Order, Distance, and Local Development over the Long-Run[1]

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Abstract

We argue that local, long-term exposure to a centralized political authority determines sub-national patterns of contemporary economic development. Older research on economic development has focused on cross-national income accounts, often ignoring the large sub-national variation in income differences. Likewise, research on the effects of political institutions on development has mostly neglected sub-national variation in the institutional environment. Yet a growing body of work shows that the geographic reach of states within countries and their ability to foster economic exchange have varied dramatically through history. We contribute to recent research on sub-national development by creating a new measure of local historical exposure to state institutions that codes geographic distance to historical capital cities and use highly spatially disaggregated data on economic development, based on satellite data, to test their relationship. We find clear evidence, using fixed effects estimations for a European and global dataset, that local historical proximity to capital cities is associated with higher levels of economic development. This finding is further substantiated through a number of robustness checks covering alternative measures, specifications, and sensitivity analyses.

What are the long-run causes of economic development? Studies on the effects of institutions (Acemoglu, Johnson and Robinson 2001, 2002; Bockstette, Chanda and Putterman 2002), geography (Sachs and Warner 1997, 2001; Hibbs and Olsson 2004; Easterly and Levine 2003; Engerman and Sokoloff 2002) and genetic distance (Spolaore and Wacziarg 2009) have reinvigorated an old debate on the deep roots of economic development. Yet the lion's share of this research has focused on economic development as a national phenomenon. While cross-country income differences are certainly large, they mask important sub-national variation in development. Indeed, income gaps among localities and regions within countries contribute substantially to global income inequality (Krugman 1991; Milanovic 2005; World Bank 2009). In this paper, we build upon the recent trend towards trying to understand the deep historical origins of distinctly local economic development and institutions (Acemoglu, García-Jimeno and Robinson 2015; Dell 2010; Banerjee and Iyer 2005; Bruhn and Gallego 2012; Gennaioli et al. 2013; Michalopoulos and Papaioannou 2013). We do so by theorizing the link between historical, local exposure to state institutions and local development. We test the relationship using highly spatially disaggregated measures, including an original indicator of local exposure to capital cities and a measure of local development based on nightlight intensity.

We begin with the observations that development is highly uneven within countries and that standard accounts of, and empirical approaches to, development provide limited insight into that variation. Decades of research by economic geographers shows that production is very spatially concentrated within countries (Gennaioli et al. 2013), and spatial inequality, which is rising in the world's fastest growing economies, plays a huge role in the history of development (World Bank 2008). Likewise, a growing body of work acknowledges that institutions, the quality of governance, and other correlates of economic development vary hugely within countries (Engerman and Sokoloff 2008; Herbst 2000; Boone 2003; Gervasoni 2010; Charron, Dykstra and Lapuente 2014). The most prominent recent approach to the relationship between institutions brackets this variation by focusing on the economic benefits of inclusive *national* institutions that provide property rights, the rule of law, basic public services and economic competition for broad segments of society (Acemoglu and Robinson 2012; North, Wallis and Weingast 2009). This and earlier approaches—extending to important alternative accounts that emphasize geography, ecology and human capital—share a focus on national economic development as proxied by national income accounts.

No matter the power of research aimed at explaining cross-country income differences, it provides little insight into the huge sub-national variation in development within countries. Taking Huntington's (1968: 1) insight that "the most important political distinction among countries concerns not their form of government but their degree of government" to the subnational level, we argue that long-run, local exposure to state institutions affects sub-national economic development. We posit that local exposure to state institutions impacts development via physical infrastructure (Stanish 2001), social structure (Dell 2004; Banerjee and Iyer 2005; Engerman and Sokoloff 2002) and social practices (Tabellini 2010; Guiso et al. 2008; Greif and Tabellini 2015; Putnam 1993) that foster economic exchange and long-distance trade. Economic activity also clusters around administrative centers due to rent-seeking and state expenditures (Ades and Glaeser 1995). These mechanisms transmit the impact of state institutions through history even as the strength of state institutions themselves wax and wane. Once economic clusters around administrative centers have been established, agglomeration economies generate strong path-dependencies that explain the persistence of institutional effects over centuries. In elaborating the argument, we link the varying power of states to project authority from capital cities across their territory (Herbst 2000; Boone 2003; Weber 1976; Hechter 2000) and the decay in governance quality across distance from capitals (Campante and Do 2014) with recent work suggesting that state capacity (Dincecco and Prado 2012; Besley and Persson 2011) and a history of statehood (Bockstette, Chanda and Putterman 2002) improve economic development.

To test the argument, we use highly spatially disaggregated information on economic activity for the whole globe. Our units of analysis are 0.5 x 0.5 decimal degree grid cells with local measurements of nightlights to proxy for modern day development. We combine these data with a new sub-national measure of exposure to state presence at the grid cell level. Echoing work by Campante and Do (2014) showing that distant capital cites reduce governance quality, we argue that historical exposure to the state is captured reasonably well by physical distance to administrative centers of power, i.e. capital cities. First, we construct our measure based on a geocoding of all major political capitals of all state-like entities for the 1-1900 CE time period in Europe, Northern Africa, and parts of the Middle East. We draw on detailed historical maps on the territorial extent of states that are available for these regions (Nüssli 2011) to assign grid cells in our dataset to historical states. We then identify the location of the corresponding capital or administrative center and measure the distance between those capitals and each grid cell that they govern in each 100-year time period to calculate a time-discounted average. Additionally, we replicate this measure of state exposure for the global set of grid cells, relying on the prior efforts of Bockstette, Chanda and Putterman (2002). Using their data on the history of state institutions within the boundaries of all modern countries in the world, we add information on the location of capital cities for each time period covered by the state antiquity data.[2]

Across both datasets our empirical analysis uncovers a statistically and substantively meaningful effect of local exposure to state institutions on long-run development within countries. We identify the effect of local exposure to historical capital cities by controlling for important confounding variables at the grid cell level and relying purely on *within-country* variation of exposure to state institutions, accounting for observable and unobservable factors that could drive both economic and state development. We implement a series of additional tests to distinguish the importance of exposure to centralized political authority from path-dependent agglomeration economies around population centers.

Although our primary contribution is empirical, this paper adds to the ongoing debate about the role of institutions in long-run development. We argue and show that basic state

[2] Our measure of local exposure to historical capital cities in the global data is subject to measurement bias, due to changing country shapes and the fact that the state antiquity data do not account for the presence of smaller political entities that co-existed with pre-cursers to modern states. Nonetheless, our measure for the global data correlates well with our more precise measure from our reduced, more precise European sample.

capacity, geographic penetration of the state, and long-run exposure to centralized authority are fundamental drivers of contemporary differences in income within countries. Consistent with recent work by Besley and Persson (2011), Dincecco and Prado (2012) and Dincecco and Katz (2016), this claim is broadly in line with, but causally prior to, arguments about the quality of institutions. Whether institutions are good, bad, inclusive or exclusive presupposes that the state does, in fact, govern. More originally, we argue that the quality and extent of this governance varies across territory within countries, and this asymmetric exposure to the state has important implications for long-run development at the sub-national level. To the best of our knowledge, our empirical test is the first global cross-country, cross-regional analysis of the deep roots of distinctly *local* development.

The Geography of Governance, State Exposure, and Development

What drives economic development? Institutionalists argue that the deep roots of development lie in the institutional environment in which economic agents operate (Acemoglu and Robinson 2012; North 1990; North and Weingast 1989; Engerman and Sokoloff 2002; North, Wallis and Weingast 2009). Inclusive economic institutions -- i.e. secure property rights for large parts of the population, rule of law, basic public services and competition -- create an environment conducive for technological innovation, creative destruction and long-term growth. Inclusive economic institutions are brought about and reinforced by inclusive political institutions -- pluralism paired with political centralization. Related claims on the importance of good institutions appear across a huge range of theoretical and empirical work on economic development.

Yet a growing body of work suggests that political order is an important precursor to good or bad institutions and that state capacity is a prerequisite for rapid growth. Besley and Persson (2011) and Dincecco and Prado (2012), for instance, emphasize the importance of the state's taxing capacity for the consolidation of order and the production of public goods, and Dincecco (2012) provides evidence that state centralization precedes the emergence of inclusive institutions. Relatedly, Bockstette, Chanda and Putterman (2002), analyze the effect of state antiquity on long-run economic development. They chart the emergence and expansion of state-like institutions beginning in early Mesopotamia, as well as their regular collapse. A long history of statehood, Bockstette et. al. argue, creates valuable experience with the operation of political and administrative institutions and allows the transfer of technologies that enable rulers to overcome principal-agent problems, create more effective tax structures, codify laws and regulations and improve skills of warfare. Although these arguments have important institutional elements, their central claims are causally prior to standard institutional theories that focus on the difference between inclusive and extractive institutions. In the language of Huntington (1968), standard institutional arguments emphasize the "form" of government, while those focused on state capacity and exposure emphasize the "degree" of government. These two views are not necessarily contradictory, although long-term experience with statehood provides a necessary ingredient to the emergence of institutions, whether they be "inclusive" or "exclusive".[3] Absent governance, neither type of institution can develop.

Though the rule of the state is territorially defined, most research on the state has taken the territory of countries and "stateness" as coterminous. The literature on institutions in particular has either explicitly focused on national-level institutions, or implicitly assumed institutions affect economic outcomes uniformly across the state's territory. We depart from this logic on a theoretical and empirical level. Empirically, it is clear that there is huge within-country variation in both incomes and the extent to which states project authority. Theoretically, we contend that *local* economic development is a function of *local* historical exposure to statehood. In doing so, we integrate the work on state capacity with the growing recognition that state power, i.e. the capacity of the central authority to project authority, is heterogeneous across territory and that this heterogeneity has important implications for development *within* countries.

Standard approaches to development ignore the huge within-country variation in economic output and income. Milanovic (2005) notes that within-country inequality

[3] Acemoglu and Robinson (2012) explicitly argue that strong, centralized, but generally extractive regimes can generate impressive, rates of growth for certain, transitory periods of time, albeit through the mobilization of capital and workforce, not innovation.

represents somewhere between one-quarter and one-third of global inequality, and that its contribution to global inequality grows the farther back in history one goes. Within-country inequality has a strong spatial component (World Bank 2009). Even in the United States, which is oftentimes held up as the model of an integrated market with extensive factor mobility, differences in local incomes are large. The Bureau of Economic Analysis estimates that the richest metro area in the U.S. is more than eight times richer than its poorest, and even this understates differences since the data excludes the poorest rural areas.[4] These differences are themselves swamped by spatial variation in many poorer countries. The World Bank summarizes the findings from more than 100 living standards surveys by noting that, "disparities in incomes and living standards are the outcome of a striking attribute of economic development—its unevenness across space….Location remains important at all stages of development, but it matters less for living standards in a rich country than in a poor one."[5] Our approach takes this sub-national variation in developmental outcomes seriously.

Our argument builds upon Bockstette, Chanda and Putterman (2002) who claim that long-term exposure to state institutions improves the prospects for national development, and on related work on the role of state capacity in promoting development (Besley and Persson 2011; Dincecco and Prado 2012; Dincecco and Katz 2016). Public administration, bureaucratic capacity, taxation and legal enforcement are all precursors to the basic public goods that underpin widespread industrialization—currencies, market regulation, taxation, public education, private enterprise, and extended markets. The institutions of the state provide a unit of exchange and formal mechanisms for the development and enforcement of contracts. By standardizing expectations, the state reduces uncertainty around exchange and facilitates innovation.

[4] Mississippi's GDP per capita in 2011 was $28,293. Delaware's was $63,159. The richest metro area is Midland, Texas ($95,531); the poorest is Palm Coast, Florida ($11,311). Data accessed from the BEA's Regional Economic Accounts (http://www.bea.gov/regional/) on 2/27/13.

[5] 2009: p.2. The report goes on to state that "…the most prosperous areas of developing countries—such as Brazil, Bulgaria, Ghana, Indonesia, Morocco, and Sri Lanka—have an average consumption almost 75 percent higher than that of similar households in the lagging areas of these countries."

But how are the effects of state exposure transmitted through history? While Dincecco and Prado (2012) emphasize the birth and persistence of modern systems of taxation, our distant historical orientation suggests the impact of states via three mechanisms: physical infrastructure and urbanization, social structure, and social practices. The most visible impact of states is that they construct transportation infrastructure, communication networks, and buildings. This infrastructure can last generations, and anthropologists use evidence of exactly this kind when researching the origins and persistence of states. This basic infrastructure serves to expand the geographic scope of exchange (i.e. long distance trade), facilitates economic specialization and fosters urbanization. Urban centers serve as centers of innovation (Glaeser 2012). Urban centers themselves generate powerful agglomeration economies via reduced transportation costs, labor market pooling, and sharing of ideas and innovations (Krugman 1991; Davis and Weinstein 2002; Glaeser and Gottlieb 2009). Once present, these effects can generate powerful path-dependencies and explain the persistence of economic development around historical capital cities. The anthropological evidence, moreover, indicates that state-provided infrastructure precedes urban centers rather than vice-versa (Stanish 2001).

Second, state institutions facilitate the construction of complex and extended social structures that foster economic differentiation and specialization. A typical pre-state social structure is organized around the family, village and clan. These referents provide the locus of cooperative behavior (Greif and Tabellini 2015). Since the operation of markets inevitably rests upon some level of impersonal cooperation and trust (Arrow 1971), these also, however, make it difficult to extend cooperative behavior beyond the family, village or clan. By overthrowing local social structures, states foster a common social basis for exchange. Clearly, state-imposed social structures can be more or less inclusive, but whatever their specific form, they serve to weaken family- and village-based obstacles to exchange.

Third and finally, state institutions foster what we term "social practices" that facilitate exchange. Alternatively known as culture (Tabellini 2008), trust (Guiso et al. 2008), social order (Arrow 1973), or social capital (Putnam 1993), these practices impact the prospects for impersonal exchange and authority that are part and parcel of the broadening of economic exchange beyond any given locality. The basic insight of this literature is that markets suffer from information asymmetries and ambiguities in property rights. In the presence of these imperfections, shared norms about appropriate behavior provide a social context in which markets can be more or less efficient. In Guiso et al. (2008), the specific mechanism is trust, which they model as the intergenerational transmission of priors about the trustworthiness of other market participants. They also argue that once institutions establish an equilibrium of generalized trust, it can persist for generations after the originating institutions are gone. In all of these accounts, ancient institutions play a key role by coordinating social expectations around a set of market-promoting or market-inhibiting behaviors. By coordinating expectations regarding law and contract enforcement as well as cooperation, states provide the belief systems that underpin exchange. It need not be that these social practices are particularly democratic or normatively appealing, only that the broadening of the set of economic actors who share a common set of beliefs promotes exchange.[6]

We build upon these related bodies of work, but emphasize that historical experiences with state institutions vary considerably *within* modern countries. Standard accounts of "the state"—whether Bockstette, Chanda and Putterman's (2001) concept of state antiquity or Besley and Persson's notion of state capacity—suggest that the state's capacity to regulate economic and political activity is common across the country's territory. Yet, the process of state creation over hundreds and thousands of years is rife with incomplete internal conquest and heterogeneous local experiences with the state. This dynamic is evident in many contemporary countries, ranging from obvious cases like Afghanistan and Somalia, where the central state has almost no capacity to project authority across territory, to less obvious ones like Brazil and Mexico, where the state is unable to provide governance over select portions of its territory in the face of powerful criminal elements. In such countries, the state provides a highly varied set of public

[6] It might very well be the case that some state institutions foster cultural practices that hinder economic growth or that culture is a substitute, not a complement, to state institutions (Alesina and Giuliano 2015). Adjudicating this specific point goes beyond this paper, but we believe that standardization and regularization practices commonly implemented by states, on average, facilitate long-distance trade and other forms of economic exchange.

goods across geography. Yet even the most capable of today's states had to address the difficulty of extending authority over territory at some point in their histories. In France, the quintessential centralized state, turning "peasants into Frenchmen" was the product of a process that took centuries, and as late as mid-19th century, outside of Paris "laws…were widely ignored and direct contact with the central power was extremely limited. The state was perceived as a dangerous nuisance…."[7] Campante and Do (2014) show that the effect of remote U.S. state capitals persists today, as distance constrains the capacity of citizens to induce accountable governance. As such, the local institutional environments governing economic exchange are heterogeneous, and localities have highly varied historical experiences with the fundamentals of governance--experiences that are glossed over by any attempt to conceptualize and measure the link between institutions and development at the national level.

The role of geography in state capacity is prevalent across several areas of research. Tilly's argument (1990) about the emergence of the modern nation-state and its unprecedented capabilities is explicitly rooted in territorial conquest, a point echoed by Dincecco and Prado (2011), who emphasize the role of military conflict for state capacity. Herbst's (2000) theory of state weakness in Africa, Boone's (2003) work on heterogeneous efforts by African elites to project state power into the periphery, and Ziblatt's (2006) account of the geographic origins of the modern German and Italian states all emphasize the heterogeneity of the state's reach. Relatedly, recent work on civil conflict indicates that the state's supposed monopoly on violence is highly uneven across the geography of many states (Buhaug and Rød 2005; Campante, Do, and Guimaraes 2016; Cederman and Girardin 2007). And violence and internal conquest aside, Krishna and Schober (2014) rely on citizen surveys and a typical, multidimensional conceptualization of governance to show that its quality is declining in distance from urban centers in India. Thus, statehood has an inherently spatial dimension, and the authority of centralized government varies across a state's territory.

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[7] Robb (2008: 23). The term "peasants into Frenchmen" is courtesy of Weber (1976).

This contemporary evidence on the spatial unevenness of the state is echoed in the handful of existing studies linking sub-national variation in institutional history to economic development. Michalopoulos and Papaioannou (2013) use sub-national data on the extent of pre-colonial ethnic institutions in Africa to show that the existence of historical forms of centralized governance is positively related to contemporary government performance and development. Iyer (2010) provides corroborating evidence from India, showing that regions that had elaborate pre-colonial political institutions provide higher levels of public goods than those without institutionalized pre-colonial governance, and Dell (2010) confirms the long-term developmental effect of local variation in colonial institutions in Peru. Similarly, within country-variation in historical institutions play an important role in diverse developmental outcomes across the U.S. states (Engerman and Sokoloff 2002). Across Europe (Stasavage 2012) and within Italy (Guiso et al. 2008), autonomous cities had different growth trajectories than non-autonomous cities, which result from either distinct oligarchic institutions or associational practices.

These works show that subnational variation in institutional experience has a persistent effect. Different local histories – indirect or direct rule, inclusive or exclusive institutions, slavery or no -- lead to different developmental outcomes, even though these different localities have been grouped under the same national institutional structure in the decades or centuries hence. Our argument shares the focus on sub-national variation in development and institutions, but specifically emphasizes the role of state presence in development: how the history of state presence, as distinct from institutional quality, form, or type, can explain present-day subnational variation in economic performance.

We hypothesize that local, historical exposure to centralized political authority increases local levels of economic development through two mechanisms: First, by allowing economic agents to take advantage of geographically specific access to generalized forms of (long-distance) exchange, underpinned by physical state infrastructure, social structure and practices as discussed above. Second, the local presence of the state encourages a form of political agglomeration economies, where economic agents locate their activities close to the capital to engage in rent-seeking, trying to exploit regulations and hoping to gain access to public expenditures (Ades and Glaeser 1995).[8] Economic activity by the state itself, e.g., state-owned companies and the employment of civil servants, is also likely to cluster around capital cities. For both of these reasons, territories more exposed to centralized authority are more likely to benefit from an increased division of labor, trade and market access, political benefits and higher levels of economic development.

Our argument about the historical exposure to centralized political authority is related but causally distinct from standard theories of agglomeration economies. Natural geography and sheer luck can create urban agglomerations that generate higher levels of income in a highly path-dependent process that even extreme external shocks cannot break (Krugman 1991; Davis and Weinstein 2002; Glaeser and Gottlieb 2009). While sub-national variation in economic development is highly correlated with the location of major urban centers and capital cities are almost always located in major urban centers, we argue that political capitals exert an important independent effect. One of the challenges in the subsequent empirical analysis is teasing out the direction of causality between standard urban agglomeration effects that might attract the creation of capital cities, and the role of administrative centers in generating such effects in the first place.

Research Design, Data and Model Specification

The most significant challenge to testing our claim that local exposure to state institutions affects long-term development is to develop geographically nuanced indicators of development and stateness. Many studies rely on country-level measures and samples to adjudicate the competing effects of institutions, human capital or geography. Of most direct relevance to our own argument, Bockstette, Chanda and Putterman (2002) show that their country-level measure of state antiquity correlates positively with modern levels of GDP per capita, growth rates, social development, bureaucratic quality, the rule of law,

[8] This effect might be particularly pronounced for isolated capital cities (Campante and Do 2014). In the long-run, political agglomeration effects around the capital might stifle innovation in block economic growth, e.g., when political oligarchs limit competition (Stasavage 2014). We believe this is a distinct possibility, but is likely to offer explanatory power when trying to distinguish levels of development across capital city regions – less so when comparing peripheral regions to central regions.

and reduced ethno-linguistic fragmentation. More recent studies that rely on sub-national data have drawn on regional experiences in Latin America (Bruhn and Gallego 2012), Africa (Englebert 2000, Michalopoulos and Papaioannou 2013), or country-specific data from Peru (Dell 2010) or India (Iyer 2010).

Our approach adds to this growing body of work by relying on a truly global sample of highly disaggregated data, using a uniform and comparable measure of local economic development and constructing a measure for local exposure to centralized political authority. Our unit of analysis is the spatial grid cell of 0.5 x 0.5 decimal degree size (roughly 55km by 55km at the equator). The grid cells are provided through the PRIO-GRID project (Tollefsen et al. 2012). The PRIO-GRID spans the whole globe.

To measure modern levels of economic development, we rely on nightlights data. The Defense Meteorological Satellite Program's Operational Linescan System collects high-resolution pictures of nighttime lights. Luminosity measures are converted into a 0-63 intensity score for all 30-second areas on the globe, which corresponds roughly to one square kilometer cells. To create an annual composite image of stable nightlights, all available usable images are overlaid and processed to remove ephemeral light sources.[9]

Validation exercises have shown that luminosity data has considerable advantages for regions with the lowest levels of economic development and regions subject to political turmoil where the implementation of reliable surveys is difficult (Chen and Nordhaus 2011). We are not the first to recognize the value of nightlights as a useful measure in a comparative setting. Min (2010) uses the same data to understand distributive politics. Closest to our approach is a recent paper by Michalopoulos and Papaioannou (2013), which examines nightlight distributions on the African continent. We use annual composite images of nightlights for the years 2000-2005 and calculate the average luminosity score for each grid cell in the PRIO-GRID. For our empirical models we take the natural log of the nightlights score to attenuate the non-normality of the measure.

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[9] Images with strong cloud cover or solar glare are dropped.

To measure the history of exposure to centralized political authority, we use information on the physical distance between grid cells and historical capital cities for different time periods between 0-1900. Especially before the advent of modern transportation and communication technology, physical distance was a major constraint on the projection of state power over claimed territory. Regions physically proximate to administrative centers of power were much more likely to be affected by the effects of state institutions than regions in the periphery. This idea echoes considerable research that emphasizes the challenge that physical distance represents for the projection of state authority. As Herbst explains, "…if a state is making an incremental step beyond its central base that can be achieved using existing capabilities, costs will be lower than if authority is being projected to an area far beyond the base, as this requires mobilization of an entirely new set of resources."[10] Reflecting on a related point from the point of view of citizens, Campante and Do (2014) show that citizens distant from U.S. state capitals are less informed about politics, vote at lower incidence and are less able to hold government accountable. This fundamental insight of research on the state—that power diminishes in distance—is echoed in work on everything from French history (Weber 1988) to the European state system (Tilly 1990) to sub-Saharan Africa (Boone 2003). Indeed, capital cities play an important role for politics (Ades and Glaeser 1995), while peripheral regions often operate unperturbed by changes in the political center.

To construct our measure, we need information on the extent of states' territory and the location of their administrative and political center across time. For Europe, the Middle East, and Northern Africa we rely on set of detailed historical maps that trace the extent of states in 100-year time intervals from 0 to 1900 provided by Euratlas (Nüssli 2011). The Euratlas maps allow us to assign each grid cell to specific historical state entities. We complement the information provided by Nüssli (2011) and code for each individual state entity in their data the location of the corresponding capital city.[11] This yields a reduced sample of up to 7300 grid cells in the wider European region for which we have detailed measures of economic development and local exposure to historical capital cities.

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[10] Herbst (2000: p.23).

[11] We detail our specific coding rules in the Supplementary Codebook.

For our global set of grid cells we have to tolerate some amount of measurement bias, since no systematic and reliable maps on the extent of states outside of Europe are available. Instead we build on prior efforts by Bockstette, Chanda and Putterman (2002). They construct an index of state antiquity at the country level, working backwards from modern country shapes. They code for each modern country whether in its history a government above the tribal level existed in parts (or all) of the modern territory, whether such government was local or foreign, and how much of the territory of the modern country it covered for 39 half centuries from 1 to 1950 CE. For each of the 39 half centuries per country in which Bockstette et al. determine the existence of state-like entities, we use their supplementary coding information and additional sources to determine the location of corresponding historical capital cities (see Supplementary Codebook for additional details). In the case of colonial governments, we do not assign the location of the imperial capital, but the location of local vice-royal city through which colonial powers governed. This approach is not perfect, for example, because certain locations in the periphery of a current nation-state might have been part of a different political entity in the past, with a closer capital. Conversely, some locations close to a current (and past) capital city might have been part of the periphery of a neighboring political entity for long stretches of time. Despite this problem we believe this approach is a reasonable approximation to local exposure to state institutions within our global sample.[12] Importantly, in our reduced Euratlas sample, in which we have much more accurate information on historical state entities, the two measures correlate at 0.6.

For both samples we determine the latitude and longitude coordinates of each capital city and calculate the distance to each grid cell's centroid in our dataset.[13] We construct our final measure of local exposure to historical capital cities by taking the inverse of a grid cell's distance to the corresponding capital city in each time period and calculate a weighted average across 20 100-year intervals for the reduced Euratlas sample or 39 half centuries for the global data. The weights are discount factors, similar to the construction

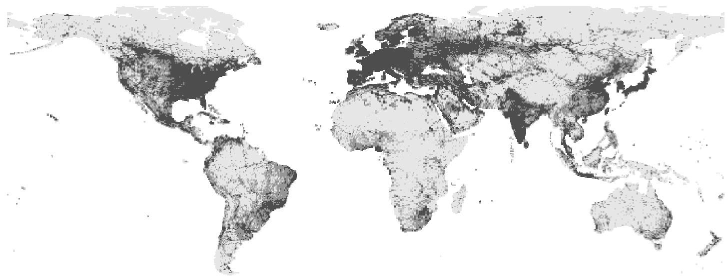
[12] We expect that our measure does not systematically over- or underestimate local state exposure and thus is subject to non-systematic measurement error and consequent attenuation bias.
[13] Note that in our current version of the global data we only identify the major political capital. For cases with multiple, competing centers of political authority we applied a series of coding rules to arrive at a single location (see Supplementary Codebook).

of the state antiquity score by Bockstette, Chanda and Putterman (2002). The discount factor accounts not only for weaker effects of past distance to capital cities, but also for the diminished influence of physical distance over time. As modern transportation and communication technologies progress through the centuries, physical distance becomes less of an obstacle to the projection of state power. This procedure yields our measure of local historical capital city exposure (LHCE):

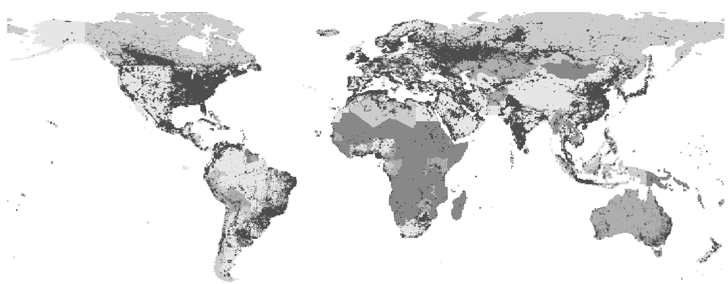
$$LHCE_{ij} = \sum_t^T \frac{1}{dist_{ijt}} \delta^t$$

Where local exposure to historical capital cities (LHCE) in grid cell i in country j is the sum of the per-period t inverse grid cell distance $dist_{ijt}$ to the current period local capital city, discounted by the factor δ. The default discount rate is 5%, but in our robustness checks we let the discount rate vary between zero and 50%.

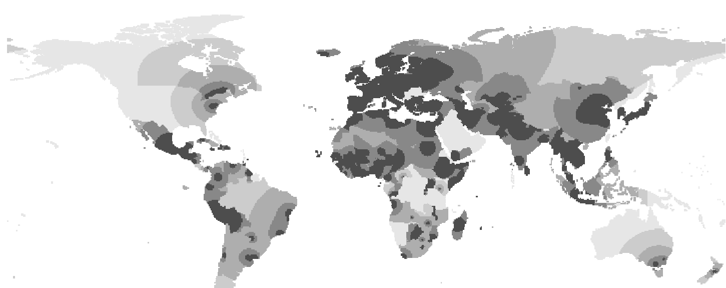
Figure 1 shows the distribution of our outcome measure, logged nightlights, the residual variation in logged nightlight after accounting for country fixed effects, and our indicator of exposure to historical capital cities for the global sample. The LHCE measure, as constructed here, shows interesting spatial variation across the globe that goes beyond the clustering of ``good'' institutions in the developed world (Note that the map emphasizes between-country differences over within-country variation due to the binning in quantiles).



(a) log(Lights)



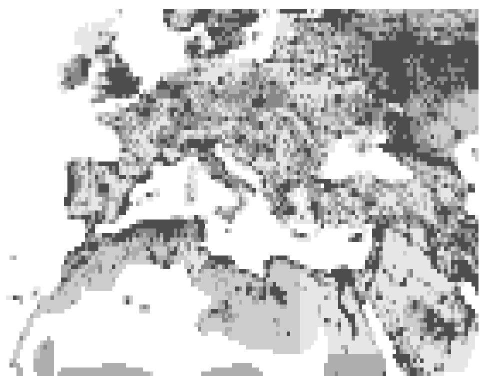
(b) Residual



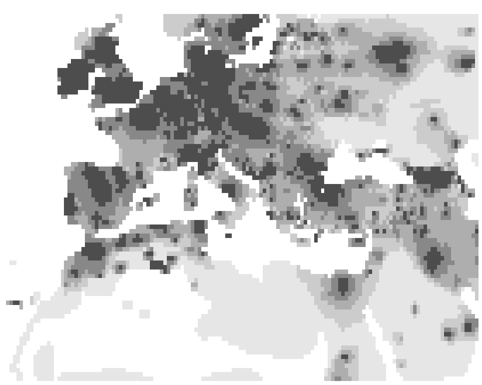
(c) LHCE

Figure 1: Geographic distribution of logged nightlights, the residual variation in logged nightlights after accounting for country fixed effects, and our LHCE indicator. Darker shades indicate higher quantiles.

To further illustrate our measures, consider Figure 2, which displays sub-national variation in residual night light variation and LHCE for our Euratlas sample.



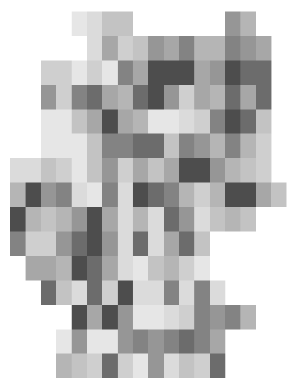
(a) Residuals



(b) LHCE

Figure 2: Residual nightlights and LHCE in the Euratlas sample. Darker shades indicate higher quantiles.

For a better visualization of our LHCE measure, Figure 3 shows the sub-national variation in capital city exposure for Germany and France. Panel (b) nicely illustrates how French history has been dominated by political centralization around Paris, whereas in the German case a multitude of localities featured capital cities and where thus exposed to state institutions.



(a) Germany

(b) France

Figure 3: LHCE for Germany and France

To estimate the effect of LHCE on modern, sub-national development for our two samples, we estimate a series of OLS regression models of the following type:

$$y_{ij} = \alpha_j + \boldsymbol{x}_{ij}^{\prime}\beta + LHCE_{ij}\delta + \varepsilon_{ij}$$

Our measure of logged nighlight intensity y_{ij} in grid cell i and country j is a function of country-level fixed effects α_j, a series of grid-level covariates $\boldsymbol{x}_{ij}^{\prime}$, and our measure of local exposure to historical capital cities $LHCE_{ij}$. The error term ε_{ij} is assumed to be identically and independently distributed. Importantly, the inclusion of the country-level fixed effects controls for observable and unobservable country characteristics, like general levels of human capital, national-level political institutions, trade, diffusion rates of technology and others. It also accounts for geographic and biogeographic factors that are constant across the territory of the state. Hence, our estimates for the effect of local historical state exposure are identified purely from within-country variation, holding national-level factors constant. While the use of country fixed effects allows us to control for many unobserved factors, one might expect that other sub-national unobserved factors are biasing our findings. To explore this concern, we estimate additional models that include fixed effects for smaller geographic regions. Specifically, we create East-West slices of the original grid of 10-30 grid cells within the same country, East-West slices that ignore current country borders, and clusters of neighboring grid cells, expanding in all four cardinal directions, also ignoring current country shapes. We cluster standard errors at the country level to account for heteroskedasticity and arbitrary serial correlation. This approach implies that our estimates will not speak directly to important changes in the world income distribution at the country level, e.g. the rise of China, but rather inform us on which specific sub-national regions are most likely to experience economic development as a function to exposure to state institutions.

At the level of the grid cell we include additional covariates to mitigate effects of any remaining confounding factors. It is particularly important to control for the availability of local economic rents and initial levels of prosperity that might induce reverse causality bias in our estimates. If certain locations offer favorable economic environments, people will migrate to these locations and eventually create successful political units, creating a correlation between the location of capital cities and economic success. To address this problem, we include several variables that measure the economic viability of grid cells. We include the absolute latitude (provided by PRIO-GRID), average yearly total precipitation levels over the 1946-2008 period based on meteorological data from the University of Delaware (NOAA) and its square,[14] as well as a measure of general soil suitability for agriculture from the *Harmonized World Soil Database* (Batjes et al. 2008) to measure local conditions for agriculture. Furthermore, we include mean temperatures in degrees Celsius over the 1946 to 2008 time period (again provided in the PRIO-GRID based on NOAA). A measure of terrain ruggedness is based on data from the UN Environment Programme, recording the percentage of mountainous terrain in each grid cell. We also include a biogeographic measure of conditions for malaria, to capture the local disease environment (Kiszweski et al. 2004). To account for long-distance trade and ease of transportation, we include a measure of access to water.[15] Throughout our models we control for local logged population counts and distance to the current capital,[16] all provided through the PRIO-GRID data structure to separate the effects of historical capital city exposure from current capital city effects.[17] We include a binary variable measuring the presence of oil or gas deposits in order to control for the development effects of natural resources and the presence of gas flares in the night lights data.[18] To account for the effects of political violence we calculate proportion of years from 1989-2000 in which a grid cell was part of a conflict zone according to Dittrich Hallberg (2012).

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[14] Measured in 1000s of ml.

[15] We use GIS data on large and small rivers, as well as information from the Landcover database to identify water bodies. For our analysis we use a simple dummy that records the presence of any water body in a grid cell, but none of our findings rest on the specific definition of this measure.

[16] Measured in kms.

[17] We follow Michalopoulos and Papaioannou (2013) and use pure nightlight intensity as our outcome variable, including local population counts only as a control variable, instead of normalizing the nightlights intensity score. We believe this to be preferable. Calculating nightlights per capita for each grid cell introduces stronger measurement bias. While the nightlights measure comes from a single source, based on a uniform methodology, population counts at the grid cell level are much more uncertain and error prone. The ability to measure population counts more accurately at the sub-national level likely correlates with levels of economic development, state capacity and other unobserved factors.

[18] Data on oil and gas deposits come from the PETRO-DATA dataset (Lujala, Rø and Thieme 2007)

A remaining concern is our ability to empirically distinguish the effects of historical capital cities from standard agglomeration economies of urban centers. If cities emerge due to favorable geographic conditions (e.g., coastal access, low disease burden) and luck, and exert strong path-dependent effects on development, we might observe a correlation in sub-national development and historical capital city location, merely because historical cities are persistent. We address this concern in two ways. For our reduced Euratlas sample we calculate each grid cell's distance to the nearest city that existed in the year 0.[19] Information on city location at that time is also provided by Euratlas. We pick the year 0 to construct this control, because it is the earliest available information on pre-existing urban agglomerations and can be considered pre-treatment with respect to our capital city exposure measure. For our global sample we do not have reliable information on the location of non-capital cities in the year 0. As an alternative we add data on the location of current major urban agglomerations. We use the largest available data set on city locations, an open source file that tracks on the exact location of cities with more than 15,000 inhabitants around the globe (a total of 23,359).[20] We focus on cities with more than 50,000 or 100,000 inhabitants and calculate each grid cell's distance to the closest major urban agglomeration.[21] Summary statistics for all variables in the Euratlas sample and the global data are shown in Table 1.

[19] Measured in kms.

[20] Data on cities comes from the geonames.org project.

[21] Measured in kms.

Table 1: Summary Statistics

	Count	Mean	SD	Min	Max
Euratlas Sample					
log(Lights)	7300	1.06	0.93	0.00	4.04
LHCE δ=5%	7300	0.04	0.04	0.00	1.01
Current Capital Distance	7300	0.47	0.35	0.00	1.89
log(Population)	7300	10.39	2.18	0.00	16.27
Absolute Latitude	7300	41.16	11.54	19.75	60.25
Avg Precipitation	6591	0.45	0.28	0.07	2.33
Avg Precipitation Squared	6591	0.28	0.35	0.00	5.44
Avg Temperature	6591	13.35	7.59	-5.72	30.37
% Mountainous	7300	0.18	0.32	0.00	1.00
Access to Water	7300	0.70	0.46	0.00	1.00
Malaria Index	7300	0.03	0.35	0.00	15.47
Oil and Gas	7300	0.03	0.18	0.00	1.00
Soil Quality	7300	5.53	0.82	0.31	7.00
Distance to Nearest Historical City	7300	0.35	0.38	0.00	1.63
Conflict	7300	0.02	0.04	0.00	0.20
Global Data					
log(Lights)	63415	0.41	0.72	0.00	4.10
LHCE δ=5%	64818	0.02	0.03	0.00	1.82
Local State Antiquity δ=5%	61734	0.30	0.95	0.00	68.12
Current Capital Distance	64818	1.78	1.62	0.00	7.96
log(Population)	64818	7.83	3.75	0.00	16.69
Absolute Latitude	64818	38.93	21.56	0.25	83.25
Avg Precipitation	58675	0.65	0.57	0.07	9.38
Avg Precipitation Squared	58675	0.75	1.62	0.00	88.04
Avg Temperature	58675	9.43	13.98	-30.77	34.52
% Mountainous	64796	0.23	0.35	0.00	1.00
Access to Water	64818	0.75	0.43	0.00	1.00
Malaria Index	64818	1.80	5.14	0.00	38.08
Oil and Gas	64818	0.01	0.12	0.00	1.00
Soil Quality	64818	4.61	1.89	0.00	7.00
Distance to Nearest City	64818	0.60	0.72	0.00	4.78
Conflict	64818	0.01	0.04	0.00	0.20

Results

Table 2 shows estimates of our first set of fixed effects estimations for the reduced Euratlas sample. The table reports five alternative model specifications. Model (1) reports the bivariate regression between our logged nightlights measure and the LHCE indicator, including country fixed effects. Model (2) adds our battery of control variables. Models (3) – (5) replace country fixed effects with different types of sub-national, regional fixed effects.[22] In each model we relate our LHCE measure (with a discount factor of 0.05) to the logged average level of nightlights in 2000-2005. Model (1) indicates that there exists a statistically significant and positive relationship between LHCE and nightlight intensity in the Euratlas sample. This relationship is reduced in size when we include grid-level controls (see Model (2)), but remains positive and statistically significant at conventional levels.[23]

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[22] Note that the inclusion of fixed effects for East-West slices of grid cells is perfectly collinear with absolute latitude in the Euratlas sample.

[23] Section 1 in the Online Appendix adds each control variable at a time. The biggest reduction in the coefficient for our LHCE measure comes from current population counts, followed by average precipitation.

Table 2: LHCE and Nightlights, Euratlas Sample

	(1) log(Lights)	(2) log(Lights)	(3) log(Lights)	(4) log(Lights)	(5) log(Lights)
LHCE δ=5%	5.596***	2.062***	1.956***	2.038***	1.645***
	(0.910)	(0.570)	(0.346)	(0.319)	(0.443)
Current Capital Distance		0.0420	-0.146	-0.0348	0.0342
		(0.138)	(0.102)	(0.0647)	(0.102)
log(Population)		0.279***	0.268***	0.269***	0.273***
		(0.0765)	(0.0213)	(0.0215)	(0.0400)
Absolute Latitude		0.0144	-	-	0.0211+
		(0.0111)	-	-	(0.0126)
Avg Precipitation		0.0475	-0.0238	0.429+	0.0996
		(0.371)	(0.206)	(0.258)	(0.329)
Avg Precipitation Squared		-0.0864	-0.0873	-0.308*	-0.155
		(0.187)	(0.0984)	(0.145)	(0.163)
Avg Temperature		0.0281***	0.0344***	0.0288***	0.0330***
		(0.00575)	(0.00462)	(0.00590)	(0.00639)
% Mountainous		-0.124	-0.110*	-0.0688	-0.132*
		(0.0789)	(0.0460)	(0.0454)	(0.0642)
Access to Water		0.297***	0.273***	0.278***	0.231***
		(0.0760)	(0.0309)	(0.0342)	(0.0474)
Malaria Index		0.0334	0.0346	0.0479+	0.0260
		(0.0441)	(0.0237)	(0.0277)	(0.0246)
Oil and Gas		0.0931*	0.120***	0.123**	0.0897*
		(0.0457)	(0.0343)	(0.0383)	(0.0359)
Soil Quality		-0.000576	0.00179	-0.00306	-0.00361
		(0.0201)	(0.0142)	(0.0127)	(0.0151)
Distance to Nearest Historical City		0.196	-0.439**	-0.315*	-0.0707
		(0.198)	(0.155)	(0.129)	(0.188)
Conflict		-0.288	0.169	-0.667	-0.772
		(1.017)	(0.582)	(0.494)	(0.688)
Constant	0.864***	-3.134***	-2.177***	-2.324***	-3.237***
	(0.0324)	(0.850)	(0.263)	(0.269)	(0.684)
Country FE	✓	✓	-	-	-
Sub-National FE I	-	-	✓	-	-
Sub-National FE II		-	-	✓	-
Sub-National FE III		-	-	-	✓
Observations	7300	6591	6591	6591	6591
Adjusted R^2	0.090	0.472	0.433	0.428	0.435
F	37.81	120.9	87.55	66.44	54.20

Clustered standard errors in parentheses. Models are estimated via OLS.
Model (1) only includes the LHCE measure and country FE. Model (2) adds our battery of controls.
Model (3)–(5) replaces country fixed effects with different types of sub-national fixed effects:
Sub-National FE I: East-West Slices of 30 grid cells within country borders.
Sub-National FE II: East-West Slices of 30 grid cells ignoring country borders.
Sub-National FE III: Grid cell clusters in all four cardinal directions, ignoring country borders.
$^+ p < 0.10$, $^* p < 0.05$, $^{**} p < 0.01$, $^{***} p < 0.001$

Importantly, our measure of local exposure to historical capital cities is also robust when we replace country-level fixed effects with sub-national fixed effects. It is noteworthy that the effect of LHCE on current levels of subnational economic development is present even when controlling for local geographic favorability, and that it is not simply a function of distance to the current capital or clustering of population. Rather, it is driven by the historical exposure to changing capital cities.

The coefficient on local state exposure suggests, moreover, a substantively important effect. The other consistently important predictor across our five models is the dummy variable measuring access to water. Grid cells with water access have, on average, a one-third standard deviation higher levels of logged nightlights than grid cells without. In comparison, moving from the 10^{th} to the 90^{th} percentile of the LHCE indicator increases logged nightlights by about half the amount of the effect of water access. This indicates that the importance of proximity to political and administrative centers is roughly on the same order of magnitude as having access to water for local economic development.

Our second test repeats the same specifications for our global set of grid cells. For these models we would expect that measurement bias, due to changing country shapes, attenuates the coefficient for LHCE. Table 3 shows that this is only marginally the case – the effect of the LHCE measure remains positive and statistically significant across all specifications.[24]

[24] Section 14 in the Online Appendix shows results for the global data excluding the Euratlas sample. Results are substantively similar to Table 3, although coefficient estimates are larger when compared to Table 3. This difference in coefficients suggests that there exists attenuation bias in the global data, which is likely most severe for grid cells from the Euratlas sample. However, given that this specific measurement problem is of no concern for the analysis in Table 2, attenuation bias is unlikely to fully explain our findings.

Table 3: LHCE and Nightlights, Global Analysis

	(1) log(Lights)	(2) log(Lights)	(3) log(Lights)	(4) log(Lights)	(5) log(Lights)
LHCE δ=5%	5.756***	2.038***	1.756***	1.648***	1.593***
	(1.014)	(0.470)	(0.278)	(0.232)	(0.304)
Current Capital Distance		-0.0782**	-0.00592	0.0160*	0.0431***
		(0.0260)	(0.0175)	(0.00770)	(0.0118)
log(Population)		0.191***	0.201***	0.197***	0.194***
		(0.0217)	(0.00487)	(0.00466)	(0.00813)
Absolute Latitude		-0.00112	-0.307***	-0.312***	0.0165***
		(0.00382)	(0.0398)	(0.0413)	(0.00421)
Avg Precipitation		-0.0272	-0.111***	-0.0841***	-0.114***
		(0.0715)	(0.0211)	(0.0193)	(0.0344)
Avg Precipitation Squared		0.000723	0.00748+	0.00322	0.00818
		(0.0118)	(0.00416)	(0.00394)	(0.00761)
Avg Temperature		0.00343	0.00578***	0.00650***	0.00915***
		(0.00346)	(0.00128)	(0.00130)	(0.00222)
% Mountainous		-0.228***	-0.167***	-0.154***	-0.186***
		(0.0402)	(0.0139)	(0.0141)	(0.0222)
Access to Water		0.0829***	0.0752***	0.0846***	0.0771***
		(0.0164)	(0.00522)	(0.00606)	(0.00891)
Malaria Index		-0.0115**	-0.000915	0.000415	-0.00621***
		(0.00351)	(0.00121)	(0.00106)	(0.00186)
Oil and Gas		0.138***	0.113***	0.135***	0.115***
		(0.0301)	(0.0187)	(0.0201)	(0.0203)
Soil Quality		-0.0498**	-0.0107**	-0.00729+	-0.0213***
		(0.0183)	(0.00382)	(0.00390)	(0.00610)
Distance to Nearest City		0.203***	0.0878**	0.131***	0.0478
		(0.0367)	(0.0299)	(0.0284)	(0.0530)
Conflict		-0.583	-0.461*	-1.308***	-1.076***
		(0.386)	(0.222)	(0.144)	(0.215)
Constant	0.320***	-0.869***	10.43***	10.54***	-1.827***
	(0.0157)	(0.139)	(1.501)	(1.560)	(0.184)
Country FE	✓	✓	-	-	-
Sub-National FE I	-	-	✓	-	-
Sub-National FE II		-	-	✓	-
Sub-National FE III		-	-	-	✓
Observations	63415	57764	57764	57764	57764
Adjusted R^2	0.064	0.503	0.347	0.344	0.334
F	32.21	73.46	189.2	188.2	62.49

Clustered standard errors in parentheses. Models are estimated via OLS.
Model (1) only includes the LHCE measure and country FE. Model (2) adds our battery of controls.
Model (3)–(5) replaces country fixed effects with different types of sub-national fixed effects:
Sub-National FE I: East-West Slices of 30 grid cells within country borders.
Sub-National FE II: East-West Slices of 30 grid cells ignoring country borders.
Sub-National FE III: Grid cell clusters in all four cardinal directions, ignoring country borders.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

We again find across all five models a positive and statistically significant effect (below the 0.1% level) for local exposure to historical capital cities.

We implement a number of robustness checks across both samples to ascertain the strength of our findings. For example, we repeat the analyses in Tables 1 and 2 using alternative discount factors for the LHCE measure. We let discount factors range from 0%, 1%, 10% to 50% to vary the level in which past exposure to statehood (and transportation costs) affect our aggregate score of local exposure to historical capital cities. Irrespective of the discount factor, we can uniformly confirm a positive and statistically significant effect for our LHCE variable in both samples (see Sections 3 and 11 in the Supplementary Appendix for details).

To safeguard against outliers, we also re-estimate model (2) in Table 1 and 2, with a jackknife procedure, dropping one country at a time, without affecting our findings (see Section 5 and 12 in the Supplementary Appendix). To further probe potential effects of border changes in the global data, we repeat the main analysis dropping all grid cells within 100km of current borders. This reduces the sample to "territorial cores" that are more consistent throughout time. Again, we can strongly confirm our initial findings (Section 9 in the Supplementary Appendix). For our global data we also replace our control variable that measures the distance to the nearest urban agglomeration with >50,000 inhabitants with an alternative measure, using a >100,000 inhabitant threshold (Section 8 in the Supplementary Appendix), without changing the results. Given that we are working with highly spatially disaggregated data, it is reasonable to assume that there is spatial dependence in our outcome measure as well as our LHCE measure. To address concerns of spatial dependence we instead re-estimate our main model, using standard errors based on Conley (1999). Section 6 and 13 in the Supplementary Appendix reports full regression tables for the Euratlas and global analysis. In neither case does the use of Conley standard errors reduce the statistical significance of our LHCE variable.

Since our coding of capital cities in the global data is tied to Bockstette et al.'s state antiquity data, we also construct alternative measure for exposure to state institutions that combines the inverse distance to the capital city with the state antiquity scores for each of the 39 half centuries. In effect, this adds information on the strength of states with information on their geographic locus. For this variable we also find a positive and statistically significant effect on nightlight intensity (Section 7 in the Supplementary Appendix).[25] In Section 4 and 10 we also explore possible non-linearities in the effect of local exposure to historical capital cities. We estimate a quadratic and log specification for both samples. Both specifications suggest the presence of some non-linearities. Figure 1 in Section 4 of the Appendix visualizes the effect of LHCE in the quadratic and log specification, showing that the effect is largely linear with weakly decreasing marginal effects.

As a final robustness check we implement a sensitivity analysis following Bellows and Miguel (2009). The approach estimates the remaining bias through unobservables needed to invalidate the main result. To identify this quantity, one compares the estimates for local historical state exposure for a restricted or sparse regression model to a "full" regression model and compute $\frac{\widehat{\alpha_{\text{full}}}}{\alpha_{\text{sparse}}-\widehat{\alpha_{\text{full}}}}$. This ratio increases in the size of the estimated regression coefficient for the full model (the conservative estimate of the effect) and decreases in the differences between regression coefficients, i.e. the degree to which observable factors change the estimate. The higher the ratio, the larger the selection on unobservables must be to explain the estimated effect. Bellows and Miguel (2009) suggest a value of 1 (100% of the variation) as a rule of thumb threshold, below which selection on unobservables could cast doubt on the results. To calculate the ratio we compare a model with no controls to a model without additional grid controls and country fixed effects, and compare a model with grid controls to a model with grid controls and country fixed effects. The resulting ratios are 1.21 and 1.58 respectively in the Euratlas sample and 3.4 and 3.69 in the global data, suggesting that the bias through selection on unobservables would have to be 121% to 369% of the selection on observables, which is fairly unlikely.

[25] Adding the state antiquity scores to our distance based measure does not appreciatively increase the explained variance in nightlights, nor does it increase the substantive magnitude of the effect. This suggests that most of the effect is driven by distance to the capital city and not by the little variation in state antiquity scores (considering the inclusion of country fixed effects in our models).

Our empirical analysis and robustness checks have documented a clear association between local historical state exposure and local development, in line with our theoretical argument. We conclude with some tentative attempts to further unpack the effect and underlying mechanism

Conclusion

We have provided an argument and evidence linking local experience with governance to economic development. In doing so, we make two contributions. Theoretically, we move beyond current debates about good and bad institutions to emphasize that political order of any sort spurs development. As the state's capacity to govern territory expands, so do the prospects for a widely shared unit of exchange, contract enforcement, trade-facilitating transportation networks, economic specialization and development. Simultaneously, opportunities for rent-seeking multiply. Localities that are isolated from state power face profound constraints on their capacity to develop any of these crucial ingredients of exchange. In developing this argument, we hearken back to Huntington's (1968) emphasis on the extent, rather than quality, of order in societies, albeit with the added insight provided by recent work on the spatial unevenness of the state. Empirically, we provide the first analysis of economic development and state exposure at the local level for a sample covering Europe, Northern Africa, and the Middle East, as well as data spanning the whole globe. We do so by developing an original measure of local-level exposure to the state that builds on the importance of capital cities, combining it with geographically nuanced indicators of economic development. Our findings linking local exposure to historical capital cities to local economic development are robust in the face of several estimation strategies and robustness checks.

Beyond these contributions, our approach points to several avenues for future research. Two theoretical frontiers beg for additional attention. First, there is little systematic research that aims to explain the spatial extent of state power, or conversely, why some localities remain all but untouched by state authority for decades and even centuries. Though state weakness is associated with civil war, terrorism and other threats to humanity, the social sciences provide scant insight into why states vary in their capacity to govern across territory. The considerable research on state "capacity" and "failure" typically understands those concepts as characterizing an entire country. Yet the underlying societies over which states govern are highly differentiated across their geographies, and states' capacity to govern across these heterogeneous political and social spaces is uneven. This raises important unanswered questions: How and why do state leaders expand their capacity to provide governance across the territory of a country? What are the implications of different state-building strategies for public goods provision, well-being, and peace?

Second and relatedly, our research points to the importance of coming to a clearer understanding of how distinct local and regional economic and political geographies combine during processes of national integration. In their famous example, Acemoglu, Johnson and Robinson (2001) relate settler mortality and pre-colonial population densities to the development of subsequent national institutions. Yet these and other features of human and economic geography vary hugely within many countries, leading to different institutions. As Engerman and Sokoloff (2005) note, the U.S.' underlying endowments were consistent with the development of *both* extractive and inclusive economic institutions. The conflict between those two sets of institutions played out through the civil war. But the U.S. civil war is only one case of the conflicts between heterogeneous local and regional interests that characterize many societies. The analytical challenge is to develop some systematic understanding of how, when and why these geographic conflicts are resolved or not over the course of state consolidation. Relatedly, this debate also speaks to the underlying mechanisms that are driving our finding. While capital cities provide crucial infrastructure, contract enforcement, and facilitate long-term trade, they also generate opportunities for increased rent-seeking and the predatory exploitation of rules for economic gain. While either mechanism can explain the clustering of economic activity around capital cities, they might have very different implications for long-term institutional trajectories.

If it is the reach of state institutions that fosters development, we might also be able to further explore the strength of our theory by integrating more fully Tilly's (1990) argument that wars make states. If competition between states provides incentives to develop effective bureaucracies and extend the reach of the state, we would expect that modern countries that experienced more competition between political entities throughout their history show stronger effects of our LHCE measure on development than countries with less competition.

Empirically, our research points to the need (and difficulty) of doing more geographically nuanced historical work. The literature on "the state", state capacity and state failure are overwhelmingly national in orientation, and most such work is limited to the last several decades for which we have the requisite national accounts, public finance and conflict data. Yet the reach of the state is heterogeneous across territory even in the most developed countries, and the origins of that heterogeneity seems likely to be rooted in historical processes of state building. We are currently seeing a revolution in the collection of geo-coded data—the Demographic Health Survey project, for instance, has geo-coded the location of health clinics for many countries around the world, and many household surveys are now deployed with GPS devices. These innovations are opening up a new level of analysis for researchers interested in geography, but historical work remains profoundly difficult. Our own approach to measuring local state capacity has relied on assumptions about how distance has mediated the relationship between capitals cities and their peripheries over the centuries. As work in this vein moves forward, it will be fruitful for social scientists to engage with historians and geographers in the development of more detailed historical data that speaks to key issues of governance and development.

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