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Capital Cities, Conflict, and Misgovernance[†]

By Filipe R. Campante, Quoc-Anh Do, and Bernardo Guimaraes*

We investigate the links between capital cities, conflict, and the quality of governance, starting from the assumption that incumbent elites are constrained by the threat of insurrection, and that the latter is rendered less effective by distance from the seat of political power. We show evidence that (i) conflict is more likely to emerge (and dislodge incumbents) closer to the capital, and (ii) isolated capitals are associated with misgovernance. The results hold only for relatively nondemocratic countries and for intrastate conflicts over government (as opposed to territory)—exactly the cases where our central assumption should apply. (*JEL* D72, D74, O17, O18, R12)

According to the World Governance Indicators, Equatorial Guinea is a very poorly governed country: it scores below the tenth percentile across countries in all measures of quality of governance—with the exception of political stability, where it was around the thirtieth percentile (as of 2014) and trending downward. It is also the country with the largest proportion of its population living below the (national) poverty line (76.8 percent, in 2006, as per the World Bank). Yet its leader, President Teodoro Obiang, who has won recent elections with a share of votes exceeding 95 percent, is currently devoting a substantial amount of the country's large oil revenues to building a new capital city, Oyala. As described by the BBC (2012), "Oyala will house the president, the government, and—according to the master plan—up to 200,000 people. Where the inhabitants will come from is

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anyone's guess. The population of the entire country (just over 750,000) could fit into the city of Leeds (UK), and the vast majority live far away, close to the coast."

Why have the capital at such a peculiar location? The Sackur (2012) notes that "it's the remoteness of Oyala that makes it so appealing to President Obiang. In a rare interview he described how rebels had recently plotted a seaborne assault on his palace in the current capital, Malabo. 'We need a secure place for my government and for future governments. That's why we have created Oyala, to guarantee the government of Equatorial Guinea.' "

This paper shows that this example illustrates a broader, systematic pattern linking quality of governance, the threat of conflict, and the spatial distribution of a country's population relative to the seat of political power. Many have noted that the threat of insurrection and conflict can play a crucial role in the emergence of good governance, as it limits the ability of rulers and elites to appropriate the apparatus of government to their own benefit.[1] It looms especially large when there are relatively few explicit, formally established checks and balances, such as those imposed by a well-functioning democratic process through which incumbents might be held accountable.

We start off with the recognition, motivated by the historical evidence, that capital cities have often played a pivotal role in determining the outcome of insurgencies and revolutionary standoffs—and that incumbents react to the incentives posed by this role. While few are as frank about their motives as the Equatoguinean leader, similar examples of planned and executed capital city relocations abound. Most important, many other, perhaps less extreme policies can also affect the distribution of population relative to the capital—say, spatially targeted economic incentives and subsidies, or restrictions to internal migration—and be used to respond to these incentives.

We study the implications of this recognition for the quality of governance and for the spatial distribution of conflict. We first present a model to guide our interpretation of the empirical results. The model considers an incumbent elite that can extract rents but is subject to the threat of rebellions from dissatisfied citizens. Our key assumption is that rebellions that take place closer to the capital city are more effective. This embodies the principle that "spatial proximity to power increases political influence" (Ades and Glaeser 1995, 198), and especially so when that influence is mediated by the threat of violence.

This assumption has implications for the spatial distribution of conflict: conflict is more likely to emerge closer to the capital city, and more likely to dislodge the incumbent regime when it happens close to the capital. Intuitively, it is cheaper for incumbents to obtain a given amount of stability by buying off those who live far away: they can be placated with less because they represent a lesser threat. Incumbents are thus willing to live with a greater probability of conflict nearby, in spite of the greater danger it entails.

[1] On the emergence of institutions as a result of latent social conflict and (the threat of) violence, see Acemoglu and Robinson (2006), Besley and Persson (2009), Bueno de Mesquita and Smith (2008), or Guimaraes and Sheedy (2017).

Allowing the incumbent elite to choose the degree of isolation of the capital city and the quality of governance yields an association between isolated capitals and misgovernance.[2] This reflects causality going in both directions. On the one hand, a more isolated capital induces worse governance: when incumbent elites are more protected against the threat of rebellion, they can extract rents more easily and have less incentive to share power and rents. On the other hand, bad governance increases the incentive to isolate the capital because incumbents in a less productive economy will worry less about the losses induced by that additional isolation.

The empirical evidence corroborates these results. We first look at worldwide geo-located data on the onset and prevalence of conflict. We show that intrastate conflict is more likely to start and to occur in places that are closer to the capital city, controlling for income, population, and a number of geographical variables (including broad measures of isolation unrelated to the capital city). Using the panel variation and changes in country borders and capital city moves—arguably exogenous with respect to local characteristics—as the source of identification, we also find that, for a given place, conflict becomes more likely when the capital is moved closer to that place. Finally, we show that moving the capital closer to a given place increases the likelihood that the onset of conflict in that location will be associated with regime change.

Reassuringly, these empirical patterns hold only in contexts where we would expect the forces we focus on to be most important. First, they are present only in relatively nondemocratic countries, where the threat of conflict should be more salient as a constraint on rulers. Second, we find no link between distance to the capital and the types of conflict to which our logic should not apply. In particular, that is the case for interstate conflicts and for "territorial" intrastate conflicts—namely, those where the main claimed incompatibility regards territory (e.g., separatist insurgencies), as opposed to who gets to control the government. Third, we find no results when using distance to the largest (noncapital) city, suggesting that our findings are not spuriously driven by general isolation unrelated to the capital. Last but not least, our findings are also pointedly inconsistent with what one might have expected from alternative explanations: for instance, if the link were driven purely by weak state capacity, it would stand to reason that conflict would be more likely farther from the capital, as the reach of the state grows feebler. Similarly, we would expect no difference with respect to territorial conflict.

We then look at the link between capital cities and governance. We find robust evidence that isolated capitals are indeed associated with misgovernance, controlling for a number of standard correlates of quality of governance and isolation of the capital, and using different ways of measuring these concepts.

Other pieces of evidence reinforce our confidence that this correlation indeed captures the operation of the forces we highlight. First, the correlation is again present only for relatively nondemocratic countries. Second, when we unpack the definition of governance, we see that in fact the autocracies with isolated capitals

[2] We take the choice of location of the capital city as a shorthand description for all the policy levers that affect the spatial distribution of individuals relative to the capital city, of which actually relocating the capital is just a relatively extreme example—though, as we will see, not that infrequently used or contemplated.

have governments that are less effective, less accountable, more corrupt, and less able or willing to sustain the rule of law; however, they are not more unstable. This is consistent with the idea that isolation is a way of protecting against the threat of removal. Neither is there any correlation between isolated capitals and measures of government performance that are unrelated to the kind of institutional incentives our framework highlights, again suggesting that our empirical findings are unlikely to be driven by some unrelated link between isolated capitals and lack of state capacity.

Similarly, we find evidence that the correlation is indeed about the role of the capital city: controlling for the isolation of the country's largest city other than the capital leaves results unaffected. Along with the evidence on conflict, this is reassuring against the possibility that isolation from the capital might have been proxying for factors related to the state's ability to supply a high-quality institutional infrastructure to relatively isolated places. We also find direct evidence that isolated capital cities are associated with less power sharing, as captured by constraints on executive power and by the extent of political competition. Finally, we find evidence—again, only for the sample of relatively nondemocratic countries—for the model's ancillary results: the isolation of the capital city is positively correlated with the income per capita in the capital (relative to the country as a whole), and negatively related with military spending (which could be used as an alternative source of protection).

This paper relates to a range of different strands of literature. It fits directly into the one that stresses the political implications of spatial distributions, both in economics (e.g., Ades and Glaeser 1995, Davis and Henderson 2003) and in political science (e.g., Rodden 2010). In fact, the importance of the spatial distribution of population and its connection with the threat of rebellion facing rulers has long been recognized by an important group: rulers themselves. As we discuss in detail later, the history of decisions on where to locate capital cities suggests that protection against perceived instability threat is a pervasive concern behind capital relocations, either planned or actually implemented.

We emphasize the special role of the capital city, and in that we are closely related to Campante and Do (2014). That paper looks at how the spatial distribution of population and the isolation of capital cities affect government performance across US states by conditioning the degree of accountability provided by the news media and the electoral process. We look here at a very different mechanism, related to the threat of conflict, which we show to be in force in a very different, nondemocratic context.[3] Another crucial distinction is that, while that paper points at a direction of causality running from the isolation of the capital to governance, we argue here that the reverse direction is just as important in the case of weakly institutionalized polities, as incumbents have considerably more influence in affecting the spatial distribution of population relative to the capital.

[3] While that paper's results seem in tension with our finding of an absence of a link between the degree of isolation and governance in established democracies, they can be reconciled quite naturally: as much as there is a real difference between the extent of corruption in, say, Minnesota and Louisiana, this is evidently swamped by the variation across countries. It is not surprising that the cross-country evidence is painted with strokes that are too broad to detect the effect of the subtler mechanisms that are in play in established democracies, and which we leave aside here.

We contribute to the voluminous literature on intrastate conflict and civil wars (see Blattman and Miguel 2010 for a survey). Our focus is on one of the possible motivations for conflict, namely attempts to bring down an incumbent regime, and even more narrowly, on its spatial dimensions. Still, we relate directly to the strand within that literature that considers the role of geographic and demographic factors (e.g., Fearon and Laitin 2003), and in doing so, we address several of the aspects highlighted by Sambanis (2005) as in need of empirical exploration: distinctions between established democracies and more fragile environments, geographic concentration of power, or the degree of state control over a country's geographic periphery. As we have argued, our results go against the more standard presumption that isolated areas are more prone to conflict, further illustrating the value of considering the special role of capital cities, and of differentiating between different types of conflict.[4]

We also build on the literature on the endogenous emergence of institutions and their implications for development. In particular, we address the broad question of the persistence of inefficient institutions (e.g., Acemoglu 2006, Guimaraes and Sheedy 2017). We identify the spatial distribution of individuals as a novel source of variation in the constraints that underpin institutional choices, which may leave agents who stand to benefit from those inefficient institutions better able to get away with their preferences. We are also close to the recent strand of that literature that has tried to unpack the evolution of political institutions along different dimensions, such as checks and balances, power sharing, and political stability (e.g., Besley, Persson, and Reynal-Querol 2016). We provide further support for the view that these can interact in subtle ways and move in separate directions as a result.

Finally, we relate to a literature on how the isolation of countries or their geographical size affects institutions and development—such as Nunn and Puga (2012) and Ashraf, Özak, and Galor (2010). They do not deal with the specific institutional role of the capital city and its isolation. On a different vein, Stasavage (2010) emphasizes how geographical distances from European capital cities might have hindered the historical development of representative institutions through reduced accountability, though his historical data do not allow for consideration of the spatial distribution of population.

The paper is organized as follows. Section II discusses some motivating historical evidence, Section III presents the model, Section IV discusses the empirical evidence, and Section V concludes.

I. Revolutions and Capital Cities

Physical proximity to the stronghold of government matters critically when it comes to removing it by force: a relatively small mob in the capital city poses as much of a threat as a much larger group of rebels elsewhere. It follows that the

[4] For instance, Buhaug and Rød (2006) finds evidence, using African data, that separatist conflict is more likely in isolated areas near national borders and farther from the capital, where control by the central government is weaker. In contrast, Besley and Reynal-Querol (2014) finds that conflict in Africa is more likely closer to the capital city, in line with our results.

population in and around the capital is especially important in these contexts, as can be illustrated by a brief look at a few revolutionary episodes over the past three centuries.

A classic example is the transition century from the ancien régime to the Third Republic in France. Around the time of the French Revolution, the 550,000 people living in Paris certainly did not represent the average or median opinion of some 29 million Frenchmen, among which were many royalists willing to defend the monarchy.[5] While turmoil in the countryside was certainly important leading up and in the aftermath of the Revolution (Markoff 1996), the Parisian crowd packed a far heavier revolutionary punch, as described by Tilly (2003, 162–167), than those anywhere else. As put by Traugott (1995, 148) in his analysis of French insurrections during the following century: "as Paris goes, so goes the nation."

In fact, the Parisian streets witnessed considerably more intense and consequential revolutionary action than other places, as can be seen from the historical evidence on barricade episodes in nineteenth-century France. Table 1, compiled from Traugott (2010), shows that Paris had more episodes, which tended to last longer and be of greater magnitude than elsewhere.

The logic linking revolutions and capital cities is by no means limited to eighteenth and nineteenth-century France, of course. As put by *The Economist*, in the context of the 2006 "Orange Revolution" in the Ukraine—and as was repeated in the same country in 2014—"during a [revolutionary] stand-off, the capital city is crucial" (March 18, 2006, 28). The lingering political turmoil in Thailand, in recent years, is another example of how hard it is for a government to stay in power if it lacks support from the population of the capital city, even when such government was largely popular elsewhere in the country (*The Economist*, September 22, 2006). By the same token, incumbent regimes are obviously especially concerned with securing the capital city when the threat of rebellion becomes acute (e.g., Arriola 2013 on the case of Ethiopia).

The importance of the capital is underscored by the many incumbent rulers who have tried to manipulate the concentration of population around the capital by moving the latter. More often than not, alleviating revolutionary pressure was one of the explicit or barely concealed goals behind those moves, as so vividly illustrated by the aforementioned case of Equatorial Guinea.

In fact, examples from history abound. In the seventeenth century, Louis XIV moved away from the masses into the tranquility of Versailles, a move motivated by his dislike of Paris, stemming from the rebellions against the Crown he suffered during his youth, and by his desire to "not again allow the Paris populace [. . .] to threaten the French monarchy." (Kirkland 2013, 4) Modern examples are also easy to come by, and many other countries have fiddled with the idea, even if falling short of carrying it through. In just about every case, a chief concern was to have the new

[5] National and city population figures come from estimates of McEvedy and Jones (1978) and from Braudel (1986), who observed that France at the end of the ancien régime was still very much a rural country. Later on, royalist counterrevolutionaries rioted in Brittany, La Vandée, and Dauphiné, regions too far from Paris to make any difference.

Table 1—Independent Barricade Episodes in France, 1789–1900

	Observations	Mean	SD	Min	Max
Paris					
Magnitude	19	9.5	6	4	24
Duration	18	2.8	2.8	1	13
Rest of France					
Magnitude	9	6.8	4.2	3	15
Duration	8	1.6	0.5	1	2

Notes: The table considers all "independent" events (namely, those not triggered by episodes occurring elsewhere) between 1789 (excluded) and 1900. "Magnitude" is the sum of the codes for "Number of Insurgents" (1 = 1 to 99; 2 = 100 to 999; 3 = 1,000 to 9,999; 4 = 10,000 and up), "Number of Insurgent Deaths" (0 = none; 1 = 1 to 9; 2 = 10 to 99; 3 = 100 to 999; 4 = 1,000 and up), and "Number of Barricades" (2 = 1 to 9; 4 = 10 to 99; 8 = 100 to 999; 16 = 1,000 and up). Duration is measured in days.

Source: Traugott (2010)

capitals to be "quiet, orderly places where civil servants could get on with their jobs without distraction" (*The Economist*, December 18, 1997).

Looking closely at a couple of these modern examples helps illuminate that logic. Brazil moved the capital in 1960 from Rio de Janeiro to Brasília—many hundreds of kilometers away from the main population centers of Rio de Janeiro and São Paulo and far from the coast, where most of the country's population was and still is. As Couto (2001) remarks, one of the factors motivating the president who decided to build the new capital from scratch, Juscelino Kubitschek, was a desire to escape from the atmosphere of political agitation in Rio, where the president was more exposed to political crises and student demonstrations. As he himself put it, rather colorfully: "A tramway strike in Rio de Janeiro may bring down the President of the Republic" (Couto 2001, 199, our translation).

The recent move in Myanmar (Burma) in 2005 from the major population center of Yangon (Rangoon) to the fortified "secret mountain compound" of Naypyidaw is another illuminating, if somewhat extreme example (Mydans 2005). It has been noted that the new capital seems to have been designed to further isolation and minimize the possibilities of urban upheaval (Varadarajan 2007). As if to emphasize this design, the city was deliberately planned without mobile phone coverage, and civil servants were not allowed to take their spouses or children along when they originally moved (Htay 2007). These are measures that are hard to justify under the oft-mentioned rationales of developing an underpopulated part of the country or protecting against foreign invasion.

This pattern can be seen more systematically with the help of Table 2. This table lists all instances in which capital cities were moved, on a permanent basis, by formally independent countries since World War I, with the corresponding distances and population numbers.[6] These are not rare episodes: on average, capital moves happen once every six years, and there are examples from every continent. Most

[6] Sources are listed in the online Data Appendix. Population numbers are for as close to the event as could be found. Exceptions involving temporary moves or moves within a 10 km radius are listed in the notes below the table.

Table 2—Change in Capital Cities since World War I

Country	From	To	Year	Distance (km)	Population (from)	Population (to)
Russia	St. Petersburg	Moscow	1918	633	2.3 million (1917)	1.8 million (1915)
Turkey	Istanbul	Ankara	1923	351	680,000 (1927)	75,000 (1927)
Australia	Melbourne	Canberra	1927	472	670,000 (1914)	–
China	Nanjing	Beijing	1949	1,219	2.8 million (1955)	2.8 million (1953)
Mauritania	–	Nouakchott	1957	–	–	200 (1957)
Brazil	Rio de Janeiro	Brasilia	1960	754	3.1 million (1960)	–
Rwanda	Butare	Kigali	1962	80	NA	6,000 (1962)
North Yemen	Ta'izz	Sana'a	1962	198	87,000 (1975)	135,000 (1975)
Pakistan	Karachi	Islamabad	1966	1,144	1.9 million (1961)	–
Malawi	Zomba	Lilongwe	1974	227	24,000 (1977)	99,000 (1977)
Côte d'Ivoire	Abidjan	Yamoussoukro	1983	228	1.2 million (1978)	200,000 (2005)
Chile[a]	Santiago	Valparaiso	1990	98	4.6 million (1990)	800,000 (2002)
Nigeria	Lagos	Abuja	1991	541	5.7 million (1991)	–
Tanzania[a]	Dar-es-Salaam	Dodoma	1996	571	2.3 million (2002)	213,000 (2002)
Kazakhstan	Almaty	Astana	1997	974	1.1 million (1999)	281,000 (1999)
Malaysia[b]	Kuala Lumpur	Putrajaya	1999	47	1.7 million (2000)	70,000 (2000)
Myanmar (Burma)	Yangon	Naypyidaw	2005	330	4.1 million (2007)	–

Notes: We include the designation of capital cities by independent countries; any designation at the time of independence is included only if the chosen capital is different from the colonial capital. (Mauritania had no colonial capital.) Instances where capital cities were moved within the same metopolitan area (<10 km), namely the Philippines (1975) and Sri Lanka (1982), are not included. (West) Germany (1990) and Albania (1920) are not included, since in these cases, the existing regimes had maintained temporary capitals pending reunification and completion of the independence process, respectively. "NA" stands for "not available." Distance is measured "as the crow flies." All cities are referred to by their current English designations.

[a] Legislative only

[b] Executive only

Source: Multiple sources (see online Appendix)

important from our standpoint, the moves are overwhelmingly in the direction of greater isolation, at least under the rough measure of capital primacy (share of population in the capital city). This pattern might have been expected since the capital is typically the largest city in the country, but it is striking that the typical new capital is a lot smaller than the old one—often built from scratch.

The relatively extreme policy lever of picking or influencing the location of the capital city is useful to illustrate the point, but we should stress that many other levers are available. For instance, incumbents can try to placate discontent arising in the capital, or otherwise influence the distribution of population around the capital—say, with special incentives or coercion toward populating certain areas of the country or with restrictions on domestic migration.[7]

To be sure, the power of the capital is not absolute, and there are other forces that could push in the opposite direction. For instance, many have emphasized that

[7] Stark examples of such policies are not hard to come by either: from relatively benign registration systems that restrict internal migration—such as the Chinese *hukou* or the Vietnamese *hô khâu*—to more extreme cases, such as the mass deportation of ethnic groups and the confinement of dissidents to remote areas in the Soviet Union, or the forced depopulation of cities during the reign of the Khmer Rouge in Cambodia. As with capital city moves, these are all policies that are not motivated solely by a desire to isolate the capital, but it is telling that one can hardly find examples of such regimes encouraging their populations to move closer. It is just as telling that they often specifically target groups considered particularly dangerous in terms of kindling insurgencies, such as disgruntled minorities or students. On the latter group, there have been many examples of universities being relocated away from the center of a capital city after episodes of student unrest, as illustrated by the relocation of the main campus of Seoul National University in South Korea in 1975 or those of Parisian universities in the aftermath of the events of May 1968.

isolation may help insurgencies by making repression more difficult as in Mao Zedong's well-known account of guerrilla warfare (Mao 1961), or more broadly, that concentration facilitates an incumbent autocrat's monitoring and suppression of opponents (Anthony and Crenshaw 2014). Similarly, while we argue that proximity to the capital may be important when it comes to insurgencies that aim at overthrowing an incumbent government, it could well be the case that distance favors those that are trying to break away from the country instead. In any case, the relationship between distance to the capital and the threat of insurgencies, as well as the implications of this relationship, ultimately constitute open questions to be explored both conceptually and empirically.

II. A Simple Model

Against this background, we now propose a simple model of the joint determination of the quality of institutions and the degree of isolation of the capital city, mediated by the threat of conflict. Groups of individuals who are dissatisfied with existing institutions, under which an incumbent elite can extract rents from its citizens, can challenge them by rebelling. Our key assumption is that those who are closer to the capital city—the seat of political power—will (ceteris paribus) have an advantage in that regard.

A. *Basic Setup*

Consider an economy populated by a continuum of individuals of measure one. A measure p of individuals is in power (the "incumbent elite" or "incumbents"), and the remaining individuals are "citizens." In order to capture the special role of the capital city in as simple a fashion as possible, we posit that there are different groups of citizens and two places where they can locate: the capital, denoted by $\mathscr{C}$, and elsewhere, which we denote by $\mathscr{F}$ (for "faraway"). We denote the fraction of citizens living in $\mathscr{F}$ by ℓ, which thus captures the degree of isolation of the capital city.

Conflict.—There are n groups of citizens, which for simplicity we assume to be all of the same size. Group membership does not cut across different locations: either all individuals in group ι are in $\mathscr{F}$ ($\iota = 1$), or they are all in $\mathscr{C}$ ($\iota = 0$).[8] We define the net potential gain from conflict for group ι as

$$\gamma_\iota \equiv \frac{y^*}{w_\iota} - T\ell_\iota - \chi_\iota, \tag{1}$$

where y^* is a constant, w_ι is the available income for group ι, chosen by the incumbents, and χ is a parameter representing the cost of engaging in conflict.[9] In online Appendix A, we show a model of conflict that yields this reduced-form formulation.

[8] We take groups as given, for simplicity, but in Campante, Do, and Guimaraes (2013), we show a model where group formation is endogenous.

[9] One possible interpretation for y^* is that, as in Acemoglu and Robinson (2006), a successful rebellion leads to a democracy in which resources are equally divided among all groups, so that $y^* = Y^*/n$ (possibly up to a constant).

The positive constant T embodies our key assumption: those who are far from the capital ($\ell_\iota = 1$) obtain a lower net potential gain from launching a rebellion. This provides us with a simple shortcut for capturing the special role played by the capital city in insurrections. A conflict involving group ι arises if it pays off for that group ($\gamma_\iota \geq 0$). If that happens, incumbents are dislodged from power. Since there is no uncertainty in the conflict technology, no conflict arises in equilibrium: the condition in (1) effectively yields the income incumbents must leave with citizens in order to avoid it. In online Appendix B.B2, we extend the model to allow for conflict in equilibrium by considering χ_ι to be a random variable and also for a probabilistic chance of success depending on effort.

Still, the threat of conflict lies at the very heart of the mechanism we study, and our key assumption has important implications for the spatial distribution of conflict, as we show formally in online Appendix B.B2. In particular, conflict is more dangerous for the incumbent elite when it occurs close to the capital city, since groups located in $\mathscr{C}$ pose a greater threat. In spite of that, conflict is more likely to occur close to the capital city: it is more costly for incumbents to buy an extra amount of stability from those groups, precisely because they pose a greater threat. As a result, those in the capital city also obtain more rents in equilibrium, a premium that is increasing in their relative technological advantage in conflict, T.

Quality of Governance.—We consider a production function that depends on the spatial distribution of population (relative to the capital) and the quality of governance. Specifically, let ℓ^* be the output-maximizing degree of isolation of the capital city, which we take to be a primitive indicating the efficient spatial distribution of population relative to the capital.[10] We can take this to capture a balance between congestion costs and economies of scale, but the specifics are immaterial: the crucial point is that there is a cost to completely isolating the capital. In the absence of such a cost, the elite's problem would be trivially solved by totally isolating the capital, which would be both uninteresting and unrealistic.

We can then write

$$Y = A(p)\left(Y^* - \phi(\Delta\ell)\right),$$

where Y is the level of output, Y^* corresponds to output when $\ell = \ell^*$, $\Delta\ell \equiv \ell - \ell^*$ and $\phi(\Delta\ell)$ is the output loss owing to a choice of ℓ different from ℓ^*. We assume that ϕ is a convex function with $\phi(0) = 0$, $\phi'(0) = 0$ (optimality condition) and $\phi'' > 0$. As for power sharing p and productivity A, we assume that $A' > 0$ and $A'' < 0$.

[10] To fix ideas, we can think of a country where resources are spread over the country's territory (say, the United States) as one where the optimal arrangement from a production standpoint involves a high degree of isolation ℓ^*. In contrast, a country where resources are geographically concentrated (say, Egypt) would exemplify a low ℓ^*. The Egyptian case is instructive, especially as the government has recently announced plans to build a new capital (Schiavenza 2015). While we would think it is hardly coincidental that relocation plans have been revived soon after the revolutionary episodes of the Arab Spring, the fact that the planned seat of government would be located in the outskirts of Cairo indicates that it might be quite costly to move the capital too far away.

The assumption on the productivity shifter A is the other key ingredient: productivity is enhanced by increasing the measure of individuals in power, p. This captures the idea that sharing power entails good governance: for instance, the provision of public goods, such as protection of property rights and enforcement of contracts, requires checks and balances that have to be provided by a set of civil authorities. We interpret an increase in p as the addition of such a set to the core of the incumbent elite, and their presence enables individuals to access better technologies that rely on those public goods. Under this assumption, we will refer to p interchangeably as a measure of power sharing or of quality of governance.

The downside of good governance, from the incumbents' standpoint, is that sharing power requires sharing rents: all individuals in power must receive the same payoff.[11] The choice of governance thus embeds a crucial trade-off between having a larger pie and taking a larger slice of a smaller one.

B. *Equilibrium*

The incumbents' problem can be seen as a choice of the isolation of the capital, ℓ, and the degree of power sharing, p, subject to the constraint imposed by (1). After substituting the constraint and manipulating, we get that an incumbent's income is equal to

$$\mathcal{R} = \frac{1}{p}\left[A(p)(Y^* - \phi(\Delta\ell)) - \frac{(1-p)\,y^*}{\chi}\left(\frac{\chi + T(1-\ell)}{\chi + T}\right)\right]. \tag{2}$$

In words, the term in square brackets is the amount of output net of what needs to be given as income to citizens in order to avoid a rebellion. That is divided among a measure p of incumbents.

The first-order conditions help to explain the trade-offs facing incumbents in this setting. Differentiating $\mathcal{R}$ with respect to ℓ and manipulating yields

$$\phi'(\Delta\ell) = \frac{(1-p)\,y^*\,T}{A(p)\,\chi(\chi + T)}. \tag{3}$$

In words, the marginal efficiency costs from isolating the capital $\phi'(\Delta\ell)$ equal to the marginal benefit of the extra protection bought by that isolation: a more isolated capital makes it cheaper to stave off rebellion, as citizens who are farther away represent a lesser threat and can thus receive a lower level of consumption. Taking first-order condition with respect to p and manipulating yields

$$A(p) - pA'(p) = \frac{y^*}{\chi\big(Y^* - \phi(\ell - \ell^*)\big)}\left(\frac{\chi + T(1-\ell)}{\chi + T}\right). \tag{4}$$

[11] This trade-off reflects the need to provide incentives for individuals in power to defend (and not rebel against) the current set of institutions. For a model, see Guimaraes and Sheedy (2017).

Adding an extra individual into the incumbent group raises output, but also implies that rents have to be shared more broadly. At the margin, these two effects must offset each other.

The expression for $\Delta\ell$ in (3) shows that isolation of the capital responds positively to T (the impact of distance on the cost of rebellion). Intuitively, a higher T increases the effectiveness of isolating the capital city as a protection device. Naturally, an increase in ℓ^* (the optimal degree of isolation) also leads to a larger ℓ. Last, $\Delta\ell$ also responds negatively to p, implying that bad governance increases the incentives for isolating the capital city. Intuitively, incumbents in this case are less worried about the costs of that isolation in terms of output losses, as these are smaller in a less productive economy.

The expression in (4) shows that p responds negatively to ℓ, ℓ^*, and T. Intuitively, when the capital city is more isolated or when the cost of conflict for those in faraway places is larger, the average citizen poses a smaller threat to the incumbent regime. Hence, the latter can grab a larger amount of output and is thus less willing to share rents in exchange for an increase in productivity.

These two effects combined yield a key result, summarized in Proposition 1: *isolated capital cities tend to be associated with worse quality of governance*. The above reasoning highlights that this result reflects causality going in both directions.

PROPOSITION 1: *Changes in T and ℓ^* induce a negative correlation between the quality of governance (p) and the degree of isolation of the capital city (ℓ).*

PROOF:

See online Appendix C.C1. ∎

We have assumed that the only way in which incumbents can deal with the threat of conflict is by changing the distribution of rents, sharing power, or increasing isolation. We can extend the model to also allow for the possibility of repression: incumbents can spend resources to increase their military power in order to make rebellions more costly. In online Appendix B.B1, we show that in this case a more isolated capital will be associated with less military spending: repression and isolated capitals are substitutes in protecting incumbents.

C. *Discussion*

Our framework, relying on the connection between the spatial distribution of population and the threat of rebellion, has a number of results linking capital cities, conflict, and quality of governance. First, the assumption that individuals located close to the capital possess an advantage in terms of the rebellion threat that they pose to incumbents implies that:

REMARK 1: *Conflict is more likely to emerge closer to the capital city.*

REMARK 2: *Conflict that emerges close to the capital is more dangerous to incumbents.*

This stands in contrast with alternative theories of conflict. For instance, to the extent that conflict is associated with low state repressive capacity (e.g., Fearon and Laitin 2003), and that the reach of weak states gets even weaker as one moves away from the capital city (Michalopoulos and Papaioannou 2014), one would have predicted that the onset of conflict would be more likely farther from the capital.

In addition, Proposition 1 implies the following:

REMARK 3: *Isolated capital cities are associated with misgovernance.*

Isolation increases the incentives for misgovernance because it allows incumbents to grab a bigger slice of the pie, thus reducing the willingness to share power and the associated rents. By the same token, misgovernance makes isolation more appealing because in a less productive economy the costs of excessive isolation are less important.

Since the model relies on insurrection threats as checks on the behavior of incumbent elites, we would expect the forces it identifies to be weaker when that check is relatively less important. In particular, this should be the case for established democracies: rebellion threats are unlikely to be a particularly meaningful constraint impinging on incumbents in the United States or Western Europe.

Similarly, our framework models conflicts as insurrections that aim at overthrowing an established government. As such, we should not expect the logic to hold in the case of conflicts driven by other objectives—say, where the incompatibility is around territory (e.g., separatist insurgencies) or in the typical interstate conflict. Hence, both democracies and conflicts that are not aimed at replacing an incumbent constitute "placebo" cases where we should not expect links between conflict, governance, and capital cities.[12]

The model also yields a negative association between the isolation of the capital city and direct defensive measures that incumbents may resort to. We interpret this as a negative correlation with military spending, insofar as the latter is often driven, to a substantial extent, by a concern with domestic rebellions.[13] Finally, the model also predicts that individuals living in the capital city will be relatively better off because of the greater political threat that they represent, and that this premium will be positively correlated with the isolation of the capital.

III. Capital Cities, Conflict, and Misgovernance: Empirical Evidence

We now turn our attention to the empirical evidence. We will start by assessing the link between capital cities and conflict, which is at the heart of the logic of our model, and then move on to the implications linking capital cities and the quality of governance.

[12] It is less clear that these other types of conflict constitute placebos for Remark 2 because interstate conflict or conflict in a democracy could also be more destabilizing if they happened close to the capital.

[13] This result stands in contrast with alternative stories where the isolation of the capital is just an indication that the country is divided into different (and possibly antagonistic) regions, since in this case, one would expect more investment in protection.

A. *Capital Cities and Conflict*

Data.—We start by describing more extensively the main variables needed to assess the relation between conflict and capital cities. (All other variables will be introduced as they are used and described in the online Data Appendix, which also contains descriptive statistics for all variables.)

Assessing how the likelihood and consequences of conflict relate to the distance to the capital city requires geo-located information on the incidence of conflict. For that, we use the PRIO-GRID dataset (Tollefsen, Strand, and Buhaug 2012) (Advanced Conflict Data Catalogue [ACDC] project). This dataset makes available a number of different variables measured at the level of 0.5×0.5 decimal degree cells covering all terrestrial areas of the world. Each cell is, on any given year, attributed to one single (independent) country—for cells that straddle country borders, the attribution is to whichever independent country happens to contain the largest share of the cell's territory.

The dataset contains a measure of distance (in kilometers) from the cell centroid to the country's capital, but the designation of capital cities did not generally track the instances of capital city moves—we added those manually (as described in Table 2). However, the dataset does cover changes in capital cities due to the breakup and emergence of new countries. We will use those sources of variation as an integral part of our identification strategy, as we discuss below.[14]

The dataset also records geo-located information on conflict. We use as our first main variable of interest the dummy *CivConf*, coded for the years between 1989 and 2008 (Hallberg 2012), which indicates whether a cell lies within an area afflicted by intrastate conflict in a particular year.[15] Specifically, the data classifies conflict types into: conflicts between a state and a non-state group outside its own territory ("colonial wars," coded as "1"), between two or more states (interstate conflicts, "2"), conflicts between a state and one or more non-state actors inside its own territory (intrastate conflicts, "3"), and intrastate conflicts with intervention from other states (internationalized intrastate conflicts, "4"). Our variable captures conflicts classified as "3" or "4," since intrastate conflict is the kind of event our framework is concerned with.

We also want to exploit distinctions between different types of conflicts, in order to build placebo specifications, as argued in the previous section, and shed further light

[14] We were careful not to include, as changes in capital cities, the instances in which a given cell is reassigned to a different country simply as a result of the latter becoming independent with no actual breakup or annexation involved. For instance, suppose a cell happens to be on the border between Ghana and Côte d'Ivoire with 40 percent of its territory on the former and 60 percent on the latter. The dataset would attribute that cell to Ghana between 1957 (when that country became independent) and 1960 (when Côte d'Ivoire did) because Côte d'Ivoire was then coded as missing. From 1960 onward, it would attribute the cell to Côte d'Ivoire. In that case, we attributed the cell to Côte d'Ivoire for all years.

[15] It is important to note that the geo-location of conflict is not based on specific conflict events. Instead, the database considers a conflict's zone of influence—defined taking into account locations of reported armed encounters between the parties, territories occupied by the rebel side, and locations of rebel bases—and codes a grid cell as being part of that conflict if it overlaps with the smallest circle that circumscribes that zone (Hallberg 2012, 221–22). If we are to think in terms of specific conflict events, the noise in measurement is thus much more likely to involve a type-I error (i.e., coding an area as having conflict when no specific conflict events happened there) than a type-II error. To the extent that measurement error would be a bigger issue farther from the capital, which is likely to be the case as news sources become sparser, this would tend to bias results against our findings.

on the nature of the connections between distance and conflict. The first placebo is to use interstate conflict (type "2"). For other distinctions, we match the Prio-GRID data to the original conflict dataset from which it derives—namely, the UCDP/PRIO Armed Conflict Dataset (Gleditsch et al 2002, Themnér and Wallensteen 2014)—which classifies the incompatibility motivating each conflict. In particular, it distinguishes between conflicts driven by disputes over the status of a territory, which in the case of intrastate conflicts is typically about secession or autonomy, and those driven by disputes over the type of political system, the replacement of the central government, or the change of its composition. We will henceforth refer to these as "territorial" and "government" conflicts and take the former to be a placebo case.

We will also look into differences in terms of conflict intensity. The UCDP/PRIO data define conflict as requiring a minimum of 25 battle-related deaths in a given year, but it distinguishes between "war" (at least 1,000 battle-related deaths) and "minor armed conflict" for the range between 25 and 1,000. It would be reasonable to assume that measurement error related to underreporting would be less prevalent in full-scale wars, so this provides us another window into the issue.

We will consider a second key conflict variable from the PRIO-GRID dataset, namely *Onset* (Gleditsch et al 2002, Strand 2006). This variable indicates for every cell-year pair whether a conflict started in that cell-year. It has the advantage of affording a longer time period, as it is coded for the years between 1946 and 2004, which will let us exploit the time variation more thoroughly. On the other hand, it refers to occurrences that are obviously a lot less frequent, which makes the data relatively sparse.

Conflict Is More Likely Closer to the Capital.—We first consider the evidence taking grid cells as the unit of analysis. More precisely, we estimate the following specification:

$$Y_{ic} = \gamma_0 + \gamma_1 \times LogDistCapital_{ic} + \mathbf{X}_{ic}\mathbf{\Gamma} + \mu_c + \varepsilon_{ic}, \tag{5}$$

where Y_{ic} is a measure of conflict in grid cell i in country c. Note that we leave aside the time variation in the conflict variables, for the moment, to focus on the average probability of conflict in a cell, taken over the entire available period—namely, 1989–2008 for the occurrence of conflict (*CivConf*) and 1946–2005 for conflict onset (*Onset*). The variable *LogDistCapital* stands for the log of distance from the grid cell to the capital city, and Result 1 is encapsulated in $\gamma_1 < 0$: the likelihood of conflict is smaller in cells that are farther from the capital. The term $\mathbf{X}_{ic}$ is a vector of control variables (also from the PRIO-GRID dataset), which help us deal with a number of factors that may correlate with the likelihood of conflict: income per capita, population, and infant mortality as measures of socioeconomic conditions, travel time to the nearest major city as a measure of broad isolation as well as urbanization, and a number of geographic characteristics (share of mountainous terrain and forest coverage, latitude, average temperature, and precipitation).[16] Finally, μ_c are country

[16] All of these variables are also averaged over the relevant period.

TABLE 3—DISTANCE TO THE CAPITAL AND CONFLICT

Dependent variable	Average probability of conflict (*CivConf*)				Average probability of conflict onset (*Onset*)			
Sample	Full (1)	Polity ≤ 0 (2)	Polity ≤ 0 (3)	Polity > 0 (4)	Full (5)	Polity ≤ 0 (6)	Polity ≤ 0 (7)	Polity > 0 (8)
log distance to capital	−0.00138	−0.0266		0.00947	−0.000112	−0.000163		−5.45e-05
	[0.00952]	[0.0107]		[0.0143]	[5.15e-05]	[8.00e-05]		[3.70e-05]
log distance to largest non-capital city	0.00325	0.00988	0.00590	−0.00495	8.81e-05	8.52e-05	6.79e-06	7.86e-05
	[0.00568]	[0.00707]	[0.00692]	[0.00969]	[4.05e-05]	[5.86e-05]	[3.47e-05]	[4.42e-05]
Full set controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	54,177	14,676	14,676	39,501	53,319	32,116	32,116	21,203
R^2	0.828	0.869	0.865	0.793	0.045	0.046	0.044	0.046

Notes: Robust standard errors in brackets are clustered at the country level. Each observation represents a grid cell's averages over time. Each column's sample is determined by the average of the Polity score over the period where conflict data are available. Columns 1 to 4 use the indicator of ongoing conflicts in each cell, averaged from 1989 to 2008 where conflict data are available. Columns 5 to 8 use the indicator of conflict onsets (the start of a new conflict) in each cell, averaged from 1946 to 2008 where conflict onset data are available. All columns include the averages over the corresponding period of the following variables for each cell: log gross cell products per capita (night luminosity-enhanced measures, available in 1990, 1995, 2000, and 2005), log population (available in 1990, 1995, 2000, and 2005), temperature, precipitation, and cell size. In addition, all columns control for: log distance to the largest non-capital city, infant mortality rates, proportion of mountain area (all measured in 2000), log travel time to the nearest urban area, and cell latitude. Country fixed effects are included. Chi-squared test statistics of coefficient differences (from seemingly unrelated regressions) between columns 2 and 4 and between columns 6 and 8 are respectively 4.14 (p-value $= 0.04$) and 1.54 (p-value $= 0.21$).

fixed effects, so that we focus on the variation within countries, and ε_{ic} is the error term. We cluster standard errors at the country level to allow for correlated shocks within countries.

The results are in Table 3. Column 1 shows the correlation between average *CivConf* and the measure of distance to the capital city for the full sample. We see no evidence of a link. However, column 2 shows that countries with an average Polity score below (or equal to) zero—a threshold meant to encompass "autocracies" and "closed anocracies" as defined by the Polity IV dataset—display a strong negative correlation: conflict is more likely in areas that are closer to the capital. In all cases, we control for the distance to the largest (noncapital) city to address the concern that our results could be picking up an effect of isolation from large centers, as opposed to anything specific related to capital cities. The coefficient on that variable is relatively small and statistically insignificant, and column 3 further shows that it remains so if we look at it on its own.

This result is consistent with Result 1 from the model. Moreover, the placebo specification in column 4 shows that the relationship is absent in the sample of relatively democratic countries, as we would expect: the result holds only for countries where our logic of insurrections as a check on incumbent behavior ought to be more important. Quantitatively, our estimate of -0.0266 implies that halving the distance to the capital city would increase conflict probability by 1.8 percentage points $(= \log(2) \times 0.0266)$ or about 14.5 percent of 12.7 percentage points, the average probability of conflict per cell in this subsample. (The standard deviation

of log distance to the capital in this subsample is 0.87, corresponding to a change of distance by a factor of 2.39.)

The remainder of Table 3 considers conflict onset (*Onset*) as the dependent variable and shows a similar pattern distinguishing autocracies and democracies. Note that now a correlation emerges even for the full sample (column 5). This is because the number of countries coded as autocracies is much larger for the period 1946–2005 than for the period 1989–2008 for which the *CivConf* variable is computed. Still, the pattern once again seems different between autocracies and democracies, as the correlation holds only for the former.[17] In addition, there is again no effect when using the distance to the largest (noncapital) city. Quantitatively, the estimate of −0.000163 implies that, in autocracies, halving the distance to the capital city would increase the chances of conflict onset by 0.000113 or 1.38 times the mean of *Onset* in this sample.

The message comes into clearer focus when we break down the analysis according to the different kinds of conflict. This is what we see in Table 4, where the focus is on the sample of autocracies and closed anocracies. Panel A focuses on the probability of conflict (*CivConf*), whereas panel B reproduces the same results using conflict onset (*Onset*), with broadly similar results. Columns 1 and 2 show that the link between conflict and distance to the capital is entirely driven by the government type: territorial conflicts display no significant link whatsoever with a coefficient that is much smaller in absolute value. This is again exactly in line with what we would expect from our framework.

Columns 3 and 4 break intrastate conflicts along a different dimension: strictly intrastate wars (coded as "3" in PRIO-GRID) and internationalized intrastate wars (coded as "4"), respectively. We see that the result is driven entirely by the standard intrastate variety. Columns 5–6 in turn show that the result is present both in relatively minor conflicts and full-scale wars, in which the issue of measurement error should be less important. Last but not least, column 7 shows that there is no relationship between distance to the capital and interstate conflict. In sum, our placebo specifications confirm that conflict is more likely closer to the capital only in the types of conflict that better fit the logic of our framework.

One concern is that the pattern in Table 3 could be affected by measurement error, if conflict episodes that take place farther away from the capital are less likely to be noticed and recorded. Since measurement error should be less common in highly intense conflicts, the result in column 5 of Table 4 suggests that this is not the main driver of the relationship between conflict and the distance to the capital. This is also underscored by the placebo results of insignificant coefficients found in columns 2, 4, and 7.

To further investigate this alternative explanation, we note that the key determinant of potentially unrecorded battles and conflicts should be population density: conflict ought to be easily observed and recorded in densely populated areas. Based on this logic, we examine the relationship between distance to capital and conflict as

[17] Note, however, that the small number of episodes of conflict onset in countries coded as democratic, given the stringency of the criterion over the 1946–2005 period, means that we do not have enough precision to tell the coefficients apart statistically.

TABLE 4—DISTANCE TO THE CAPITAL AND DIFFERENT TYPES OF CONFLICT

Sample	Polity ≤ 0						
Dependent variable of *conflict* type	Government	Territory	Strictly intrastate	Intrastate expanded	Intense	Less intense	Interstate
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A. Conflicts (*CivConf*)							
log distance to capital	−0.020	−0.00784	−0.0247	−0.00185	−0.0101	−0.0178	0.000683
	[0.00940]	[0.00590]	[0.00904]	[0.00297]	[0.00543]	[0.00834]	[0.000732]
Full set controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	14,676	14,676	14,676	14,676	14,676	14,676	14,676
R^2	0.849	0.893	0.850	0.928	0.866	0.863	0.680
Sample	Polity ≤ 0						
Dependent variable of *onset* type	Government	Territory	Strictly intrastate	Intrastate expanded	Intense	Less intense	Interstate
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel B. Conflict onsets (*Onsets*)							
log distance to capital	−0.000166	−3.88e-05	−0.000137	−2.69e-05	−7.47e-05	−0.000117	−3.88e-06
	[7.46e-05]	[4.55e-05]	[6.82e-05]	[2.81e-05]	[4.02e-05]	[6.05e-05]	[3.91e-06]
Full set controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	32,116	32,116	32,116	32,116	32,116	32,116	32,116
R^2	0.058	0.024	0.049	0.023	0.017	0.051	0.011

Notes: Robust standard errors in brackets are clustered at the country level. Panel A considers ongoing *conflicts* of different types from 1989 to 2008, and panel B considers *onsets* of different types of conflicts from 1946 to 2005. Each observation represents a grid cell's averages over the corresponding period. The sample is restricted to the nonpositive average of the Polity score over the period where the corresponding measure of conflicts or conflict onsets are available. The dependent variable is the indicator of ongoing conflicts, or onsets, of a particular conflict type in each cell. Columns 1 and 2 distinguish between conflicts arising from the incompatibility of government versus territory. Columns 3 and 4 distinguish between strictly intrastate conflicts and other intrastate conflicts in which other state(s) later intervene(s). Columns 5 and 6 distinguish between conflicts of at least 1,000 estimated casualties and the less intense ones. Column 7 uses interstate conflicts only. All columns include the averages over the corresponding period of the following variables for each cell: log gross cell products per capita (night luminosity-enhanced measures, available in 1990, 1995, 2000, and 2005), log population (available in 1990, 1995, 2000, and 2005), temperature, precipitation, and cell size. In addition, all columns control for: infant mortality rates, proportion of mountain area (all measured in 2000), log distance to the largest non-capital city, log travel time to the nearest urban area, and cell latitude. Country fixed effects are included.

a nonparametric function of population density ($LogDens$) in an augmented version of equation (5): $Y_{ic} = \gamma_0(LogDens_{ic}) + \gamma_1(LogDens_{ic}) \times LogDistCapital_{ic} + \mathbf{X}_{ic}\boldsymbol{\Gamma}(LogDens_{ic}) + \mu_c + \varepsilon_{ic}$. The function $\gamma_1(LogDens_{ic}) = \partial Y_{ic}/\partial LogDistCapital_{ic}$ is estimated in local linear regressions of this equation by different values of $LogDens$ and plotted in Figure 1. The effect is strong and significant across the broad range of population density, even for the most densely populated areas where measurement error should not be much of an issue with estimates close to the one found in column 2 of Table 3.[18] Measurement error is thus unlikely to account for our key results.[19]

[18] We use the Epanechnikov kernel with a bandwidth of 0.5 times the range of x. The observed pattern is similar across a broad range of cross-validated bandwidths and different kernels (see Li and Racine 2006, ch. 2).

[19] Measurement error may still partly explain the effect found among less populated areas in Figure 1. However, this explanation is at odds with our similarly estimated effects of distance to the capital on conflict onsets, whose

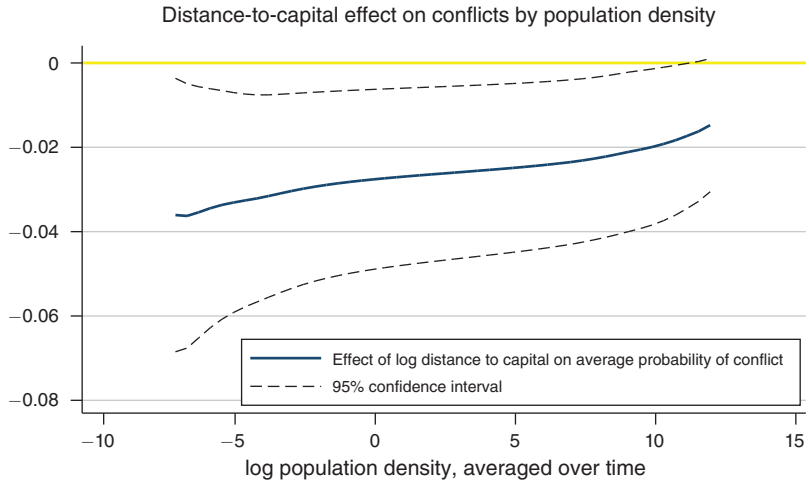

Figure 1. Effect of log Distance to Capital on Conflicts as a Function of log Population Density

Conflict Becomes More Likely When the Capital Is Moved Closer.—A different look at the link between distance to the capital and conflict comes from exploiting the variation over time in the conflict data. Generally speaking, distance to the capital is constant for a given grid cell, but there are two important kinds of exception to this rule, which afford us some variation over time. First, when the same grid cell becomes part of a different country, the relevant capital city changes as a result. Second, the same is true when a given country changes its capital. To the extent that these events are uncorrelated with time-variant grid-cell characteristics, we can consider the effects of those quasi-random "treatments" of changing distance to the capital.

To better understand the nature of the variation, Table 5 lists the countries containing grid cells where distance to the capital is not a constant value over the years in our dataset. We see four distinct groups of countries. First, the former Soviet Union and Yugoslavia illustrate the two major episodes of country breakups. A third group of countries comprises those that moved their capital cities over the period of analysis. The remainder (Other) is a mixture of country breakups, reunifications, and changing borders. In the online Appendix, we show that the results that follow remain qualitatively unaffected when we drop each of these groups at a time. (Of note, the estimated coefficient also remains essentially unchanged if we instead focus exclusively on the small subsample of countries that moved capital cities, though standard errors are much larger.) This reassures us that our findings are not driven by the specificities of each subgroup.

nonparametric graph is shown in the online Appendix. The effect on conflict onset is present and strong only in more densely populated areas.

Table 5—Understanding the Sources of Variation: Countries Containing Grid Cells with Changing Distance to the Capital

Soviet Union (1)	Yugoslavia (2)	Changes in capital cities (3)	Other (4)
Armenia	Bosnia and Herzegovina	Brazil	Bangladesh
Azerbaijan	Croatia	China	Czechoslovakia
Belarus	Kosovo	Cote d'Ivoire	Egypt
Estonia	FYR Macedonia	Germany[a]	Eritrea
Georgia	Montenegro	Kazakhstan[a]	Ethiopia
Kazakhstan[a]	Slovenia	Myanmar	Germany[a]
Kyrgyzstan	Yugoslavia	Malawi	Israel
Latvia		Nigeria	Namibia
Lithuania		Pakistan[a]	Pakistan[a]
Moldova		Tanzania	Romania
Russia			South Vietnam
Tajikistan			South Yemen
Turkmenistan			Slovakia
Ukraine			Syria
Uzbekistan			Vietnam
			Yemen

Notes: To construct this table, we first flag the grid cells for which the measure of distance to the capital is not the same for all years in the sample. We then tabulate the countries to which at least one of these grid cells was assigned, considering all years. For instance, a cell in the Sinai Peninsula is attributed to Israel (between 1967 and 1979) and Egypt (other years).

[a] Germany, Kazakhstan, and Pakistan all experienced one change of capital and one breakup/reunification.

We thus implement specifications with grid-cell fixed effects, focusing on conflict onset because of the longer time dimension in the panel.[20] Specifically, we estimate

$$Y_{ict} = \lambda_0 + \lambda_1 \times LogDistCapital_{ict} + \mathbf{W}_{ict}\mathbf{\Lambda} + \nu_i + \omega_t + \varepsilon_{ict}, \tag{6}$$

where t now indexes a given year. Our specifications will also include year fixed effects, which should account for factors that affect all countries in a given period, such as the end of the Cold War, and we again cluster the standard errors at the country level. Any time-invariant characteristics are picked up by the grid-cell fixed effects ν_i, so our vector of control variables $\mathbf{W}_{ict}$ now includes time-variant factors available on a yearly basis: (log) distance to border, temperature, and precipitation. This helps us control for climate shocks, which have been flagged as relevant in the conflict literature (Miguel, Satyanath, and Sergenti 2004; Burke et al. 2009; Brückner and Ciccone 2011; Couttenier and Soubeyran 2014).

[20] When it comes to the average probability of conflict, *CivConf*, we are left with little of the relevant variation: starting the sample in 1989 leaves out the vast majority of premove observations—not only for the ex-USSR and ex-Yugoslavia, but for a number of countries in the other two categories in Table 5 as well. Not surprisingly, the results are entirely inconclusive (available upon request).

Table 6—Changes in Distance to the Capital and Conflict: Within-Cell Regressions

Sample	Polity $\leq$ 0, 1946–2005						Polity $>$ 0, 1946–2005	Polity $\leq$ 0, $[-5,+5]$ of cap. change	
Dependent variable of *onset* type	All intrastate	Government	Territory	Strictly intrastate	Intrastate expanded	Interstate	All intrastate	Government	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
log distance to capital	−0.000353 [0.000154]	−0.000267 [0.000122]	−0.000139 [8.93e-05]	−0.000289 [0.000144]	−6.40e-05 [3.77e-05]	1.02e-06 [1.12e-06]	2.96e-05 [1.13e-05]	−0.000589 [0.000290]	−0.000475 [0.000283]
Full set controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cell FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Extra control									Yes
Observations	1,914,640	1,914,640	1,914,640	1,914,640	1,914,640	1,914,640	1,467,596	88,215	88,215
R^2	0.037	0.032	0.040	0.037	0.024	0.026	0.030	0.120	0.120

Notes: Robust standard errors in brackets are clustered at the country level. Each observation represents a grid cell $\times$ year. Each column's sample is determined by the average of the Polity score over the period 1946–2005, where conflict onset data are available. The dependent variable is the indicator of conflict onsets of conflicts of a particular type in each cell. Column 1 uses all intrastate conflicts. Columns 2 and 3 distinguish between conflicts arising from the incompatibility of government versus territory. Columns 4 and 5 distinguish between strictly intrastate conflicts and other intrastate conflicts in which other state(s) later intervene(s). Column 6 uses interstate conflicts only. Column 7 considers all countries with the positive average Polity score. Columns 8 and 9 consider cells that have experienced a change of the relevant capital city and restrict the sample to within five years of the capital city change. Grid-cell fixed effects and year fixed effects are included. Control variables include log distance to the border, temperature, and precipitation. Column 9 further controls for full interactions of the average log distance from all cells in a country $\times$ pre/post-capital change dummy.

Table 6 presents the results, distinguishing between the different kinds of conflict explored in Table 4. Column 1 shows that the onset of intrastate conflict becomes less likely in the nondemocratic subsample when the capital is moved farther away from a grid cell. Quantitatively, the estimate of -0.000353 among nondemocratic countries implies that halving the distance to the capital city would increase conflict onset probability by 0.000245, about twice the magnitude we found in the cross-sectional analysis in Table 3.

Columns 2–6 then show that the connection between distance and conflict onset is driven by government, purely intrastate conflicts: it is statistically insignificant and/or quantitatively very small in territorial intrastate, internationalized intrastate, and interstate conflicts.[21] In addition, the subsample of relatively democratic countries displays a coefficient that is positive and quantitatively rather small (column 7). This is again reassuring that the mechanism is consistent with the logic we emphasize.

The panel specification does have drawbacks. First, the variation is coming from a small set of countries, which makes it more remarkable that we find robust results, but also raises natural questions about external validity. Second, we have a reduced set of available time-varying control variables. For instance, we cannot control for population, since the data are available only for a small subset of years, and as such, the effect we find in Table 6 could be partly driven by population being drawn to a certain area once it becomes closer to the capital city.

[21] Results for subsets of more/less intense conflicts are similar and omitted due to space constraints. They are available upon request.

One way to assuage these concerns is to restrict our attention to a relatively short window around the changes in borders or capital city. If the results were driven by changes in cell characteristics such as population or GDP per capita that follow such an event, one might expect that it should take a reasonably long period for these changes to translate into the onset of conflict. Column 8 thus restricts the sample to within five years before and after the change in distance to the capital. The association between the onset of government conflicts and distance to the capital is actually even stronger within this short window, suggesting that the effect does not come from relatively slow-changing factors such as population size.

In addition, one might speculate that changes in capital cities, not being random events, could correlate systematically with conflict. For instance, it could be that conflict becomes more likely after a breakup episode, and it stands to reason that the average distance to the capital would fall as a country splits into smaller ones, which could bias the results toward finding support for our model. We would argue that this is unlikely to drive the results: it seems more natural to think that the conflicts surrounding partition would be more likely to be categorized as interstate (or "internationalized" intrastate) or at least territorial conflicts. This is hard to square off with the fact that our results are strongest for conflicts around government. Similarly, when it comes to moving the capital city, it seems natural that a ruler's incentives would most likely be toward moving the capital to places where conflict would be intrinsically less, not more, likely.

To deal with this concern more directly, we estimate the following alternative specification:

$$(7)\quad Y_{ict} = \lambda_0 + \lambda_1 \times LogDistCapital_{ict} + \lambda_2 \times \overline{LogDistCapital}_{ct} \times PostChange_{it} + \lambda_3 \times PostChange_{it} + \mathbf{W}_{ict}\boldsymbol{\Lambda} + \nu_i + \omega_t + \varepsilon_{ict},$$

where $\overline{LogDistCapital}_{ct}$ is the average distance to the capital among all cells in country c in year t, and $PostChange_{it}$ is a dummy equal to one if t is any year after a change in the distance between cell i and the capital city. This controls for a break in the relationship between distance and conflict following a change in the capital. Column 9 displays the result: we again see a significant effect of larger magnitude, albeit less precisely estimated.

Finally, it is reassuring that the results we find here are in line with what we had obtained using the cross-sectional variation in Tables 3 and 4. In addition, and as before, it also seems unlikely that whatever biases may be in play would generate results only in the types of conflict that pertain to our story. In sum, while the appropriate caveats lead us to refrain from attaching a causal interpretation to any of our estimates, the body of evidence suggests that our mechanism is qualitatively and quantitatively important in understanding the spatial distribution of conflict.

Conflict Is More Dangerous Closer to the Capital.—We then turn to Remark 2, namely that conflict that happens closer to the capital is more likely to dislodge the incumbent regime. For that, we adapt our panel strategy, as in (6), using the

Table 7—Conflict Onset and Regime Change

Sample	Polity ≤ 0					
Dependent variable: *RegimeChange* within five years	Indicator	Indicator	Indicator	Average	Indicator	Indicator
	(1)	(2)	(3)	(4)	(5)	(6)
Type of conflict onset	Government	Government	Government	Government	Intense	Territory
Onset × log distance to capital	−0.321	−0.375	−0.463	−0.129	−0.321	0.0611
	[0.0598]	[0.0340]	[0.0701]	[0.0108]	[0.0597]	[0.361]
Full set controls	Yes	Yes	Yes	Yes	Yes	Yes
(Cell × *Onset*) FEs	Yes	Yes	Yes	Yes	Yes	Yes
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Additional controls		Country-specific time trends	(Cell × *Onset* × country) FEs			
Observations	1,913,481	1,913,481	1,913,481	1,913,481	1,913,481	1,913,481
R^2	0.292	0.404	0.302	0.363	0.292	0.292

Notes: Robust standard errors in brackets are clustered at the country level. Each observation represents a grid cell × year over the period from 1946 to 2005 where conflict onset data are available. The sample is restricted to countries with the nonpositive averaged Polity score. In columns 1, 2, 3, 5, and 6, the dependent variable is the indicator of *RegimeChange* within five years associated with the cell, while column 4 uses the average of *RegimeChange* within five years. All columns control for fixed effects at the level of cells interacted with the onset dummy (see text for interpretation), year fixed effects, log distance to capital, and log distance to the border, temperature, and precipitation. In addition, column 2 controls for country fixed effects interacted with time trends, and column 3 controls for fixed effects at the level of cells interacted with countries interacted with the onset dummy. Columns 1 to 4 use conflicts arising from the incompatibility of government. Column 5 uses intense conflicts, namely those of at least 1,000 estimated casualties. Column 6 uses conflicts arising from the incompatibility of territory.

following specification, connecting the country-level *RegimeChange* outcome and the grid-cell-level data on conflict and distance:[22]

$$(8)\quad RegimeChange_{ct} = \beta_0 + \beta_1 \times Y_{ict} \times DistCapital_{ict} + \beta_{2i} \times Y_{ict} + \beta_3 \times DistCapital_{ict} + \mathbf{W}_{ict}\boldsymbol{\Lambda} + \nu_i + \omega_t + \varepsilon_{ict},$$

where $RegimeChange_{ct}$ is an indicator of whether there is a change in regime in country c, as coded in the Polity IV dataset, in the five-year interval after year t.[23] Result 2 entails $\beta_1 < 0$: as a grid cell becomes more distant from the capital, the connection between conflict in that cell and subsequent *RegimeChange* gets weaker.

The specification includes interactions of cell-specific coefficients (β_{2i}) with the conflict variable (Y_{ict}) to control for any observed or unobserved time-variant cell characteristics that could govern how conflict in that cell may affect regime change.[24] The identification of β_1 thus comes, again, from changes in borders and capital cities. We again focus on *Onset* as the key conflict variable in order to maximize the relevant variation and cluster the standard errors at the country level, which

[22] This is similar to Iyigun, Nunn, and Qian (2017), who consider state size as an aggregate-level variable and how it relates with grid-cell-level data on conflict and agricultural productivity.

[23] Specifically, as described in greater detail in the online Data Appendix, we use the variable "Regime Transition," which is coded as a significant (at least three-point) change in the polity's democracy or autocracy score. The idea is to capture more profound changes in the political system as distinct from, say, changes in the identity or party of the leader.

[24] This specification is equivalent to one with group fixed effects with groups defined by the cell interacted with the conflict status.

is particularly relevant since the variation on the outcome variable occurs at that level.

Table 7 shows the results, focusing on the sample of nondemocracies. The evidence is again in accordance with the model. Column 1 shows that, if the capital is moved farther away from a grid cell, the link between the onset of conflict related to government, in that grid cell, and the likelihood of subsequent *RegimeChange* in the country gets weaker. This is true even if we control for country-specific time trends (column 2) or the interaction of *Onset* with cell-country fixed effects (instead of cell fixed effects) (column 3), which leaves aside the variation coming from cells that change countries. The result is also similar if we measure *RegimeChange* not with an indicator but with the average over the subsequent five-year period (column 4) or if we focus our attention on intense conflict (column 5).

As we have noted, it is less obvious that all of our aforementioned placebos would be meaningful in this case—it is plausible that interstate conflict, for instance, could also be destabilizing for an incumbent regime and more so if it happens to emerge close to the capital. Still, it is interesting to see that conflicts over territory do not display the same pattern (column 6).

This specific result is important, especially since the spatial distribution of conflict is clearly endogenous. In particular, reverse causality is a concern: it could be the case that the very fact that a regime is wobbling would lead to more conflict arising closer to the capital. In the absence of a source of exogenous variation, it is reassuring that we find no significant link between *RegimeChange*, distance, and territorial conflict.[25] After all, it stands to reason that reverse causality should affect that type of conflict as well.

In sum, although we again refrain from any causal interpretation for our estimates, the evidence suggests that the danger posed by conflict to incumbent regimes, in nondemocratic countries, is weaker the farther away the capital city is moved from where that conflict emerges, in line with Result 2.

B. *Capital Cities and Quality of Governance*

Data.—In order to measure quality of governance across countries, we resort to the well-known and widely used Worldwide Governance Indicators (WGI) from the World Bank (Kaufmann, Kraay, and Mastruzzi 2010). They aggregate information from a number of different sources ranging from surveys of households and firms to assessments from NGOs, commercial providers, and public organizations into six different measures: Rule of Law, Voice and Accountability, Government Effectiveness, Regulatory Quality, Control of Corruption, and Political Stability. Since the year-to-year variation in the quality of governance measures is not very meaningful, we will average them over time for the entire period for which the WGI are available (1996–2012, biannually until 2002). To make things as simple as possible, and making use of the fact that these individual measures are very highly

[25] We have experimented with weather and climate shocks as possible instruments to deal with that reverse causality, although these would not assuage all concerns with omitted variables. In any case, the first stage fails to work: climate shocks do not predict conflict onset in this context, consistent with Couttenier and Soubeyran (2014).

correlated with one another, we will summarize them in a single number, using the first principal component of the six measures taken together.[26]

When it comes to measuring how isolated a capital city is, we use the axiomatically grounded family of measures of spatial concentration (or equivalently, isolation) around a point of interest proposed in Campante and Do (2009). Specifically, they show that a very simple and easily interpretable measure of isolation has a number of desirable properties (and uniquely so): the average log distance to the capital city—which for shorthand, we will describe as *AvgLogDistance*.[27]

We compute the measure using the database *Gridded Population of the World* (GPW), Version 3 from the Socio-Economic Data Center (SEDC) at Columbia University. This dataset, published in 2005, contains the information for the years 1990, 1995, and 2000 and is arguably the most detailed world population map available. Over the course of more than 10 years, these data are gathered from national censuses and transformed into a global grid of 2.5 arc-minute side cells (approximately 5 km or 3 miles) with data on population for each of the cells in this grid. As it turns out, the autocorrelation in the measure of population concentration is very high across the ten-year period in question. For this reason, we choose to focus on *AvgLogDistance* as computed for the one year, 1990, that is judged by the SEDC as having the highest data quality. [28]

We focus on a measure of distance that adjusts for the geographical size of the country to allow for the possibility that a given distance could mean different things in countries that are geographically small or large: 100 miles could be seen as a long distance in Belgium, but not so much in Canada. That said, we will also look at a version that does not adjust for geographical size, for the sake of robustness.

Isolated Capital Cities and Misgovernance.—The raw data, as displayed in Figure 2, show a negative correlation between the first principal component of the six WGI governance measures and *AvgLogDistance*, our benchmark measure of isolation. For more systematic evidence, we consider the following regression specification:

$$Y_c = \gamma_0 + \gamma_1 \times AvgLogDistance_c + \mathbf{X}_c\mathbf{\Gamma} + \varepsilon_c, \tag{9}$$

where Y_c stands for the measure of quality of governance, and $\mathbf{X}_c$ is a vector of control variables that are often associated with governance—ranging from GDP per capita, urbanization, and population, to ethnic fractionalization and characteristics of

[26] The correlation between the different average measures in our sample of 178 countries is never below 0.73, and typically far above 0.8. The Kaiser-Meyer-Olkin overall measure of sampling adequacy is 0.896, indicating that a principal components analysis is warranted.

[27] See Campante and Do (2009, 2014) for a more extensive discussion. A description of the index as we actually compute it in practice, given the data we have, can be found in the online Data Appendix. An important practical issue refers to how we deal with countries that have multiple capitals. The online Data Appendix documents how we deal with these issues, but in any case, the results are unaffected by any of these choices.

[28] We limit our analysis to countries with more than one million inhabitants, since most of the examples with extremely high levels of concentration come from small countries and islands. In addition, all of our analysis will exclude Mauritius because it is an outlier in terms of the concentration of population. As it turns out, our results are made stronger by its inclusion, so we want to make sure that nothing is driven by this specific case.

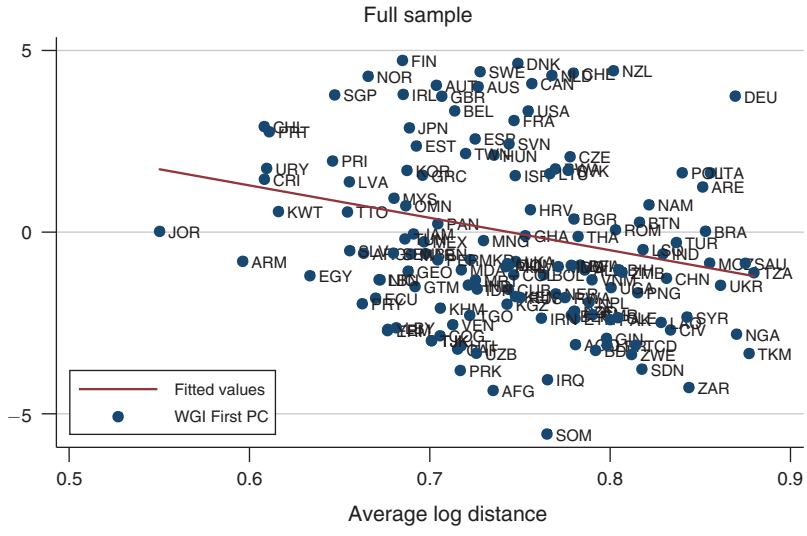

FIGURE 2. GOVERNANCE AND ISOLATION OF THE CAPITAL CITY

TABLE 8—ISOLATED CAPITAL CITIES AND MISGOVERNANCE

	Full sample		Autocracies		Establ. democracies		Full sample	
Dependent variable: WGI PC	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
AvgLogDistance	−0.1610	−0.1430	−0.2670	−0.3219	−0.0585	−0.0095	−0.0592	−0.0584
	[0.057]	[0.054]	[0.066]	[0.049]	[0.121]	[0.137]	[0.064]	[0.064]
AvgLogDistance × autocracy							−0.2316	−0.2420
							[0.081]	[0.082]
Basic set of controls	–		–		–		–	
Full set of controls		–		–		–		–
Selection-corrected bound	−0.137	−0.124	−0.260	−0.338			−0.207	−0.235
Observations	127	127	36	36	31	31	127	127
R^2	0.823	0.830	0.829	0.884	0.898	0.916	0.869	0.870

Notes: Robust standard errors are in brackets. The *z*-scores (normalized variables) are reported. WGI PC: First Principal Component of Worldwide Governance Indicators measures (rule of law, voice and accountability, government effectiveness, regulatory quality, control of corruption, and political stability) are shown. For autocracies, Polity ≤ 0; for established democracies, Polity > 9. Basic control variables include log GDP per capita, log population, urbanization, and region and legal origin dummies. Full set of controls adds majoritarian and presidential system dummies, and ethnic fractionalization. Columns 7–8 also include the autocracy dummy as the control variable. Conservative bounds of effects are calculated following Oster (forthcoming) and Altonji et al. (2005) in assuming equal selection on observables and selection on unobservables. Also, χ^2 test statistics of coefficient differences (from seemingly unrelated regressions) between columns 3 and 5 and between columns 4 and 6 are respectively 3.21 (p-value $= 0.07$) and 9.46 (p-value $= 0.00$).

the political system (such as the presence of majoritarian elections or of a presidential system), as well as regional and legal origin dummies.[29] (All control variables

[29] Our results are also robust to including educational achievement as a control variable, as measured by the total years of schooling in 1995 (from the Barro-Lee dataset). We choose not to include it in our main specifications

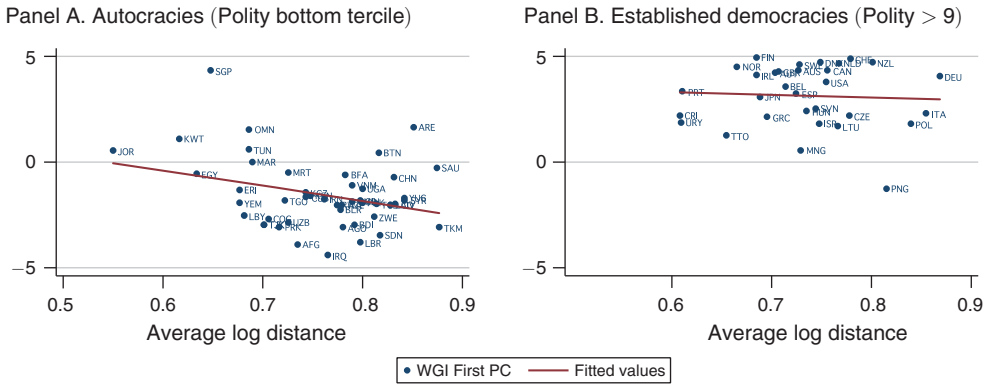

FIGURE 3. GOVERNANCE AND ISOLATION OF THE CAPITAL CITY: AUTOCRACIES VERSUS ESTABLISHED DEMOCRACIES

in our analysis are averaged over the same period for which the governance measure is calculated, 1996–2006, unless noted otherwise.)

The results are in Table 8. (All tables henceforth report coefficients estimated for the standardized variables, so that they should be interpreted in terms of standard deviations, as computed for the full sample.) Columns 1–2 confirm the message from the raw correlation. The correlation is statistically significant, and robust to the inclusion of the vector $\mathbf{X}_c$ of control variables.

As it turns out, this broad pattern again masks differences between democracies and nondemocracies, as suggested by the theory. To see this, we can again focus on the threshold of a Polity score equal to zero, which here translates roughly into the bottom tercile of our sample, and compare it with the set of full-fledged, established democracies, as defined by a Polity score above 9. Figure 3 shows the scatterplots for the two subsamples: there is essentially no correlation in the group of established democracies, whereas a negative association emerges in the sample of autocracies.[30]

This central message is underscored by the systematic evidence in the remainder of Table 8. Columns 3–4 show that the negative correlation between isolated capitals and the quality of governance is indeed particularly pronounced in the nondemocratic countries in spite of the relatively small sample size. This pattern is in stark contrast with columns 5–6, which show that the correlation is essentially nonexistent in countries with established democracies. In fact, in spite of the relatively high standard errors, especially in the sample of democracies, we can specifically reject the hypothesis of equality of coefficients on the concentration of population around the capital across the two subsamples (p-value $= 0.0018$). Last but not least, columns 7–8 show that the same message is conveyed by the

because it is very highly correlated with income per capita (around 0.75 in the full sample) and ends up being statistically insignificant in all specifications. The results are also unaltered if we control directly for population density, which we do not do in the main specifications because we already include a control for population and the adjustment for country size implicit in our measure of concentration. Last but not least, the results are robust to including a comprehensive set of geographical and historical control variables, including an island dummy, length of coastline, date of independence, and presence of natural resources. All of these can be seen in the online Appendix.

[30] The correlation, as well as all the regression results that follow, is robust to the exclusion of Singapore, which seems to be an outlier in terms of governance among the countries in this subsample.

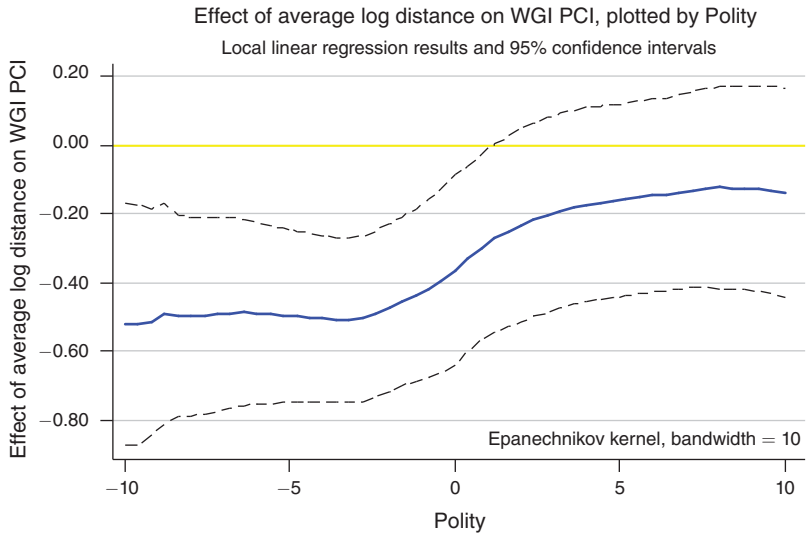

FIGURE 4. GOVERNANCE AND ISOLATION OF THE CAPITAL CITY BY POLITY SCORE

Notes: Figure 4 shows WGI First PC: First Principal Component of Six World Governance Indicators measures (rule of law, voice and accountability, government effectiveness, regulatory quality, control of corruption, and political stability). The figure plots the coefficients on *AvgLogDistance* from local linear regressions with WGI PCI as the dependent variable and log GDP per capita, log population, urbanization, and region and legal origin dummies as control variables. The size of the grid is 50 with a bandwidth of 10, and we use the Epanechnikov kernel.

full sample if we include an interaction term between the isolation measure and an autocracy dummy. Put simply, as in the model, isolated capitals are associated with misgovernance.[31]

The same pattern can be seen using a more flexible, semi-parametric approach. Specifically, we can model the potentially heterogeneous relationship between the isolation of the capital and the quality of governance as a nonparametric function of the Polity measure (denoted as p): $WGI_c = \alpha(p_c) + \beta(p_c) \times AvgLogDistance_c + \mathbf{X}_c\mathbf{\Gamma}(p_c) + \epsilon_c$, where $\mathbf{X}_c$ stands for the basic control variables as in column 1 of Table 7. The function $\beta(p_c) = \partial WGI_c/\partial AvgLogDistance_c$ is estimated in local linear regressions of this equation by different values of p.[32] The resulting function is plotted in Figure 4. We can see a pattern in which a significant negative coefficient is found for relatively autocratic countries at the lower end of the range, while for the more democratic countries the coefficients are much smaller in absolute value and statistically indistinguishable from zero. Notably, the threshold falls right around the

[31] This result is also robust when isolation is measured using the actual driving distance (or driving time) as computed from Google Maps (see the online Appendix). We prefer the "as-the-crow-flies" distances, though, since road distances and quality can be affected both by the incentive to evade accountability but also by overall state capacity. As a result of that, the driving-based measures tend to display smaller coefficient magnitudes, as can be seen in the online Appendix Tables E6 and E7.

[32] We use the Epanechnikov kernel with a bandwidth of 0.5 the range of p. The observed pattern is much similar across a wide range of cross-validated bandwidths (see Li and Racine 2006, ch. 2).

Polity score of zero that separates the regimes classified as autocracies and closed anocracies.

These are not causal estimates of the impact of increasing isolation, of course, and our theory itself is explicit about the presence of reverse causality. Still, to provide reassurance that the correlation we find is not spurious, the table also shows that the results are robust to correcting for selection on unobservables, following Oster's (forthcoming) procedure (in the spirit of Altonji, Elder, and Taber 2005) assuming that there is as much selection on unobservables as there is selection on observables.[33]

Alternatively, we also implement the potential source of exogenous variation used, in the context of US states, by Campante and Do (2014): the location of a country's centroid. The results can be seen in the online Appendix, which displays first-stage and 2SLS/IV estimates for the specifications in Table 8, with the average log distance of population with respect to the centroid ($AvgLogDistance^{cent}$) instrumenting for *AvgLogDistance*. The full-sample results are robust even with weak-IV-robust inference, but the IV is indeed rather weak.[34] To understand why this is the case, note that the first stage is absent in the subsample of autocratic countries. This is not surprising: the equanimous, republican logic of locating the capital at a relatively central position, which underlies the first-stage relationship across US states, was bound to be much less influential to the decisions of autocrats and/or colonial powers concerning the designation of the capital.[35] In contrast, the first-stage coefficient is considerably larger in the sample of democracies, but in that case, consistent with our theory, there is no impact of isolation on governance. All in all, while we still refrain from any causal interpretation of the estimates, the balance of evidence increases confidence that the relationship we find is not spurious.

With the appropriate causality caveats, we can also assess the quantitative importance of the correlation. Since we report standardized results, it is easy to interpret the coefficients in Table 8: a one-standard-deviation increase in the isolation of the capital (computed over the distribution for the entire sample) is associated with a decrease in the measured quality of governance of just over 0.3 standard deviations in the context of the full specification for the nondemocratic subsample (column 4). To make this more concrete, consider the thought experiment of increasing the isolation of the capital from about average among autocracies (approximately that of Nairobi in Kenya) to one standard deviation above it (roughly that of Sudan's Khartoum). As it turns out, the quality of governance in Kenya is also measured as about average for our sample of autocracies, whereas Sudan's is among the very worst in the world—better only than Iraq, Afghanistan, and Liberia. The estimated coefficient suggests that the increase in isolation would be associated with a decrease in the quality of governance that corresponds to about 40 percent of the actual difference

[33] Both Oster (forthcoming) and Altonji, Elder, and Taber (2005) argue that, in practice, selection on observables is expected to be of a smaller magnitude than selection on unobservables, in which case our results should be even more robust to omitted variable bias.

[34] The online Appendix also shows results using two other potential instruments, namely $AvgLogDistance^{cent}$ with respect to the distribution of land suitability and $AvgLogDistance^{cent}$ with respect to the uniform distribution across a country's cells. As expected, those instruments are even weaker.

[35] As noted by Herbst (2000, 16), with respect to Africa, "[most] colonial capitals were located on the coast, demonstrating the low priority of extending power inland compared to the need for easy communication and transport links with Europe." These capitals by and large persisted as such after independence.

between the two countries. This suggests that the mechanism linking accountability and isolation via the threat of conflict is important from a quantitative perspective.

Robustness.—The association between isolated capital cities and poor governance, as well as the fact that it is present only in relatively nondemocratic contexts, also holds under different ways of measuring the degree of isolation of the capital and the quality of governance.

We consider three alternative measures of isolation: (i) the "unadjusted" version of *AvgLogDistance*; (ii) the (log of the) distance between the actual capital and the least isolated place in the country;[36] and (iii) capital primacy, namely the share of the country's population living in the capital city as officially delimited, which is an inverse measure of isolation. The pairwise correlations between these variables and (adjusted) *AvgLogDistance* in our sample—0.62, 0.59, and −0.37, respectively—clearly show that the measures are related, as expected, but substantially different nonetheless. In particular, capital primacy is a rather unsatisfactory measure, as it relies on arbitrary definitions of what counts as the capital city and discards all the information on the spatial distribution outside of that arbitrarily delimited city, and the lower correlation underscores that it is indeed noisier. Still, it is sufficiently common so as to warrant checking for the sake of completeness. As for the quality of governance, we use another measure, the Rule of Law index compiled by Freedom House, which also gives us a sufficiently wide coverage in terms of the number of countries—and particularly of nondemocratic ones. (We rescale the index so that higher scores correspond to better governance.)

The results are shown in Table 9. Columns 1–4 reproduce the specifications for autocracies and established democracies, respectively from columns 4 and 6 in Table 8, but looking at unadjusted *AvgLogDistance* and the distance to the least isolated place, respectively, as key independent variables. In both cases, we see a similar negative, statistically significant correlation between isolated capital cities and quality of governance for the autocracy subsample only. Note that the results are not too far, quantitatively speaking, from what we found in our baseline.

Columns 5–6 then consider the coarser measure, capital primacy. Unfortunately, our data on capital city populations are considerably more sparse, so in order to obtain reasonable sample sizes, we consider an "autocracy" threshold at the median Polity score in our distribution (equal to six). This includes what the Polity dataset classifies as "open anocracies" (Polity score between zero and five), as well as a few less established "democracies." We see a positive coefficient (p-value: 0.122), only for the subsample of autocracies (column 3). Note also that the estimated coefficients are considerably smaller and less precisely estimated, consistent with the substantial measurement error being introduced by the coarseness of the measure.

In addition, columns 7–8 repeat the same exercise with the Freedom House measure of governance—reverting back to using our standard zero threshold for

[36] Notably, for most countries, the least isolated location is the country's largest city, which often turns out to be the capital city itself. The exceptions are illustrative: in China, it is close to Zhengzhou, the largest city in that country's most populous province (Henan), and similarly for India, where it is also in the most populous state (Uttar Pradesh). In the United States, it is Columbus, Ohio, right in the middle of the large population concentrations of the East Coast and the Midwest.

Table 9—Isolated Capital Cities and Misgovernance: Robustness

Dependent variable	WGI PC (1)	WGI PC (2)	WGI PC (3)	WGI PC (4)	WGI PC (5)	WGI PC (6)	FH (7)	FH (8)	WGI PC (9)
	Auto-cracies	Demo-cracies	Auto-cracies	Demo-cracies	Auto-cracies	Demo-cracies	Auto-cracies	Demo-cracies	Full sample
AvgLogDistance (unadj.)	−0.4499	0.1018							
	[0.115]	[0.308]							
Distance min. isolation			−0.2277	0.0364					
			[0.058]	[0.082]					
Capital primacy					0.1137	−0.1679			
					[0.070]	[0.076]			
AvgLogDistance							−0.2009	0.0066	−0.0057
							[0.080]	[0.025]	[0.070]
AvgLogDistance × autocracy									−0.2736
									[0.096]
AvgLogDistance (other largest)									−0.1489
									[0.081]
AvgLogDistance (other largest) × autocracy									0.0714
									[0.116]
Selection-corrected bound	−0.474		−0.244		0.0783		−0.227		−0.272
Observations	36	31	34	31	32	31	35	29	126
R^2	0.859	0.918	0.846	0.918	0.846	0.928	0.611	0.891	0.877

Notes: Robust standard errors are in brackets. The *z*-scores (normalized variables) are reported. WGI PC (columns 1–6 and 9): First Principal Component of Worldwide Governance Indicators measures (rule of law, voice and accountability, government effectiveness, regulatory quality, control of corruption, and political stability) are shown. FH (columns 7–8): Freedom House Rule of Law Index is displayed. For autocracies, Polity ≤ 0, except for column 5 where the threshold is the median Polity score (≤ 6); for established democracies, Polity > 9. Control variables are log GDP per capita, log population, urbanization, and region and legal origin dummies, majoritarian and presidential system dummies, ethnic fractionalization, and log land area and maximum distance in the country (log of maximum distance (in km) between capital city and any point in the country) for columns 1–4 only. Column 9 also includes the autocracy dummy as the control variable. Columns 1, 3, 5, 7, and 9 show the bound from zero with Oster's (forthcoming) correction when the selection by unobservables equals the selection by observables.

autocracies and *AvgLogDistance* as our key independent variable. The results are very much consistent, which is unsurprising given that the measures of governance are very highly correlated (in excess of 0.80). Still, and particularly with our small samples, it is reassuring to learn that the results are not very sensitive to that choice of measures.

The last column in Table 9 then addresses a different robustness exercise: whether the results are indeed driven by the role of the capital city itself, as opposed to other correlated features of the spatial distribution of population. Specifically, it could be that relatively isolated capital cities often correspond to the existence of a major economic center away from the capital, like Istanbul or São Paulo or Lagos. This could be associated with another elite based in that other city, which might be conducive to misgovernance in different ways—say, through their own predatory behavior or through disputes with the political elites situated in the capital. In order to check that our results are not driven by this type of mechanism, we compute our measure of isolation *AvgLogDistance* with respect to the largest city in each country, other than the capital itself (as of 2000).[37] Column 9 shows, using a specification akin to that

[37] This is either the country's largest city or, more often, its second largest, since the capital is also the largest city in about five out of six countries. The correlation between the measure and the isolation of the capital city is

of column 8 in Table 6, that our results are essentially unaffected, qualitatively or quantitatively, when we control for the degree of isolation of the other largest city.[38] This suggests that what we find indeed relates to the special role of the capital city.

Unpacking Governance.—We can further assess the reach of the explanatory power of the theory by unpacking the different dimensions that go into measures of governance. Consider first the different component measures of the WGI. As we have noted, the six measures are highly correlated with one another, and in light of that, one might expect that they would display a similar relationship with the isolation of the capital if considered separately. As it turns out, this is true of five of the six measures, but not for Political Stability. Panel A in Figure 5 shows that the coefficients obtained from local linear regressions are statistically indistinguishable from zero, and with no apparent difference with respect to autocracies versus democracies. This suggests that isolated capital cities are associated with worse governance across all dimensions, except that they are not linked to the political system being less stable.[39]

This is not surprising when looked at through the lens of our framework, in which isolating the capital city is a rebellion-preventing measure. In fact, we have pointed out that the simple version of the model in which we take isolation and governance as exogenous implies that more isolated capitals are associated with less conflict and less risk for incumbent elites. Once we consider the interaction between political stability and the choices of degree of isolation and quality of governance, the relationship becomes ambiguous, but in any case, we would not expect from our framework that incumbent regimes would necessarily be less stable when the capital is more isolated.[40]

In contrast, this is quite unlike what one would expect from alternative stories that one might concoct to explain the connection between isolated capitals and poor governance, such as one based on state capacity. For the sake of an example, consider a story where, if the capital is somehow located in an isolated place, the state has a harder time taxing its citizens and developing its fiscal capacity, the lack of which leads to bad governance. Besides begging the question of why an incumbent regime would refrain from moving its capital to a more favorable location, such a story about a relative lack of control over the population would lead us to expect that this would be a more fragile, unstable regime.[41]

Another way to unpack the meaning of governance is to look at a measure of government performance that is unrelated, at least directly, to the political incentives of rulers and elites as it pertains to power sharing or political survival. One such measure has been proposed by Chong et al. (2014) to isolate the government's ability

around 0.53—substantial but far from overwhelming.

[38] The results are the same if we split the sample between autocracies and established democracies, as shown in the online Appendix. The coefficient on the isolation of the other largest city in autocracies is small and statistically insignificant.

[39] The plots for the other five measures can be seen in the online Appendix.

[40] To see why less isolation would not necessarily be associated with less stability in equilibrium, note that it could happen that a relatively unprotected elite would still achieve stability by sharing power and rents more broadly, thus discouraging rebellions.

[41] This is as suggested by Herbst (2000) in a different context with respect to low population densities in Africa.

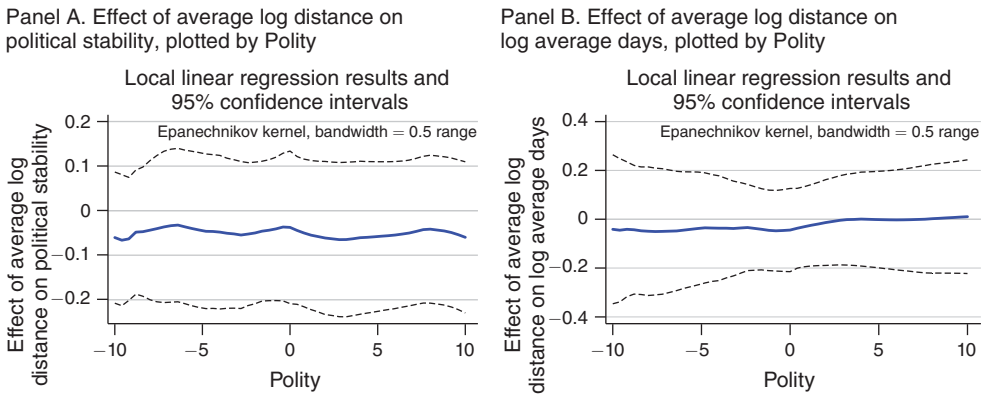

FIGURE 5. POLITICAL STABILITY, LOG AVERAGE DAYS, AND ISOLATION OF THE CAPITAL CITY BY POLITY SCORE

Notes: The figure plots the coefficients on *AvgLogDistance* from local linear regressions with political stability and log avg days to return a letter as dependent variables, respectively, and log GDP per capita, log population, urbanization, and regional and legal origin dummies as control variables. The size of the grid is 50 with a bandwidth of 10, and we use the Epanechnikov kernel.

to perform a simple task effectively: the average number of days it takes a country's post office to return letters sent to nonexistent addresses in the countries' five largest cities. This measure ought to be correlated with broader measures of governance.[42] Still, we would not expect it to respond directly to the incentives highlighted by our theory.

Panel B in Figure 5 shows that, in spite of that high correlation with governance, we find no correlation between that measure of government performance and the isolation of the capital city—and again with essentially no distinction between democracies and autocracies. This provides further evidence that the stylized fact we detect is not an artifact of some correlation between isolated capitals and generally low state capacity that is unrelated to the kind of forces our theory underscores.

We now turn to the question of whether we can shed direct light on the power sharing mechanism highlighted by the theory by looking at the Polity IV dataset. We have used the aggregate Polity measure to parse the sample between democracies and autocracies, but the data contain more information that can be used to study more subtle distinctions. In particular, the Polity measure aggregates the content of several other measures—and the extent to which they can be interpreted as relating to the degree of power sharing varies considerably.

Out of the four variables aggregated into the Polity IV index of Democracy, two are described as pertaining to either the realm of "independence of executive authority" (*ExecutiveConstraints*) or to that of "political competition and opposition" (*ParticipationCompetitiveness*).[43] These are clearly related to the degree of power

[42] For instance, one might imagine that less accountable governments could be more likely to pursue actions that would result in ineffective provision of services—say, by packing the post office with incompetent political appointees. In fact, the raw correlation with the WGI principal component in our sample is substantial at −0.72.

[43] The former refers to "the extent of institutionalized constraints on the decision-making powers of chief executives" (Marshall and Gurr 2014, 24), ranging from "unlimited authority" to "executive parity or subordination."

Table 10—Changes in Capital Cities and Power Sharing

Country	From	To	Year	Δ *Exec. Constr.*	Δ *Part. Comp.*
Russia	St. Petersburg	Moscow	1918	1	−2
Turkey	Istanbul	Ankara	1923	−2	−1
Australia	Melbourne	Canberra	1927	0	0
China	Nanjing	Beijing	1949	1	−2
Mauritania	–	Nouakchott	1957	−2	0
Brazil	Rio de Janeiro	Brasilia	1960	−4	−2
Rwanda	Butare	Kigali	1962	0	0
North Yemen	Ta'izz	Sana'a	1962	2	−1
Pakistan	Karachi	Islamabad	1966	0	0
Malawi	Zomba	Lilongwe	1974	0	0
Côte d'Ivoire	Abidjan	Yamoussoukro	1983	1	1
Nigeria	Lagos	Abuja	1991	−2	−3
Kazakhstan	Almaty	Astana	1997	−1	−1
Myanmar (Burma)	Yangon	Naypyidaw	2005	−1	0
Average				*−0.50*	*−0.79*
p-value				*0.266*	*0.021*

Notes: This table excludes partial changes. For sources and notes, see Table 2. Changes in Polity IV variables ("*Executive Constraints*" and "*Participation Competitiveness*") are between ten years after and ten years before the change of capital with the exception of Mauritania, Rwanda, and Kazakhstan ("pre" measure for first year of independence) and Myanmar (Burma) ("post" measure for 2010, latest available). The *p*-values for the two-sided *t*-test of the null hypothesis of the average are equal to 0 with 13 degrees of freedom.

sharing that exists within a political system: an unchecked executive and a limited scope for political competition are clear signals of concentration of power.

A first look at how these measures relate to the isolation of the capital city is obtained from the instances of capital city moves that were listed in Table 2. Table 10 reproduces that list, excluding the cases of partial capital moves, but also adding 2 columns describing the changes in *ExecutiveConstraints* and *ParticipationCompetitiveness* from 10 years before to 10 years after the date of the move (or closest date available). We see a substantial drop in the two measures, on average, which is indeed statistically distinguishable from zero in the case of *ParticipationCompetitiveness*, in spite of the very small sample. This indicates that the capital city moves are typically accompanied by more concentrated power.

This pattern actually holds more systematically beyond the extreme example of capital city moves. Table 11 starts off, in column 1, by looking at the aggregate Polity measure and how it relates to the degree of isolation in autocracies. Here, we extend the definition of nondemocracies to include what Polity defines as "open anocracies," delimited by the threshold score of five, because there is naturally considerably less variation in the Polity components in the subset of autocracies and closed anocracies. We see a negative correlation, showing that countries with isolated capital cities tend to display institutions that are farther from the democratic ideal; the correlation is statistically significant at the 10 percent level only. The connection is brought into sharper focus, however, when we look at the power sharing measures of *ExecutiveConstraints* and *ParticipationCompetitiveness* in columns 2

The latter in turn captures "the extent to which alternative preferences for policy and leadership can be pursued in the political arena" (26) and ranges from "repressed" to "competitive."

Table 11—Isolated Capital Cities and Power Sharing in Autocracies

Dependent variable	Polity	*Executive constraints*	*Participation competitiveness*	*Recruitment competitiveness*	*Recruitment openness*
	(1)	(2)	(3)	(4)	(5)
AvgLogDistance	−0.1831	−0.2123	−0.3249	−0.0554	0.1715
	[0.109]	[0.073]	[0.084]	[0.097]	[0.225]
Selection-corrected bound	−0.325	−0.288	−0.414		
Observations	63	63	63	63	63
R^2	0.450	0.622	0.533	0.541	0.288

Notes: Robust standard errors are in brackets. The *z*-scores (normalized variables) are reported. For autocracies, Polity $\leq$ 5. Control variables are log GDP per capita, log population, urbanization, region and legal origin dummies, majoritarian and presidential system dummies, and ethnic fractionalization. Columns 1 to 3 include the bound from zero with Oster's (forthcoming) correction when the selection by unobservables equals the selection by observables.

and 3, respectively. The quantitative implications are in fact very similar to what we found for our measures of governance.

Interestingly, columns 4–5 show no evidence of a negative link between isolated capital cities and the other 2 component measures (*RecruitmentCompetitiveness* and *RecruitmentOpenness*), which have to do with "executive recruitment."[44] The measure of openness in particular, while clearly related to democracy, does not speak directly to how power is shared between different groups in society: countries receive a maximum score in the openness measure essentially as long as succession is not hereditary.[45] Naturally, all four measures tend to be correlated, so that countries with high degrees of power sharing will typically score high in the recruitment measures as well. It is nevertheless interesting that *RecruitmentOpenness* is the least correlated with the other three and particularly so with the power sharing measures: 0.59 and 0.47 when the pairwise correlations between the other three is never below 0.83. This suggests that it indeed addresses other aspects of the institutional setting.

C. *Additional Results*

Beyond the central implications of the model, with respect to conflict and quality of governance, we can also check its ancillary results. We first look at whether capital city inhabitants will be better off relative to their faraway brethren, since the greater threat they represent for incumbents enables them to extract additional rents in equilibrium, and that this advantage will be greater when the capital is more isolated.[46]

[44] In spite of the small samples, the equality of coefficients between combinations of columns 2–3 and columns 4–5 can be decisively rejected at standard levels of confidence with the exception of that between columns 2 and 4.

[45] This allows, for instance, the post-Stalin Soviet Union, no one's idea of a regime with widespread power sharing, to achieve that maximum score.

[46] We find related evidence that individuals who live closer to the capital report being more satisfied with what they get from national institutions, which we report in the online Appendix to save space. That table uses data from the AfroBarometer, which report information on the location of respondents at the village level and covers countries that are young democracies at best, where the logic of our model is a meaningful background in their institutional settings. Individuals who live farther from the capital are significantly more dissatisfied with the national political system (panel A). (This is true controlling for distance to the largest city besides the capital, and for region fixed

TABLE 12—ISOLATED CAPITAL CITIES, CAPITAL PREMIUM, AND MILITARY EXPENDITURES

Dependent variable	Capital premium: Autocracies (1)	Capital premium: Democracies (2)	Capital premium: Full sample (3)	Military budget: Autocracies (4)	Military budget: Democracies (5)	Military budget: Full sample (6)
AvgLogDistance	0.4158	−0.1040	−0.0287	−0.3393	−0.0150	0.0986
	[0.141]	[0.209]	[0.148]	[0.124]	[0.133]	[0.116]
AvgLogDistance × autocracy			0.4096			−0.3912
			[0.197]			[0.169]
Interstate war				0.4441	0.6072	0.5975
				[0.247]	[0.235]	[0.192]
Selection-corrected bound	0.475		0.466	−0.716		−0.714
Observations	32	32	64	55	51	106
R^2	0.398	0.436	0.409	0.382	0.477	0.418

Notes: Robust standard errors are in brackets. The *z*-scores (normalized variables) are reported. Dependent variables are GDP per capita in capital city/GDP per capita and military budget (log of share of central government budget, avg. 1990–2006, WDI). Interstate war is the dummy for involvement in the interstate war between 1975 and 2007 (Correlates of War). For autocracies, Polity (1975–2000) ≤ 0; for democracies, Polity (1975–2000) > 0. Control variables include log GDP per capita, log population, urbanization, majoritarian and presidential system dummies, and ethnic fractionalization. Columns 1, 3, 4, and 6 show the bound from zero with Oster's (forthcoming) correction when the selection by unobservables equals the selection by observables.

To check this relation, we obtain cross-country data from the McKinsey Global Institute (Dobbs et al. 2011) on city-level income per capita in 2007 for 600 cities around the world. Out of these, 77 are country capitals, and for all these countries, we compute the capital city premium as the ratio between the capital's income per capita and the countrywide GDP per capita that we have used in the previous analysis. By the same token, we proxy investment in military strength by the amount of military expenditures pursued by a country's central government as a percentage of total central government expenditures, averaged between 1990 and 2006 (from the World Development Indicators).[47]

Table 12 displays the results of a simple regression analysis along the lines of Table 8. The aforementioned data caveats aside, we see a positive, qualitatively large correlation between the capital city premium and the isolation of the capital in autocracies. In other words, the inhabitants of isolated capital cities of autocratic countries earn a substantially larger premium over the rest of the population. This is

effects, which suggests that they are not driven by the effects of isolation on monitoring or public good provision. We also control for a comprehensive set of control variables flagged by Nunn and Wantchekon (2011) as possibly correlated with trust.) In contrast, distance to the capital is uncorrelated with measures of generalized trust and of the degree of interest and information regarding public affairs, which could also be correlated with perceptions of corruption (panel B).

[47] The sample size is now smaller in light of the limited number of countries for which we have data on income per capita for the capital city (particularly among non-democracies), so we now split the sample between autocracies and democracies according to the average of the Polity score between 1975 and 2000, using the threshold of zero. (We stop at 1975 in order to restrict ourselves to the post-decolonization period.) This helps us obtain a reasonable sample size of autocracies in contrast with the more recent time period used in Tables 8 and 9. However, going back to this less democratic period greatly restricts the sample of countries with a Polity score above nine. For this reason, we contrast the autocracy sample with the set of countries with scores above zero. All in all, we are still left with a small sample, and for that reason, we have to be especially parsimonious when it comes to the set of control variables.

exactly what was predicted by our model. It could certainly be the case that omitted factors are also influencing this correlation, but it is telling that once again, as shown by columns 2–3, this connection does not extend to those countries that are more democratic, just as we would expect from our framework.

Table 12 also shows that autocratic regimes facing a population that is more concentrated around its capital city will spend significantly more with the military than regimes with isolated capitals. This is exactly in line with the model: isolated capital cities work as protection against rebellion threats, and hence obviate the need for further protection. The same is not at all true of relatively democratic regimes, which again reaffirms the model's logic.[48]

IV. Concluding Remarks

Our results underscore the importance of the spatial distribution of the population as a source of informal checks and balances over autocratic regimes. In particular, isolated capitals in weakly institutionalized contexts should be seen as both a symptom and an enabler of misgovernance. We should thus be especially attentive to those regimes that are able to ensconce themselves in an isolated capital, as well as to policies that enhance that ability, say, by restricting internal mobility. At the same time, the model also highlights that this accountability mechanism comes at a price, since it operates via the threat of conflict and violent removal from office.[49]

From a broader perspective, we can think of the spatial distribution of individuals as a source of variation in the constraints that underpin institutional choices, but one that perhaps strikes a middle ground between what Banerjee and Duflo (2014) term "deterministic" and "non-deterministic" views of political economy: the spatial distribution of population is typically very persistent but is certainly amenable to policy intervention and does evolve in the long run. In that sense, long-run forces toward less isolation—say, because the capital city is a pole of attraction due to its very role as the seat of political power—would tend to constrain governments, and work toward the consolidation of better institutions.

The framework we have developed can presumably be used to understand other phenomena related to the threat of revolutions and the response of incumbent regimes. In this paper, the variable that affects the extent to which an individual or group represents danger to an incumbent elite is their distance to the seat of political power, but we can think of other factors that may act in similar ways—say, education (Glaeser, Ponzetto, and Shleifer 2007). In such a context, we could sketch a theory of incumbent regimes that may choose to pair less power sharing and worse governance with, say, less human capital.

As a final example, we can also think about the formation and size of countries. Our framework has taken polities as given, but it is natural to think that the tensions we have highlighted could translate into pressures in the direction of breaking up

[48] The use of military spending as our proxy for anti-rebellion investment is predicated on the assumption that it is largely driven by this sort of domestic concern. In that regard, we include as a control variable a dummy for whether the country has been involved in an interstate conflict between 1975 and 2007 as coded by the Correlates of War dataset.

[49] See, e.g., Campante and Glaeser (2018) on the case of Argentina.

countries. In that sense, we might think about the potential role of the spatial distribution of population (and of different subgroups in that population) around the capital city in affecting the equilibrium configuration of countries, as modeled for instance by Bolton and Roland (1997) and Alesina and Spolaore (2003). We leave these as promising avenues for future research.

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