of revenue are strongly connected to the forms that states take. A central claim is that there are “strong synergies between (a) the degree of dependence of rulers on tax revenue, (b) the emergence of representative government, and (c) the strength and resilience of the state in the context of interstate competition” (Moore 2004, 299). Not only can these states borrow more readily when needs arise, but there is a governance dividend that emerges from the ongoing negotiations between states and citizens. Taxation leads to more accountable government and thus more effective states.

² For a discussion, see Bräutigam et al. (2008).

The contrast is with rentier states that obtain revenues through other means. Revenues from oil, minerals, or international development assistance help satisfy the state's revenue imperative, but they do not require the kinds of state-society interactions that improve administrative capacities of the state. Empirically, then, we should observe that states with high dependence on natural resource extraction and foreign aid will have slower growth of state capacity than states that depend on taxation.

Overall, discussion of these three challenges illustrates the range of factors that are relevant for state formation and the development of state capacity. The various theoretical perspectives in the literature are complimentary, rather than competing, since they focus on different aspects of a complicated set of processes. Working toward a more comprehensive account, accordingly, involves bringing all of these factors into a single model in which we can assess their relevance in a more systematic way.

Some Empirical Propositions

Drawing upon the discussion above, I specify a set of propositions that can be tested empirically in the contemporary period. The goals are to demonstrate the necessity of a broader theoretical approach and to support the development of such a theory by identifying the factors that are strongly connected to changes in the levels of state capacity across countries.

A number of basic geographic and demographic characteristics are expected to facilitate or hinder the development of greater state capacity. These factors affect the ease with which states can penetrate their territories and collect revenues from populations. All else being equal, states should have more difficulty consolidating their hold over territories that are larger, that have fewer transportation linkages, and that have rougher terrain. Areas that are more distant from the center of political power are more likely to be disconnected from the political

community and sit outside the easy reach of the state, particularly when transportation infrastructure is poor. Low population density, furthermore, raises the marginal costs of revenue collection.

Herbst (2014) explains the rationale for these propositions in his analysis of sub-Saharan Africa, where neither pre-colonial nor colonial states were constructed to control large territories. With low population density, land was relatively plentiful, so there was little incentive to build an infrastructure to defend particular borders. Although colonial powers created territorial states by drawing borders on maps, they often did very little to build an administrative network that extended beyond the capital cities, which were usually located on the coast. Transportation infrastructure, such as railways, was built for the purpose of resource extraction rather than to facilitate the creation of a coherent polity. Thus, newly-independent states were left with bureaucratic apparatuses that had little ability to penetrate throughout the territory. Where transportation linkages are more robust and population density is greater, however, states can more easily reach citizens.

Proposition 1: Land area and rough terrain hinder the growth of state capacity.

Proposition 2: Greater population density, road density, and access to waterways support the growth of state capacity.

The construction of a political community characterized by vertical and horizontal legitimacy is hindered by factors that impede the formation of loyalty toward the state relative to local, religious, or kinship ties. These factors are likely to include high levels of social diversity (such as ethnic or linguistic diversity), status as a former colony, and the level of democracy. In the empirical literature, high levels of ethnic fractionalization are statistically correlated with poorer performance on a range of economic, political and human development indicators

(Easterly and Levine 1997; Montalvo and Reynal-Querol 2005; Kimenyi 2006). Political competition along ethnic lines, similarly, may hinder the formation of attachments to the broader nation-state. Although state policies and the nature of state-building can affect ethnic identities over time and thus what we today observe as ethnic diversity in part reflects the legacy of state-building policies (Weber 1976; Singh and vom Hau 2016), the contemporary level of diversity is still relevant for explaining the degree to which state capacity can change from a given level.

Proposition 3: Greater social diversity hinders the growth of state capacity.

The challenges of creating a political community associated with the state are greater in former colonies, especially those whose borders do not align with pre-colonial institutions or the distribution of ethnic populations. On average, accordingly, we should expect that the growth of state capacity is slower in former colonies.

Proposition 4: Post-colonial status is associated with slower growth of state capacity.

Democratic governance in which citizens enjoy high levels of political rights, on the other hand, should help build the legitimacy of the state. As Moore (2004) contends, one effect of democracy is a governance dividend. Democratic states should build state capacity more quickly than non-democratic ones. A study by Wang and Xu (2015) finds that democratic political contestation is robustly associated with the growth of state capacity over time.

Proposition 5: In polities where levels of democracy and political rights are higher, state capacity should grow more quickly.

Wars and rivalries threaten the security of the state. Rivalries, especially those that continue over a long period of time, should induce states to build coercive capacity and the administrative infrastructure to support national defense (Thies 2004, 2005). The ongoing nature

of the threats creates competitive pressure for continued accretion of capabilities, and these pressures should be stronger when states face multiple rivals.

Proposition 6: Growth of state capacity is faster for states that have enduring or multiple rivalries.

The effect of wars could work in either direction, since the effect on state capacity likely hinges upon the outcome of the conflict. Provided the country does not face military defeat, wars with rivals likely have the same effects as rivalry in general. States also engage in isolated conflicts, however, where there is not an enduring rivalry. It is much less likely that these isolated conflicts would have the same positive effect on the growth of state capacity that rivalry has.

Proposition 7: Isolated conflicts are not linked to subsequent changes in state capacity.

Finally, as the analysis of the revenue imperative contends, states that depend upon natural resource rents or foreign assistance for revenue have fewer incentives to develop extensive taxation systems that typically lead to pressures for accountability and representative government. Although revenues gained from rents can support the construction of coercive capacities of the state, these states are less likely to benefit from the governance dividend predicted by the fiscal sociology literature. Administrative capacity is likely to grow more slowly.

Proposition 8: Revenues from rents are associated with slower growth of administrative capacity.

Each of these propositions has strong theoretical support from the literature on state formation and state capacity-building, though most of these accounts are focused on particular

factors. With a more integrated empirical approach, we have the ability to determine whether some of these factors are more important than others.

Methodology and Data

One advance in the present study is the use of the *State Capacity Dataset*, which includes annual estimates from 1960 to 2010 of the level of state capacity for all countries in the Polity dataset (Marshall and Jaggers 2009). These data were produced with a Bayesian latent variable analysis technique developed by Arel-Bundock and Mebane (2011) that uses Markov Chain Monte Carlo (MCMC) estimation methods. Specifically, a set of observed indicators believed to be strongly related to state capacity is employed to recover an estimate of this latent and unobserved concept.

In all, Hanson and Sigman (2013) employ 25 different indicators to represent three key dimensions of state capacity: administrative, extractive and coercive capacity. Administrative capacity is represented by a variety of measures: expert ratings of bureaucratic quality, census frequency, statistical capacity, and a mixture of revenues that involves taxes on income rather than trade. Extractive capacities of the state are represented by the overall level of taxation, ratings from the World Bank and other organizations, and a comparison of actual revenues to expected revenues (Arbetman-Rabinowitz et al. 2011). Finally, coercive capacities of the state are represented by military spending, regular military personnel, paramilitary and police personnel, and measures of political terror.

The power of the MCMC method compared to traditional principal components analysis is its robustness to missing data. Rather than drop a country-year because one data point is missing, the method uses all available indicators for that country-year to make the best estimate possible, along with the level of precision of this estimate. Thus, although data are sparser in the

early part of the 1960-2010 time-period, we still can produce estimates of state capacity. The resulting dataset thus has far more extensive coverage than other efforts to measure bureaucratic quality or governance, covering every independent state with more than 500,000 in population.³ *Capacity* is normalized to the standard normal scale, so a one-unit increase in the variables represents one standard deviation in the level of state capacity across countries.

Figures 1 and 2 help illustrate the nature of the Capacity measure. Figure 1 shows the estimates for four countries: Botswana, Malaysia, Somalia, and Haiti. The levels and trajectories depicted in these trend lines appear to be plausible representations of state capacity in these countries over time. Figure 2 shows the mean level of Capacity by region over time. Aside from regional differences in estimated state capacity, we see a significant drop in mean Capacity for the Eastern Europe and Central Asia regions when the Soviet Union dissolves in 1991 and newly independent states enter the dataset.

³ The population threshold comes from the Polity dataset, which we use as a starting point. The excluded states are thus quite small in size; the bulk of them are islands.

Figure 1: Evolution of Capacity in Four Countries

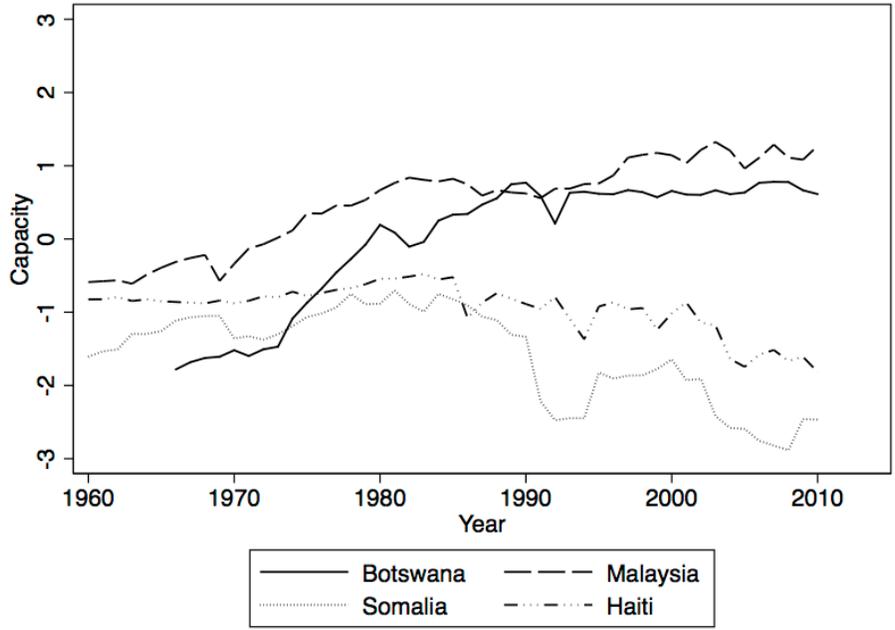
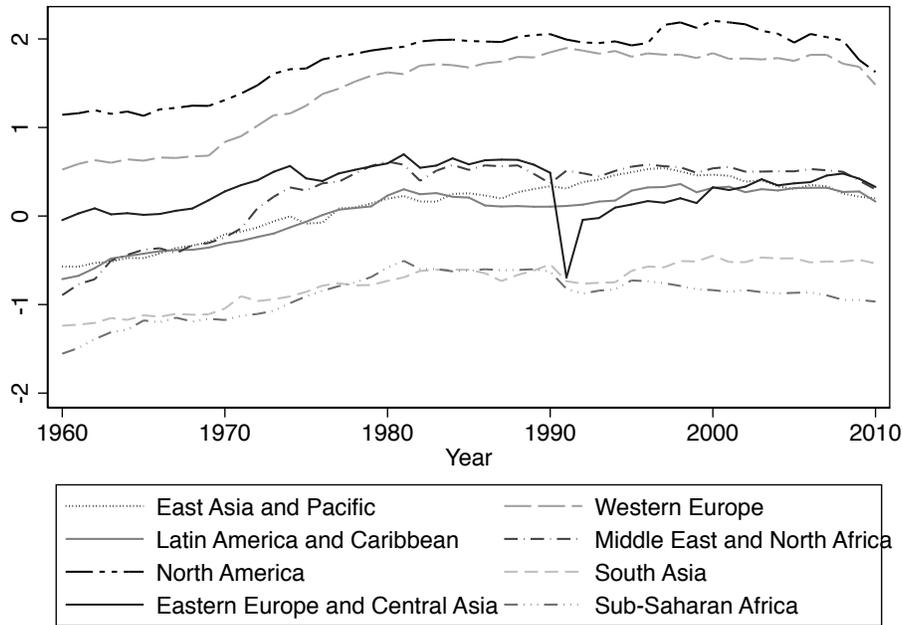


Figure 2: Evolution of Mean Capacity by Region



There are a couple of limitations to keep in mind. First, the data at the country level are a bit noisy from one year to the next due to changing availability of the component indicators. Accordingly, it is better to examine longer-term trends in state capacity rather than annual

changes. Second, the data are limited to the post-WW II era in which the world had been divided into territorial sovereign states with strong international norms against changing these borders. As such, the data are less well-suited to testing bellicist theories of state formation. We can, however, test whether rivalries and conflicts are associated with changes in the level of state capacity.

Table 1: Descriptive Statistics for Country Characteristics

Variable	Obs	Mean	Std. Dev.	Min	Max
(log) Area	149	12.27	1.74	6.51	16.61
SoilSuit	149	0.56	0.20	0.00	0.96
Rough	149	0.18	0.14	0.01	0.60
Coastline	149	0.34	0.33	0.00	1.00
EthnicFrac	149	0.47	0.26	0.00	0.93
Colonized	149	0.85	0.36	0.00	1.00

Data on more enduring country characteristics, such as geographical factors, are drawn from a variety of sources. Descriptive statistics for these fixed variables are presented in Table 1.⁴ Data on country land area (square km.), soil quality (*SoilSuit*), and roughness of terrain (*Rough*) come from Ashraf and Galor (2013). *SoilSuit* is the proportion of the country's soil that is considered suitable for agriculture; it is included in models to help control for the possibility that growth in state capacity may be affected by the fertility of the land. The variable *Rough* measures terrain ruggedness (surface elevation changes) based upon geospatial data, and the fraction of a country's borders that are coastal (*Coastline*) is calculated from public domain data. The latter captures access to sea transportation routes.

The level of ethnic diversity (*EthnicFrac*) comes from Alesina et al. (2003). It is based on the usual Herfindahl index, although what constitutes an ethnic group is determined to some

⁴ Of course, there are some changes in variables like ethnic fractionalization over time, but these changes tend to be slow. All these variables are treated as fixed throughout the time frame.

degree based upon country context. In some locales, language is a crucial differentiating factor, while race is more important in other contexts. In some robustness checks, levels of linguistic and religious diversity are employed as alternative measures of social diversity, yielding similar results. The variable *Colonized* is a dichotomous measure of whether a country was ever colonized, drawn from the *ICOW Colonial History Dataset* (Hensel 2016).

Table 2: Descriptive Statistics for Dataset with 10-year Time Periods

Variable	Obs	Mean	Std. Dev.	Min	Max
Capacity _{t-1}	685	-0.05	1.00	-2.18	2.50
Δ Capacity	675	0.13	0.46	-1.80	2.39
(log) PopDensity	885	3.80	1.58	-0.32	9.91
RoadDensity	663	0.55	0.97	0.00	8.31
Polity	861	5.13	3.60	0.00	10.00
Conflicts	853	0.26	0.85	0.00	19.00
Rivalries	853	0.90	1.82	0.00	20.00
(log) FuelProduction	912	2.46	3.00	0.00	10.91
Aid	787	4.69	7.56	-0.45	49.75

Since state capacity is not expected to change much on an annual basis, and the Capacity estimates are a bit noisy from year-to-year, I convert the annual data into a panel dataset with six time periods that are ten years in length. The dependent variable is Δ Capacity, the change in the level of Capacity during each ten-year period.

The log value of population density (*PopDensity*), measured as persons per square kilometer, comes from the World Development Indicators (World Bank 2016). I use the level of PopDensity at the beginning of the time period to avoid potentially endogenous relationships between the growth of state capacity and population density. A measure of the density of roadways (100 km of road per square km) comes from the International Road Federation (1989) and World Bank (2016).

There are many different measures that relate to the concept of democracy. Most of them are problematic in one way or another. I use the *polity2* index from the Polity dataset (Marshall

and Jagers 2009) rescaled to run from 0 to 10. In robustness checks, I find that the measure of political rights from Freedom House (2009) and the Unified Democracy Scores from Pemstein et al. (2010) produce very similar results.

For data on conflicts and rivalries, I turn to the *New Rivalry Dataset* (Klein et al. 2006). In these data, hostile interactions between two countries are coded as either isolated conflicts or rivalries. For the variable *Conflicts*, I calculate the mean number of isolated conflicts in which a country is involved on an annual basis during each period of time. As argued above, this kind of conflict is less likely to be associated with growth in state capacity than an enduring rivalry. The variable *Rivalries* is the mean number of such rivalries had by each country during each period of time.

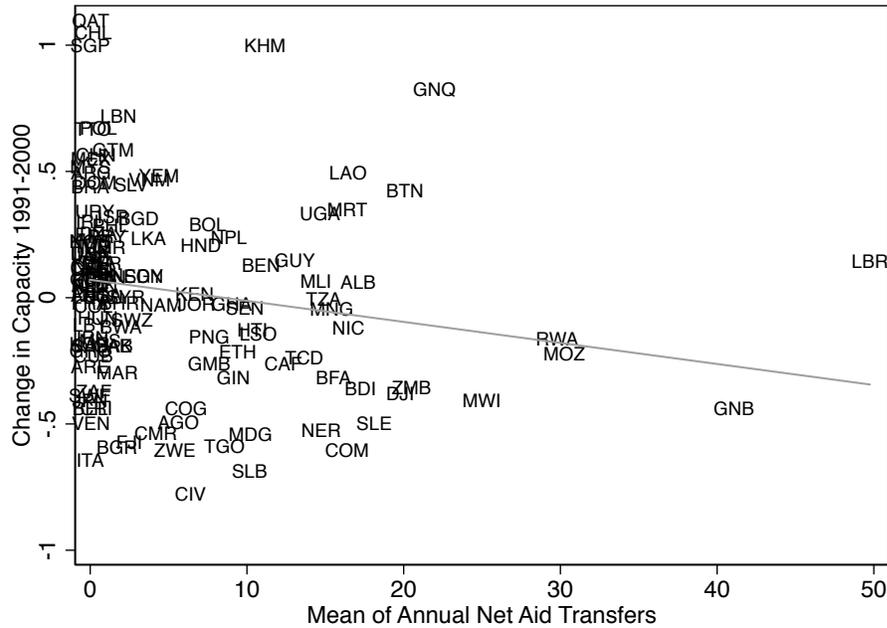
Ross and Mahdavi (2015) provide the underlying data for calculating the variable *FuelProduction*, which is the mean of the log value of oil and gas production per capita over the years in each time period. Since the data are measured on a per capita basis, the variable provides a relative comparison of the impact of oil and gas in the country's overall economy.

Data on the level of international assistance comes from Roodman (2005). The variable *Aid* is net aid transfers, including loan cancellation, measured as a percentage of GDP. Donor countries are coded as having a value of 0 on this variable. The larger the amount of assistance as a percentage of the economy, the more aid-dependent is the country.

Empirical Analysis

A brief look at some bivariate scatterplots will help illustrate some of the key relationships. Figure 3 plots the change in Capacity from 1991 to 2000 on EthnicFrac, showing a negative relationship. Conversely, we see a positive relationship when these data are plotted on the rescaled Polity index in Figure 4. Finally, in Figure 5, the plot shows a negative relationship

Figure 5: Change in Capacity and Net Aid Transfers



For the multivariate analysis, I use random effects Ordinary Least Squares with standard errors clustered at the country level, a method that is appropriate when the number of panels is large and the number of observations per panel is small. Since some of the key independent variables are time-invariant, fixed effects models are not available. I start with a base model in which the key independent variables are basic country characteristics. To this model, I then add sets of independent variables that are associated with the different theoretical perspectives discussed above. The final model is a comprehensive one that includes all of the independent variables. The general format of all models is:

$$\Delta Capacity = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_k Capacity_{t-1}$$

Since the dependent variable is the change in Capacity over each ten-year period, rather than the level of Capacity, we can interpret the constant term as being the predicted rate of change in Capacity in the scenario where all the independent variables are equal to 0. The predicted amount of change in Capacity shifts away from this “baseline” according to the levels

of the independent variables and their coefficients. Each model includes the level of Capacity at the end of the previous period in order to control for the fact that changes in Capacity can depend upon the current level.

Table 3, Model 1 shows the estimated coefficients for the base model. Four of the six variables were found to have a statistically significant effect on the change in state capacity. Of these, the measures of soil suitability, the proportion of the national border that is coastline, and road density all had the expected association with increases in Capacity, controlling for its level at the beginning of the period. For example, if the proportion of a country's soil suitable for agriculture were higher by one standard deviation (.2), the level of Capacity would be expected to grow more quickly by about .05 over ten years.

Table 3: Panel Data Analysis with 10-year Time Periods

	(1)	(2)	(3)	(4)	(5)
LandArea	-0.00 (0.01)	-0.01 (0.02)	-0.02 (0.02)	-0.02 (0.01)	-0.05** (0.02)
PopDensity	-0.05* (0.02)	-0.07** (0.02)	-0.07** (0.02)	-0.05** (0.02)	-0.08** (0.02)
SoilSuit	0.27* (0.12)	-0.00 (0.12)	0.30* (0.12)	0.11 (0.14)	-0.09 (0.14)
Rough	0.04 (0.17)	-0.08 (0.15)	-0.02 (0.19)	0.04 (0.16)	-0.24 (0.19)
Coastline	0.30** (0.09)	0.25** (0.08)	0.29** (0.09)	0.26** (0.09)	0.21** (0.08)
RoadDensity	0.07* (0.03)	0.07* (0.03)	0.07* (0.03)	0.06* (0.03)	0.05* (0.02)
EthnicFrac		-0.51** (0.10)			-0.44** (0.09)
Polity		0.01 (0.01)			0.02* (0.01)
Colonized		-0.19** (0.05)			-0.17** (0.05)
Conflicts			-0.03 (0.05)		0.07 (0.04)
Rivalries			0.06** (0.01)		0.06** (0.01)
FuelProduction				-0.00 (0.01)	0.00 (0.01)
Aid				-0.02** (0.00)	-0.02** (0.00)
Capacity _{t-1}	-0.19** (0.03)	-0.26** (0.03)	-0.20** (0.03)	-0.24** (0.03)	-0.33** (0.03)
Constant	0.03 (0.23)	0.71** (0.26)	0.32 (0.25)	0.43* (0.21)	1.32** (0.25)
N	550	545	546	507	498
Countries	149	147	148	138	135
R ²	0.08	0.16	0.11	0.15	0.27

Table 3 . Random-effects OLS model with panel-clustered standard errors. The dependent variable is $\Delta\text{Capacity}_t$: the change in Capacity from the previous period to the current period.

[^] $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Ocean access is also associated with growth in Capacity, all else being equal. Suppose that one were to compare two countries that are identical in all respects except that one country is landlocked and the other has coastline for one-half of its national borders. Capacity in the latter country is expected to be about .13 points higher after ten years have passed. The presence of greater road density is also linked with faster growth in Capacity. Holding all else constant, where RoadDensity is one standard deviation higher, Capacity is predicted to grow faster by about .07 over ten years. Both of these findings point to the value of transportation linkages, which can both facilitate commerce and the ability of the state to penetrate the territory.

Concerns about endogeneity may arise with respect to the coefficient on RoadDensity. Logically, states that are more capable will have built a denser road network, so it may be that RoadDensity proxies to some extent for a higher level of existing state capacity. While these concerns cannot be dismissed, the model does control for the level of Capacity at the beginning of each time period, which helps capture the effect of the past. Also, since the dependent variable is not the level of Capacity but its rate of change, potential endogeneity is lessened.

Contrary to expectations, population density is associated with a downward change in Capacity. According to the estimates, each 1% increase in population density is associated with a very small (.0005), but statistically significant, decrease in the level of Capacity. It is possible that this coefficient represents some reversion to the mean.⁵ Alternatively, the claim that a state can more easily expand its reach into the population in more densely populated countries not correct.⁶

⁵ Overall, there is positive correlation between the *level* of Capacity and the degree of population density, but once we control for that level the marginal effect on Capacity is negative.

⁶ Dropping the variable LandArea from the analysis does not change the substance of these findings.

Model 2 on Table 3 adds three variables that may affect the creation of a stronger sense of political community associated with the state. Two variables expected to have a negative effect on the construction of state capacity — EthnicFrac and Colonized — indeed have negative and statistically significant coefficients. By contrast, Polity is not found to have a statistically or substantively significant effect on changes in Capacity.

It is important to note that cases with high values on variables with negative coefficients are not necessarily predicted to have declining Capacity. The estimated constant of .71, which is significant at the .01 level, reflects the fact that Δ Capacity is positive at a baseline (i.e. Capacity is increasing). This rate of growth is adjusted upward or downward depending on the level of the independent variables. Thus, Capacity in these cases may just grow more slowly relative to other cases, or remain level, rather than actually decline from the previous period.⁷

This fact considered, we see that where EthnicFrac is one standard deviation (.27) higher, Δ Capacity is expected to be .14 lower, all else being equal.⁸ Countries that have been colonized during their history likewise see changes in the negative direction on Δ Capacity to the tune of about .19. In other analysis (not reported here), similar effects are found for linguistic diversity. In short, it is difficult for states to become more capable in polities that are more diverse and that have colonial legacies.

Model 3 represents a test of the bellicist perspective, adding the variables Conflicts and Rivalries. As argued above, rivalries are more enduring and are expected to drive faster growth of Capacity, whereas isolated conflicts are less likely to produce ongoing incentives to build state

⁷ Though an unfortunate combination of independent variables certainly can produce an expected decline in Capacity.

⁸ We cannot rule out the possibility that greater ethnic fractionalization, as we measure it today, proxies for a legacy of state development policies that is not conducive to present-day growth in state capacity.

capacity and can be harmful. The results are consistent with these expectations, and thus differ somewhat from those in Goenaga and von Hagen Jamar (this volume), who find that results are sensitive to specification. Here, each additional rivalry is associated with a ten-year rate of change in Capacity that is .06 points in the positive direction, while having more isolated conflicts apparently has little systematic effect on Capacity. Thus, even though the post-WW II era is one in which the international system has largely set country borders, we still see evidence that steady security concerns lead to construction of state capacity.

The effects of non-tax revenues on state capacity are tested in Model 4. This model finds that there is no statistical relationship between the change in Capacity and the per capita value of oil and gas production in a country during the time period. International assistance during the period, however, is associated with slower growth (or potentially a decline) of Capacity.

Imagine two countries that are identical in all respects except that the first country receives no net foreign assistance, while level of foreign assistance to the second country equals ten percent of GDP. Capacity is expected to be about .2 points lower in the second country after ten years.

When it comes to foreign assistance, the direction of the causal arrow is not entirely clear. Logically, foreign assistance levels would rise in response to a significant crisis that the recipient state cannot manage. Rather than cause a decline of state capacity, in other words, the aid may be a response to state weakness or failure at some level. A scenario of this kind could produce a statistical association identical to what is observed in the data.

Finally, in Model 5 of Table 3, we see the comprehensive model. With a few exceptions, the findings do not change significantly. First, the coefficient LandArea is now more strongly negative and significant at the .01 level. Once we control for more factors, we find that state capacity grows more slowly in larger territories, which is consistent with the prediction in Herbst

(2014). Second, the coefficient on SoilSuit is no longer significant, but this coefficient is quite sensitive to changes in the sample.⁹ Third, the coefficient on Polity is significant at the .05 level in the positive direction. A one-standard deviation increase in Polity is associated with a prediction of .07 points faster growth in Capacity.

Overall, the evidence is consistent with the idea that there is a range of factors that affect the incentives for building state capacity and the ease with which capacity can be increased. Focusing on either internal or external factors would not produce findings that are incorrect, but they would be incomplete. While it appears to be the case that ongoing external threats induce the building of capacity, for example, the challenges of building a political community appear to be quite important as well.

Summing Up and Looking Ahead

The analysis presented in this chapter demonstrates the value of thinking about state formation and the construction of state capacity in a more holistic way. The literature on this topic, though rich and vibrant, tends to focus on particular pieces of the puzzle: the role of conflict in the international system, the need for revenue, and domestic factors that affect the relationship between citizens and the state. Since they are not mutually exclusive, there is value in bringing them together into a single framework.

Empirically, the analysis treats equally the variety of factors that may affect state-building efforts, using large-sample methods to determine which factors appear to matter the most while controlling for the others. The estimates suggest that, at least in the post-WW II era, internal factors such as the levels of social diversity and democracy are the factors most

⁹ The change in statistical significance is not driven by the decline in sample size between Model 1 and Model 5. This was confirmed by running Model 1 on the sample from Model 5. By contrast, the non-significant coefficient on SoilSuit in Model 5 can be generated simply by using that same sample with the specification from Model 1.

consistently found to be associated with changes in state capacity. External threats also appear to play a role. Preliminarily, we can conclude that isolated military conflicts do not appear to affect state capacity in the short-run, but rivalries appear to be more significant, contributing to growth of state capacity.

Overall, the findings provide the rationale for developing a more comprehensive theory of state formation that integrates key elements from the existing literature. As a starting point for this theory, a viable option is Levi's (1988) treatment of rulers as rational actors that seek to maintain their power and maximize their revenues. These potential state-builders face threats of many kinds, some from rivals, some from society, and some from external sources. They also face constraints that are created by institutions, geography, the nature of society, and so forth. In response, rulers produce policies that lead to changes in state capacity over time. They may seek to build the state's military capabilities, extend the administrative infrastructure to deliver new kinds of public services, or build new revenue-collection mechanisms.

By integrating various theoretical approaches into a common framework, this work likewise supports the mission of this volume to de-center scholarship on state-making. It takes seriously the goal of bridging gaps between these different theories and remaining neutral between them. Furthermore, it breaks from geographically-centered perspectives by testing whether the potentially-causal factors identified by these approaches travel into a cross-national context. Although the work presented in this chapter is only a first step, it illustrates the potential value of the de-centered approach.

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