The Curse of Geography:
How Governments Preempt Secession Attempts[*]

Rob Williams[†]

May 2, 2019

Words: 11,766

Abstract

Secessionist conflicts often begin in places abundant with resources and located far from the centers of state power. These factors affect the likelihood of secessionist conflict because dissidents will only rebel when they expect to be able to form a functional state within the borders of their territory following independence. There are many regions that meet the necessary conditions for sovereign governance in the world, but few secessionist conflicts. I argue that this relative paucity of secessionist violence is the result of government preemption of potential secessionist movements. Using cross national geospatial data, I find that governments develop higher levels of state capacity in more governable, and thus more secession prone, regions. The same factors which make territory attractive for secession also make governments willing to work to retain control of that territory, suggesting that potential secessionists confront many of the same dilemmas as states.

1 Introduction

The Nigerian military maintains a significant presence in the petroleum rich Niger Delta region. While the threat of secession is significantly lower than it was during the height of the Ogoni self-determination movement in the 1990s or the Nigerian Civil war in the 1960s,

the government is apparently still worried given the frequency of military operations against rebels in the region (Walker 2009, BBC 2016, Owolabi 2017). This concern is not misplaced; loss of the oil revenues generated by the Niger Delta would severely hinder the government's ability to meet its obligations, and militant attacks on oil facilities (Uguru & Faul 2016) have led to up to 30% reductions in production (The Economist 2016). Regular military exercises anger local residents who say that the government should "change its military approach" and "address the developmental challenges facing the region," instead (Akwagyiram 2017).

At first glance, this belligerence may seem puzzling. Gone are the demands for secession and independence of the Biafrans; in their place, Ijaw groups call for "federalism and self-determination" (Opejobi 2017). Why the heavy hand if separatism is less of a concern today? One possibility is that the government is unwilling to tolerate the income loss a revenue sharing agreement would entail. Another is that the region's petroleum reserves are so valuable that the government is not willing to risk any chance of losing them to a successful secessionist movement.

In fact, acquiescing to the region's demands for development could make secession more likely. Modern nation-states are territorial political entities, defined by their borders with other sovereign states, and encompassing the territory within those borders. As such, the administrative competence and institutional capacity of a group is only part of the equation for how difficult governing will be after achieving independence. The other is how burdensome it will be to govern and control the specific territory that a group will control. The governability of a territory can be influenced by numerous geographic factors such as the location and abundance of natural resources, ease of accessibility, and quality of infrastructure. Similarly, the human geography of a territory can determine how governable it is for a specific group. Are people clustered in dense urban populations, making the administration of the territory easier? Are there numerous other ethnic groups in a territory that may be unwilling to submit to majority rule by the self-determination group? Improving infrastructure, paving roads, and expanding electrification would all decrease the difficulty of governing the Niger Delta if it were an independent state. While developing the Niger Delta might satisfy activists in the short-term, the improvements to region decrease the difficulty of governing it sufficiently that they may decide independence is a feasible goal.

In this paper I develop a notion of territorial governability; the idea that some geopolitical units are more governable than others as a function of their geography, both physical and human. These are factors continuously distributed across a territory and varying throughout its area. Unlike the traditional focus on mountainous or rough terrain, territorial governability does not measure how difficult it is for a central government to reach the far flung reaches of its territory. Instead, it addresses how governable a territory would be as an independent,

2

sovereign state separate from the state that currently controls it.

If geography influences a region's suitability for independent governance, and thus likelihood of secession, then this gives states a powerful source of information they can use to head off potential secessionist movements. If an excluded ethnic group inhabits territory that is particularly well suited to sovereign governance, and therefore secession, then the state may take pains to discourage the group from considering secession by increasing their coercive capacity within the group's territory. This attention will manifest as increased levels of state capacity relative to less governable areas.

It is important to conceptually disaggregate state capacity for this argument. State capacity entails both ensuring a monopoly on the legitimate use of force (Weber 1965, Tilly 1985, Olson 1993) and maintaining political institutions (Acemoglu, Johnson & Robinson 2001). Creating effective institutions or improving a region's infrastructure could increase the attractiveness of secession by providing more tools for a hypothetical future state. Conversely, increasing the policing and surveillance capabilities in a region deters secession by increasing the costs of militarily challenging the state. I will address the challenges of measuring coercive state capacity later in this paper.

To test this argument, this paper proceeds as follows. First, I review the state formation literature, focusing on both the early modern period and more recent experiences during decolonization in the latter half of the 20th century. Next, I discuss the importance of these concerns in the decision making of secessionist groups. I then argue that states are aware of these dynamics and use their knowledge of different territories within their borders to identify the most likely candidates for secession and proactively work prevent such movements from emerging. I conduct a cross-national test of this argument using geospatial data to measure both governability and local state capacity. Results indicate that governable areas far from the government's reach have elevated levels of state capacity, suggesting that governments are deliberately cultivating a presence in these areas despite the cost of doing so. I close by discussing how this strategy can explain many of the patterns we observe in civil conflict throughout the world.

2   Theory

The starting point for understanding territorial conflict is nationalism. Groups only engage in territorial conflict—-the struggle to create new and alternative political institutions within the boundaries of a given territory—when motivated by nationalist desire to ensure that "ethnic boundaries should not cut across political ones" (Gellner 1983, 1). Thus, territorial conflicts represent an attempt to replace existing geographic political divisions with ones that

more closely support the "nationalist principle" (Gellner 1983) that the government of a state should represent the interests of the "imagined community" of the nation (Anderson 1983) that lives within its geographic borders.

This type of conflict hopes to alter the institutions within a specific territory by either gaining more autonomy from the central government or by withdrawing from the current, non-representative, state and forming a new one (Gleditsch, Wallensteen, Eriksson, Sollenberg & Strand 2002). These conflicts are more limited in aims than governmental ones because the group has no desire to overthrow or replace the existing government. Instead, a group's aims and ambitions are limited to changes within territory that is 'theirs,' by reducing or eliminating the influence of the government within this area.

One explanation for the emergence of secessionist conflict is that groups will push for independence when they believe that they have sufficient bargaining leverage to force the state to accede to their goals (Jenne 2007, 39-41). But why not push for secession in all cases to start from a more extreme negotiating position? Empirically, this does not occur as the percentage of self-determination groups calling for secession has never passed 55% since 1960 (Cunningham 2014, 72). The fact that groups "are not born irredentist or secessionist" and can change move from conventional politics to secession and back again (Horowitz 1991, 13) suggests that bargaining with the government is only part of the story.
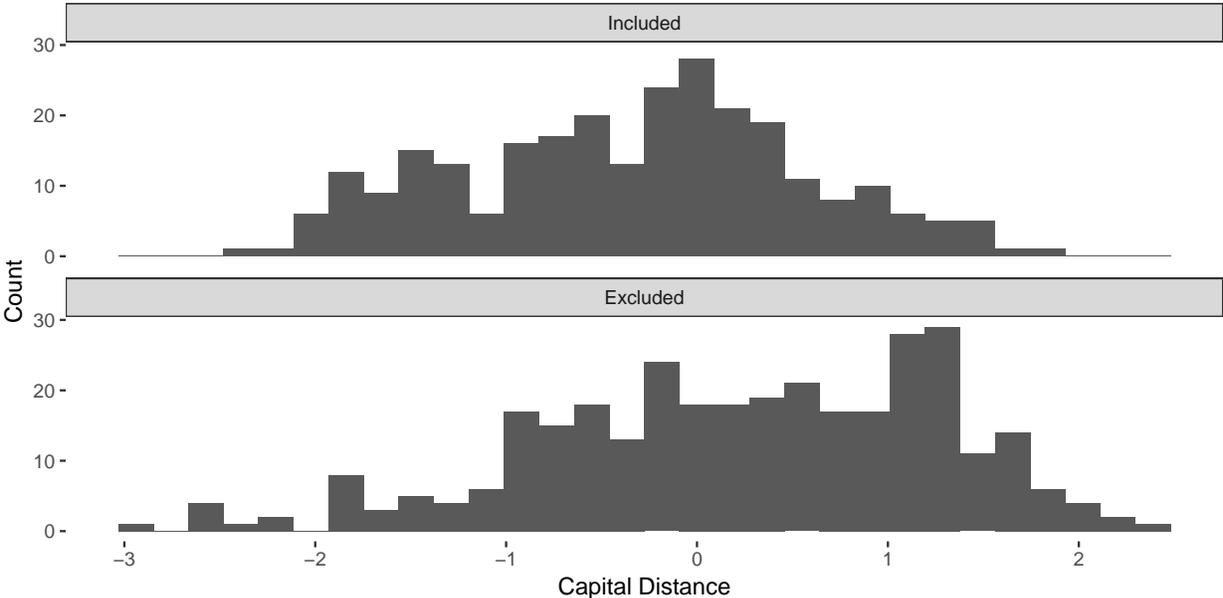

Figure 1: Histogram of the distance from ethnic group territories to the national capital (log transformed and standardized) by group political status in 2013.

Secessionist conflicts are mostly likely when marginalized ethnic minorities who suffer from discrimination at the hands of the state (Cederman, Wimmer & Min 2010) are located

far from the capital (Cederman, Buhaug & Rød 2009). Secessionist conflicts are almost purely an ethnic phenomenon as ethnicity can more easily whip up the nationalist fervor such efforts require than other identities such as class or religion (Cederman, Buhaug & Gleditsch 2013). The empirical distribution of the location of excluded minority groups suggests that we should observe more secessionist conflicts than we do. Figure 1 presents the distribution of the distance from ethnic group to the capital, divided by political status. Excluded groups are much more represented in the right side of the distribution. Despite the frequency of excluded groups located far from the capital, the prevalence of secessionist conflict is relatively low.

This pattern is only puzzling if we think that the process of secession stops as soon as the government concedes and allows the group to leave with some of its territory. While victory on the battlefield may signal the end of a secessionist movement, it is just the beginning of a new state, and the two entities share a leadership. The following section explores the challenges of state-building, which provide insight into why some groups may not be willing to engage in secessionist civil war.

2.1   Rebel groups as (potential) state-builders

Formal independence and the ability to forge a functioning government within the territory of a new state are two very different things (Clapham 1996, Clapham 1998, Englebert 2000). Work that explains when groups push for secession has typically focused on how capable groups are of defeating the government (Toft 2003), but this is only half of the story. The responsibilities that a group must take on in the wake of a successful bid for independence are enormous:

> a nationalist movement, to stand any chance of gaining sovereignty for its group, must …begin the process of evolving organisations, cadres and institutions able to act as a 'proto-state' the moment independence is achieved. It must, as it were, prefigure the polity it wishes to erect, by creating a counter 'state within a state' as part of the fabric of the 'movement,' and train its followers in the political and administrative tasks they must perform when power is assumed (Smith 1976, 7)

The need for rebel movements to begin building the institutions that will eventually become those of a new state means that they are acutely aware of how difficult this task will be. Thus, anything that makes these obligations easier to fulfill could make secession more attractive.

If the process of state building seems insurmountable given the context a group exists within, then secession will be a difficult goal to pursue. Given the territorial nature of states, the features of the territory that the group controls and hopes to rule is one of the largest

influences on how difficult this task will be. Other factors such as the quality of political institutions (Lemke & Carter 2016) or the presence of external financial support (Stokke 2006) obviously matter as well, but they have been more extensively studied. The political processes of state formation can be tumultuous in newly independent territories (Lemke 2011) and can have long-term effects on the welfare of such states (Acemoglu, Johnson & Robinson 2001), so secessionist movements will be most likely to emerge where territory is most favorable to them.

In order to understand what makes certain territories more or less conducive to the creation of new states, I draw on the state formation literature. Specific factors such as strong extractive institutions (Tilly 1992) or external military threats (Tilly 1985) that helped or hindered the formation of extant states continue to affect the creation of new states today (Thies 2006, Thies 2007). Despite the legacy of colonialism faced by many states that have emerged since the end of World War II, these classical state-building dynamics still appear to be at play (Cohen, Brown & Organski 1981, Lemke & Carter 2016). Since these mechanisms still matter today, we can ask whether other factors that affected the difficulty of state formation in the early European context influence whether a given rebel group seeks to secede or not.

Work on state formation and secession has primarily focused on institutional explanations. Roeder (2007) argues that separatist movements are most likely to credibly challenge the state, and attain independence, when they represent "segmented-states," or subnational administrative jurisdictions where ethnic groups enjoy some level of local political power. Empirically, political leaders only eppear to initiate self-determination crises (nation-state crises in Roeder's terminology) when they are prepared to confront the requirements of sovereign governance, given the importance of segment-states in predicting the onset of these crises. However, despite the emphasis on segmented-states as territorial units within the larger common state's territory, Roeder focuses mainly on the "segmental institutions" of segmented states, rather than the territory of those states. If we expand our attention to the role of territory in secession and post-independence state-building, a natural topic to explore is the function of resources in this process.

The role of resources in conflict has been extensively studied and can offer many insights for how they matter for secession. The greed-grievance debate (Berdal, Academy.— & Malone 2000) highlights the opportunities for personal enrichment that may motivate rebel leaders or supporters (Collier & Hoeffler 2004). Often this work only looks at one piece of the puzzle. For example, Sorens (2011) argues that rebels in areas with large resource endowments are more likely to engage in territorial conflict because they hope to enjoy the benefits of these resources in the future, while Hunziker & Cederman (2017) similarly find

that oil reserves increase the likelihood of secession. However, to actually receive the benefits of these resources, rebel groups must also be able to control and administer the territory they lie within. Precious metal deposits will be of little use if there are no people who live nearby to mine them or no roads on which to transport them. The possibility of future rents is not enough to encourage a secessionist strategy if actually realizing them will be prohibitively expensive.

My argument builds on this existing work by conceiving of resources more broadly. A group which chooses a secessionist strategy must first create the institutions and elements of a state before they can realize the benefits of their new territory. While self-interested leaders could extract enough capital for personal enrichment from an incomplete state, self-determination movements that wish to establish independent homelands will find themselves stymied without a functioning state apparatus. Thus, it is not just the potential future revenues of a territory that determine the expected value of a goal, but how easy it will be to actually generate and collect those revenues.

The Biafrans chose to fight for secession in the Nigerian Civil War because their Southern corner of Nigeria contained extensive resources that they could use to bankroll their new state. The territory they inhabited within the country's Eastern Region was responsible for 65% of total oil production (Uche 2008, 111-123). Early in the conflict the Biafrans secured these oil reserves in the hopes of using them to finance the conflict. However, if the Biafrans had been successful in seceding, this oil would also have served them well in the creation of their newly independent state. A further resource that the Biafrans could draw on was the extensive agricultural sector in the region (Stremlau 1977, 218). While this agriculture could be used to help feed troops during the conflict, it would also help to support a large population in a future independent state, broadening the tax base its government would be able to draw on. Biafran territory contained a network of high-quality asphalt roads and the only rail line in the region, making the transportation of troops and equipment much easier (de St. Jorre 1972, 155). However, just as oil could be beneficial during and after the war, this transportation infrastructure could serve multiple roles as well. A hypothetical independent Biafra would have been easier to consolidate and administer thanks to this transportation network than a state that which would have to develop this infrastructure from scratch. These factors illustrate how resources can make conflict more likely by providing resources for fighting can also make secession more attractive by offering resources for a new state.

Knowing this, potential rebels confront the question of whether it will be possible to build a legitimate, stable government from scratch in territory they control, or whether it is better to continue to endure unrepresentative or hostile rule. While many factors influence how easy a territory is to govern, my argument focuses on the role of spatial ones such as

population, infrastructure, and geography.

Groups fighting for secession hope to be militarily successful and then exercise sovereign control after their victory on the field of battle. Sovereignty has two dimensions: internal capacity and legitimacy, and external legal recognition (Lake 2003). They want to exercise political power, and to successfully do so they will require both types of sovereignty. While rebel groups can try to achieve international legitimacy by signing international agreements (Jo 2015), they ultimately have little control over their degree of external recognition and legitimacy. What they do have control over is their domestic legitimacy, as the following quotation about the SPLM/A in South Sudan illustrates:

> The relative success of the SPLM/A in recent years presents it with a dilemma. It is caught between the need to create a 'quasi-state within a state' in order ensure the support of the people of the south, with all the responsibilities and expenses for administration, judiciary and welfare this implies, and the need to sustain itself as a rebel force that can defeat the government. It does not want to end up with all the disadvantages of statehood and none of its advantages in terms of recognition (Bradbury, Leader & Mackintosh 2000, 23).

Given the requirements a group needs to meet to enjoy domestic legitimacy, dissidents are more likely to launch a secessionist conflict when the territory they wish to rule is easier to govern.

Unlike the simple costly lottery model used in many studies of war e.g. (Fearon 1995, Powell 2006), the game doesn't end with the group's victory. If the entire purpose of fighting a civil war is to secure political power, then groups reasonably believe that they must be able to govern and exercise that power after the end of a conflict.

However, there is another geographic dimension of secession that I have not addressed yet: the preexisting government. Where factors like population and resource endowments get at the internal governability of territory, the ability of the state to project power into a group's territory is an aspect of governability separate from the characteristics of the territory itself.

The distance from the nexus of state power affects the governability of territory as something outside of it. Assuming they are capable of resisting, governments are unlikely to tolerate an alternative source of political authority so close to their own. Thus, it will be harder for successful rebels to create a new territorial political entity close to the center of the previous one from which they emerged. When separatist conflicts are fought far from the capital of a state, then victorious rebels will be more successful in setting up a new state because their former masters in the original state's capital will be either too far away to effectively contest the new state's authority, or will view it as less of a direct challenge

to their own authority. The farther from the centers of state power a group is located, the harder it will be for the state to exert control there, and the easier it will be for the group to uncontestedly govern and administer a new state.

Secession threatens "the integrity of the state itself" (Jenne 2007, 40), and so governments will be more resolved to defeat these movements than those fighting for regional autonomy or policy change. If groups are located closer to the capital, the government will be more able to impose costs on the group due to this distance as the ability to project power declines with distance (Boulding 1962). Accordingly, ethnic groups located more remotely should be more likely to fight a war of secession, as they will be more protected from the state's retaliation (Schutte 2015). Many studies have found that secessionist conflicts are likely to start farther from the capital (Buhaug & Gates 2002, Buhaug & Rød 2006, Cederman, Buhaug & Rød 2009), but have not investigated whether this distance can have a conditioning effect on the influence of other geographic factors. If an ethnic group is located extremely close to the capital and major economic centers of a state, trying to create a new state so close to the capital would be impossible. The group would either have to conquer enough territory to reach to an international border with a neighboring state, or it would have to govern a state entirely landlocked by the former host state.

The attractiveness of secession is thus a function of two factors: how governable a group's territory is and how difficult it is for the existing state to enforce its will within that territory. When a marginalized group inhabits a territory that is resource rich and far from the reach of the state, then secessionist conflict is most likely.

Yet secession is a strategic process and thus far we have largely ignored the role the state plays in this dyadic phenomenon. Unsurprisingly, states are not content to sit idly by and let groups try to secede with swathes of their territory. The decisions states make in the fact of this dilemma can explain why we do not observe more secessionist conflict given the plethora of aggrieved minority groups, and why governments often appear to prefer dealing with low level violence to meeting groups' demands for regional development.

2.2   Keeping a lid on it

The shortage of secessionist conflicts may mean that governments preemptively stop conflicts from occurring in the areas most prone to secession. If this is the case, we should observe governments paying extra attention to these regions and developing their coercive capacity to prevent unrest from escalating into armed conflict. This strategy can be carried out by either providing elevated levels of public goods

Ethnic homelands are special, and not exchangeable with other similar pieces of territory,

due to their importance in group myths and identity; the possession and control of homelands can even be seen as essential to the group members' understanding of identity (Toft 2003, 20). Accordingly, when ethnic groups try to secede, they attempt to take their traditional settlement areas with them. This is clearly a simplification of how wars are actually fought since rebel groups are rarely able to secede with just their preferred territory. They may only be able to liberate a subset of their homeland, or they may end up holding onto conquered territory they did not originally desire. Groups that are more or less successful will tear larger or smaller amounts of territory away from the preexisting state. While these changes will result in groups holding more or less territory than they planned to, they can still use these estimates as starting points. Groups seek to end up in control of their ethnic homelands, so states can make judgments about the risk of secession based on how difficult this territory will be to govern.

Armed with this information, states can act decisively to prevent large-scale secessionist violence. The actions of China in Xinjiang in the second decade of the 21st century provide an illustration of how this process can play out. After riots between Muslim Uyghurs and Han Chinese in the city of Urumqi killed almost 200 people in 2009 (Wong 2009), the Chinese government executed nine people it claimed were responsible for the violence (Demick 2009). However, this was just the beginning of the government's response. As a first step, Xinjiang's "security forces doubled between 2009 and 2011 to more than 11,000 people" (Coca 2018). The government has built "convenience police stations" at major intersections in cities throughout Xinjiang, which allow police officers to more easily monitor people (Wen 2017).

In addition to the increased presence of security forces, China has initiated a massive surveillance operation in the region. Cameras on streetlights utilize facial recognition technology to track the movement of people throughout the region (Millward 2018), and in Urumqi, people must use their government IDs and submit to a facial recognition scan to buy gasoline (Chin, Bürge & Marchi 2017). Government data are so comprehensive that the system can alert authorities if someone wanders more than 300 meters from their home or workplace (Phillips 2018). The government has deployed this immense security apparatus to identify potential dissidents, and UN human right experts believe that potentially up to a million Uyghurs have been detained in reeducation camps (Cumming-Bruce 2018).

Why has China dedicated so much money and human capital to a remote and underdeveloped region? While Xinjiang has never experienced a widespread armed secessionist movement, there are long-simmering desires for self-determination in the region (Bovingdon 2010). The East Turkestan Islamic Movement has demanded independence for Xinjiang's Uyghur population since the 1990s (Gunaratna, Acharya & Wang 2010, 47-88). Given these ten-

sions, the Chinese government has decided that the risks of full scale secessionist conflict justify the expense of the surveillance effort and "indoctrination campaign, which aims to eradicate . . . any yearning for an independent Uighur homeland" (Buckley 2018). This effort is part of a shift in policy towards ethnic minorities from a soviet style model that accommodates minority rights to one based on "assimilation" of groups into a single Chinese identity (Elliott 2015).

Xinjiang has all the makings of a potential secessionist conflict. It has a relatively large population for its location and is situated far from the centers of state power in Beijing. The story of Xinjiang may be replicated elsewhere and be responsible for why we do not observe more secessionist conflicts.

When the population is physically difficult for agents of the state to reach, tax revenues will be lower, and acceptance of government policies may be more difficult to obtain (Herbst 2000). In extreme cases, people may not even be aware of changes in government policies. Developing state capacity in physically remote areas is a costly process, and so when governments do so, it is likely the result of a strategic decision where the costs of administering and monitoring this remote territory are worth paying to deter potential secessionists.

The more governable a territory is, and the farther from the reaches of the state it is located, the more suited to secession it will be. The effect of governability is conditional on distance from the existing state's centers of power because newly independent states located near the previous host state will face significant harassment. We should see an increase in government attention devoted to a group's territory as it becomes more governable and farther from the state.

Lacina (2015) argues that secession is less likely in areas where the government is willing to pay high costs to defend its territory. She operationalizes this theory by assuming that governments will fight hard to defend territory occupied by the dominant ethnic group, so groups whose territory overlaps the dominant group's will be deterred from launching a secessionist campaign, and finds support for this prediction among excluded groups (Lacina 2015, 701-703). I extend her logic to argue that governments are also more willing to fight for valuable territory, and work to actively deter separatist claims within that territory. I also provide a more direct test of the mechanism of this deterrence by focusing on how governments develop their capacity in these secession prone regions.

While this theoretical argument depends on myriad factors that contribute to territorial governability and encompasses many different aspects of state power that the government can use to preempt secessionist movements, empirically testing it necessarily entails a degree of simplification. Testing it in a cross-national manner over multiple years requires a larger

degree to simplification. For the purposes of this manuscript, I limit my analysis to the broadest possible implications to facilitate the inclusion of as many cases as possible. This distillation leads to my hypothesis:

Hypothesis *The effect of territorial governability on state investment should be positive and increasing in distance from the reach of the state.*

In the following section I discuss my operationalization of governability and present the statistical test of my argument using cross national geospatial data.

3 Data and Methods

I test my argument that governments work to deter secession in the most high risk areas on a sample of all ethnic group territories from 1990 to 2013 due to the role of ethnic identity in this type of conflict. My unit of analysis is the ethnic group, so my universe of cases is all ethnic groups that have defined territories between these dates. Recent work on civil war onset has focused on ethnic groups because the shared identity of an ethnicity can channel grievances in a manner that overcomes barriers to collective action (Cederman, Buhaug & Gleditsch 2013). Since many ethnic groups have defined settlement areas, they also have a natural homeland to create a new state in, should they decide to secede (Toft 2003). If a group wishes to secede, it needs "a potential independent nation" with a territory that could serve as a "national homeland" (Orridge 1982, 46), which allows me to make comparisons across ethnic group settlement areas.

Governments cannot rely on geographic information as strongly when trying to prevent center-seeking governmental conflict because the qualities of the territory that a group inhabits are less relevant when their goal is to overthrow the government and capture the entire state. Focusing on territorial conflicts allows me to make meaningful comparisons across different areas because groups are fighting for their specific territories. While the territory that a group controls at the start of a governmental conflict might shape the dynamics of the conflict, that territory is not the end goal of the conflict.

I use geospatial data on population to measure the governability of each ethnic group's specific territory, which reflects the human resources that a group can draw on. Ethnic separatist desires are much more likely to escalate to a secessionist crisis when the group's population is larger relative to the rest of the state's population (Roeder 2007, 259-289), so population is a major component of a territory's governability. More populous territories are more governable because the people who inhabit them represent a source of capital via taxation, and labor for achieving the new government's ends.

The effect of population is moderated by the territory's distance from the capital because secession is infeasible if the new state is located right next to the previous state's centers of power. States do not take secession lightly, and any new state would have to contend with constant interference from its previous host. As such, the effect of population on risk of secession should be stronger as distance from the capital increases.

By maintaining a large military presence in an excluded group's territory, the state may be able to deter a secessionist uprising. Similarly, the government can forcibly relocate populations to less governable areas, as the Soviet Union frequently did in the mid 20th century. Governments can also encourage members of dominant ethnic groups to migrate to secession-prone remote territories inhabited by minorities, like the Javanese migration to Aceh. I use the fact that nighttime light emissions correlate strongly with government activity to conduct a cross national test of this hypothesis. If governments are indeed trying to make secession too costly, then more governable territory should also have higher levels of nightlights.

3.1 Universe of cases

In order to measure the territorial governability of different ethnic group territories, I draw on geospatial data. I use the GeoEPR (Wucherpfennig, Weidmann, Girardin, Cederman & Wimmer 2011) dataset, which is a geocoded extension of the EPR data (Vogt, Bormann, Rüegger, Cederman, Hunziker & Girardin 2015). Each ethnic group with a defined territorial settlement pattern has a polygon in the GeoEPR data.[1] As I am interested in preemption of secessionist conflict, I use the least aggregated level of observation, which splits ethnic groups along state borders. For example, the GeoEPR data have polygons for Kurds in Iraq, Syria, and Turkey, so each of these group-state dyads are a separate entry in the data. I use territory-years because population and nightlights vary yearly, as do many control variables.

Although this sample necessarily involves omitting potential non-ethnic conflicts from my study, there is significant evidence that the ascriptive nature of ethnic identity channels political grievances in a more effective manner than other identities such as class or ideology (Cederman, Buhaug & Gleditsch 2013) and lowers barriers to collective action (Lichbach 1995), so focusing on ethnic conflicts is appropriate because they are likely to follow qualitatively different causal pathways than non-ethnic ones. Empirically, secession is almost purely an ethnic phenomenon, so focusing on ethnic groups allows me to uncover the effects of territorial governability on government preemption efforts. I exclude groups with a monopoly on political power, because by definition they are in power and are not worried

---

[1]The exclusion of groups without defined geographic settlement patterns does not bias my analysis because the proposed causal mechanism could not function for geographically dispersed or nomadic groups.

about themselves seceding.[2] While governments may not deploy extensive surveillance infrastructure against politically powerful groups, they may still provide them with elevated levels of public goods if they are located in areas prone to secession.

The more governable a territory is, and the farther from the reaches of the state it is located, the more suited to secession it will be. More populous territories are more governable because the people who inhabit them represent a source of capital via taxation, and labor for achieving the new government's ends. The effect of population is conditional on distance from the existing state's centers of power because newly independent states located near the previous host state will face significant harassment. We should see an increase in the level of nightlights in a group's territory as it becomes more populous and farther from the state.

3.2   Government attention

One of the most important factors affecting the governability of a given piece of territory is the degree to which the government is able to impact the lives of its citizens. This concept has been explored before at the state level with the idea of political penetration (Kugler & Tammen 2012). However, these measures are insufficient for explaining the goals that a rebel group will pursue because territorial groups are only interested in part of a state's territory. Instead, we require subnational data to measure the degree of government reach into specific ethnic group territories.

To accomplish this, I data on use nighttime light emissions. While nightlights are a reliable proxy for economic activity in a given area (Cederman, Weidmann & Bormann 2015, Kuhn & Weidmann 2015, Weidmann & Schutte 2016), they are also an indicator for state capacity in an area. Electrification is often a tool used by the government in developing states to extend their reach into rural areas (Kale 2014). Similarly, nighttime lights correlate with tax revenue and state capacity at the municipal level (Harbers 2014), as well as the number of government employees or medical clinics in a district (Koren & Sarbahi Forthcoming). Nightlights are a globally available method to measure government activity, which means they can be used even for countries with poor or nonexistent data (Chen & Nordhaus 2011), which are also the countries most at risk for civil conflict. Further, they are largely immune to government incentives to misrepresent economic statistics. The higher the capacity of a state in a given territory, the more nighttime light will be observable.

If nightlights are a proxy for state capacity, then they can also indicate the degree of at-

---

[2]I keep groups whose political power is dominant or who are senior partners in a government, because these powerful groups may still rebel if they have recently had their political power downgraded (Cederman, Wimmer & Min 2010). Monopoly groups are excluded because as the top category, they cannot have been recently downgraded.

tention that a government invests in a specific region. Figure 2 shows how China's investment in Xinjiang is visible as relatively bright nighttime light emissions despite its comparatively low levels of population.

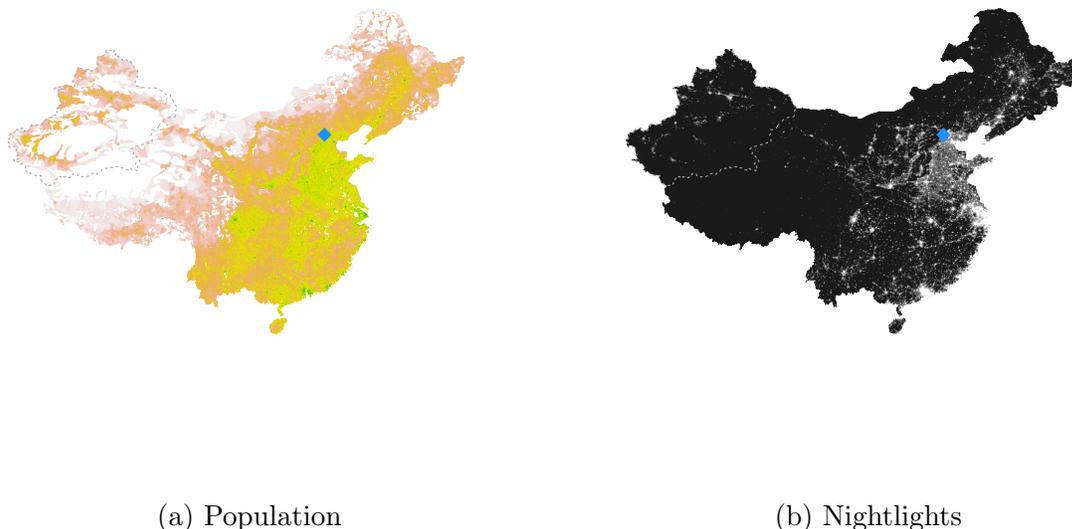(a) Population   (b) Nightlights

Figure 2: China in 2013. Panel (a) displays (log) population and Panel (b) displays nightlights. The gray dashed line denotes the Xinjiang Uyghur Autonomous Region, while Beijing is represented by the blue diamond.

The specific dataset that I use to measure nighttime light emissions is the Defense Meteorological Satellite Program (DMSP) Operational Linescan System (OLS) (Elvidge, Erwin, Baugh, Ziskin, Tuttle, Ghosh & Sutton 2009), which measures average light emissions over the course of a year at 30 arc-second grid cells (approximately 1km × 1km at the equator). One of the main downsides of the DMSP OLS data is that they are unable to distinguish variation within urban areas where light levels are high due to saturation from neighboring pixels (Hsu, Baugh, Ghosh, Zhizhin & Elvidge 2015). In these cases, all pixels in a saturated area receive the maximum value. This phenomenon can be clearly seen in the area around Beijing in Figure 2b. Luckily, I am interested in variation between entire ethnic group territories, not within individual cities, so this is less problematic for my analyses.

For each territory, I follow the 'cookie cutter' approach (Cederman, Buhaug & Rød 2009, Cederman, Weidmann & Gleditsch 2011, Cederman, Weidmann & Bormann 2015) of using the territory polygon to capture all values of all nightlights cells that fall within the group's territory, accounting for overlapping group polygons when necessary. For each raster cell in the nightlights data, I divide the cell value by the number of group polygons that cover it.

For example, a substantial portion of the Syrian Kurds' settlement area overlaps with areas inhabited by Sunni Arabs. Each raster cell in these areas has its nightlights value divided by 2 before aggregation to the group level, so the Kurds and the Sunnis each receive half of the cell's nightlights. While equal distribution of nightlights, and thus state capacity, between overlapping territories is a strong assumption, it introduces less bias than ignoring the problem. Doing nothing double counts the nightlights of overlapping cells, resulting in the state devoting 'extra' attention relative to the total investment in a given region.

Another shortcoming of these data is that the units of brightness are not inherently meaningful and are not stable over time. In addition to sensor drift within a satellite over time, values are not comparable across satellites. The maximum value in the data is 63, but that does that not mean that 63 in two years of the same satellite is equivalent, or that 63 between two satellites is equivalent. Users of the data have developed an intercalibration method to deal with these issues (Wu, He, Peng, Li & Zhong 2013). Essentially, geographic regions that do not vary over time are identified, one year of data is chosen as a reference raster, and then a model is fit using all other years to explain the invariant region in reference year. The coefficients of this model represent the difference between a given satellite-year and the reference raster. Once this model is trained, it is applied to the rest of the world, adjusting estimates for all other years so that they can be compared to the reference year. Following Wu et al. (2013), I select the Japanese prefecture of Okinawa, the American territory of Puerto Rico, and the nation of Mauritius as invariant regions to calibrate the DMSP OLS data.

3.3   Territorial governability

Higher population density lowers barriers to collective action, facilitating the organization and execution of armed rebellion (Weidmann 2009). Once a conflict begins, individual locations are more likely to experience rebel violence if they have high population density for the same reason (Raleigh & Hegre 2009, Daly 2012, Braithwaite & Johnson 2015). The more tightly concentrated populations are, the more feasible any political action becomes, suggesting that the post-independence process of state-building may be easier in more densely populated areas.

The historical experiences of state formation suggest that population density plays a role in which goal a rebel group will choose. Societies where people were concentrated in specific geographic areas were able to consolidate faster and develop more robust institutions due to the lower cost of administering centralized populations. This framing moves beyond the traditional focus on population as merely a catalyzing factor in collective action (Daly

2012, Raleigh & Hegre 2009, Weidmann 2009, Zhukov 2012, Braithwaite & Johnson 2011), which cannot predict which type of conflict is more likely. By comparing population across territories inhabited by potential rebel groups, we can get an idea of how it influences the likelihood of secession.

To measure the population of a group's territory, I rely on the Gridded Population of the World (GPW) data. These data have been collected by NASA's Socioeconomic Data and Applications Center (Center for International Earth Science Information Network - CIESIN - Columbia University; United Nations Food and Agriculture Programme - FAO; Centro Internacional de Agricultura Tropical - CIAT 2005, Center for International Earth Science Information Network - CIESIN - Columbia University 2015). The data contain quinquennial estimates of population density for the entire world at the 30 arcsecond level, which is approximately $1km^2$ at the equator.[3] I follow the same 'cookie cutter' approach to measuring nightlights to measure population, and make the same correction for overlapping ethnic group territories.

As these data are only available in five year intervals, I linearly interpolate the data for the intervening years. While a rather blunt method of imputation, there are two main reasons that this approach is appropriate. First, measuring population on a yearly time scale already involves significantly loss of information. Second, a parametric imputation approach that uses variables observed in all years would either only be able to use country level variables, or would require the collection of significant amount of data at the subnational level, which is prohibitively time consuming. In either case, such an approach is unlikely to improve sufficiently over linear interpolation to justify the time and effort.

3.4   Capital distance

The remaining spatial measure, which conditions the effect of population, is the distance from a group's territory to the capital. Obtaining this distance is relatively straightforward. I use data from the CShapes dataset (Weidmann, Kuse & Gleditsch 2010) on the geography of states which provides the geographic location of capitals for all major states from 1945 to the present. Combining these data with ethnic group locations from EPR allows me to measure the distance between the centroid of a group's territory and the capital.

3.5   Control variables

In order to account for other important causal forces, I include a number of non-spatial control variables, which I refer to as political controls. Many of these capture aspects of a

---

[3]The farther from the equator, the greater the distortion in latitude.

group's organizational structure or capabilities. Politically excluded groups are more likely to be shut out from public goods (Cederman, Buhaug & Gleditsch 2013), so I code a group as *excluded* from political power if their political status is 'state collapse,' 'self-exclusion,' 'discriminated,' or 'powerless' according to EPR. I also include a measure of whether a group has *lost autonomy* in the past five years because these group are the most likely to start a secessionist conflict (Siroky & Cuffe 2015), and thus the most likely to receive elevated state attention.

I also include a number of regime based controls to reflect the fact that groups do not make these decisions in a vacuum. Factors such as regime type and age (Marshall, Gurr & Jaggers 2014), monetary resources, and military capability (Singer 1988) all influence the government's ability and willingness to inflict costs on rebels if they choose the more extreme goal of secession. To account for these effects, I include measures of *polyarchy* from V-Dem (Coppedge, Gerring, Lindberg, Skaaning, Teorell, Altman, Andersson, Bernhard, Fish & Glynn 2017) which captures the degree to which electoral democracy is realized in a country and *GDP per capita* (World Bank 2018) to proxy for overall state capacity.

3.6   Model

As nightlights are a continuous outcome variable, I analyze them with linear regression. To account for unobserved similarities in the data, I use a model with random intercepts $\boldsymbol{\alpha}$ by country. This controls for the possibility that some countries are more likely to deploy resources in certain areas than others. I also include random intercepts $\boldsymbol{\gamma}$ by year to account for unmodeled temporal heterogeneity. Equations 3.1-3.5 present this model, along will all priors and hyperpriors. I employ diffuse regularizing hyperpriors on all parameters in the model to avoid overfitting the data. The response variable is the total amount of luminosity recorded in a group's territory in a given year, which represents the amount of state capacity in that territory, and thus the level of attention the government has devoted to maintaining control of that territory.

$$Y \sim \mathcal{N}(\boldsymbol{\alpha} + \mathbf{X}\boldsymbol{\beta}, \sigma^2) \tag{3.1}$$

$$\boldsymbol{\beta} \sim \mathcal{N}(\mu_\beta, \sigma_\beta) \tag{3.2}$$

$$\boldsymbol{\alpha} \sim \mathcal{N}(\mu_\alpha, \sigma_\alpha) \tag{3.3}$$

$$\mu_\alpha, \mu_\beta \sim \mathcal{N}(0, 5) \tag{3.4}$$

$$\sigma_\alpha, \sigma_\beta, \sigma \ \sim \text{half-Cauchy}(0, 2.5) \tag{3.5}$$

	Model 1	Model 2
Population	0.81*	
	[0.81; 0.82]	
Capital Distance		−0.49*
		[−0.51; −0.47]
(Constant)	0.09	−0.06
	[−0.13; 0.32]	[−0.21; 0.12]
σ_α	0.60*	0.92*
	[0.53; 0.68]	[0.82; 1.02]
σ_γ	0.50*	0.12*
	[0.37; 0.68]	[0.09; 0.16]
WAIC	11675.11	26382.74
5-fold RMSE	0.37	0.63
Observations	13876	13876

* 0 outside 95% credible interval

Table 1: Linear models explaining nightlights as a function of ethnic group population and capital distance. The standard deviation of the country and year random intercepts are represented by σ_α and σ_γ, respectively. Continuous variables logged and standarized.

4   Results

I estimate four models using the data described above. The first two include only population and capital distance, the third includes and their interaction and the size of a group's territory, while the fourth includes all political control variables discussed above.[4]

The bivariate relationships between population, capital distance, and nightlights are unsurprising. The correlation between group population and nightlights is 0.59 and the correlation between capital distance and nightlights is -0.09. More people means more state penetration, while governments are less likely to have a presence in areas far from the capital. However, a bivariate correlation does not account for unobserved heterogeneity in the data due to the dependent nature of observations across country-years. Table 1 presents the results of the Bayesian linear model with random intercepts by country and year, which results in a substantially more negative association between capital distance and nightlights. The logged and scaled nightlights variable ranges from -1.67 to 2.17, so the -0.49 effect of a one unit increase in logged and scaled capital distance on nightlights represents a substantively meaningful -12.78% decrease.

However, the theoretical argument about the relationship between geography and state

---

[4]Standard diagnostics indicate good convergence of the chains and full MCMC diagnostics are available in the Supplemental Information.

penetration into ethnic group territories states that this penetration should be higher when the risk of a group seceding is higher. This again implies a conditional relationship in the statistical model. Territory is most suited to secession when it is more governable and located farther from the reach of the state. Using the population of an ethnic group's territory as a measure of its governability, and hence viability as an independent state, this argument implies that the effect of population on nightlights should be increasing in distance from the capital.

	Model 3	Model 4
Population	0.73*	0.72*
	[0.71; 0.75]	[0.70; 0.74]
Capital Distance	−0.15*	−0.15*
	[−0.17; −0.14]	[−0.17; −0.14]
Population Total × Capital Distance	0.03*	0.03*
	[0.02; 0.03]	[0.02; 0.04]
Area	0.05*	0.05*
	[0.04; 0.07]	[0.04; 0.06]
Excluded		−0.02
		[−0.04; 0.00]
Dominant Group Presence		0.05*
		[0.03; 0.07]
Lost Autonomy		0.07
		[−0.02; 0.15]
GDP_{PC}		0.14*
		[0.11; 0.17]
Polyarchy		0.03*
		[0.01; 0.05]
(Constant)	0.05	−0.02
	[−0.15; 0.25]	[−0.22; 0.18]
σ_α	0.60*	0.48*
	[0.54; 0.68]	[0.42; 0.54]
σ_γ	0.46*	0.43*
	[0.34; 0.64]	[0.32; 0.59]
WAIC	11207.09	11113.22
5-fold RMSE	0.36	0.36
Observations	13876	13876

* 0 outside 95% credible interval

Table 2: Linear models explaining nightlights as a function of ethnic group population and capital distance. The standard deviation of the country and year random intercepts are represented by σ_α and σ_γ, respectively. Continuous variables logged and standarized.

Table 2 presents results from this conditional specification. Model 3 includes geographic

20

variables measured in each group's territory, while Model 4 includes country level variables to control for regime type and state capacity.[5] The introduction of country level control variables does not significantly affect the estimates for the effect of capital distance and population, suggesting that they are strongly related to the level of nightlights within a territory.
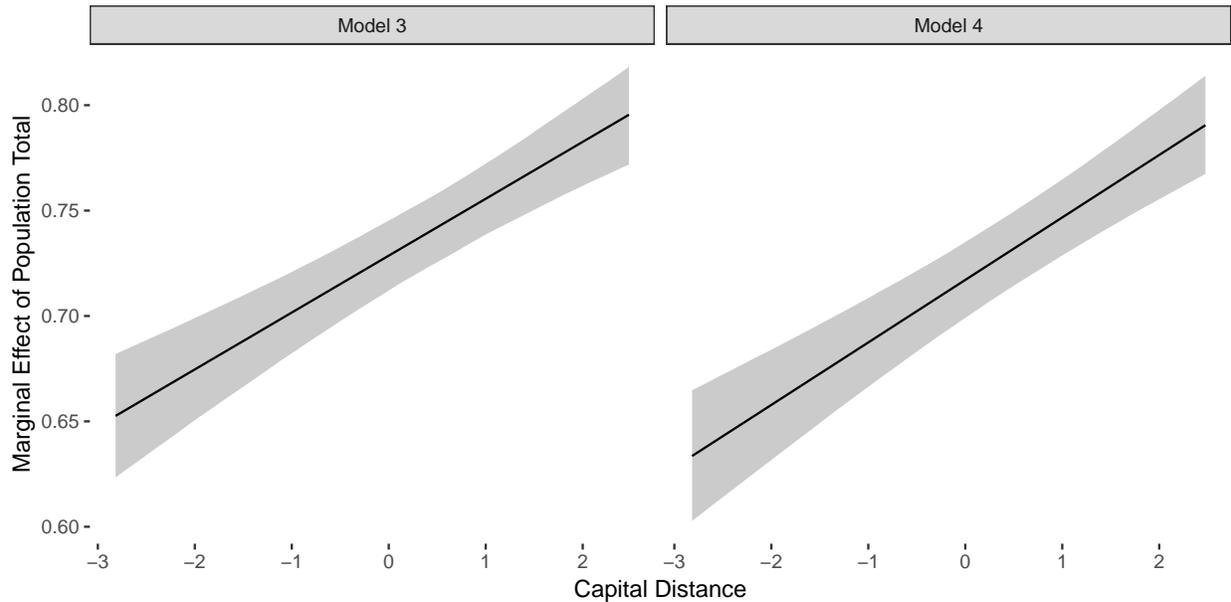

Figure 3: Marginal effects of ethnic group population on nighttime light levels, conditional on distance to the capital.

Figure 3 presents the marginal effect of population on nightlights from Models 3 & 4. In both models, the marginal effect of population on nightlights is positive and increasing in capital distance. The maximum marginal effect in Model 3 is 0.80, so the effect of a one unit shift in logged and scaled population represents a 14.70% shift in the outcome variable. The maximum marginal effect in Model 4 is 0.79, which corresponds with a 14.61% shift in the outcome variable. This effect is substantially larger than the effect of any control variables in Model 4, suggesting that the suitability of territory to independent governance plays a significant role in government decisions to invest in a given area. The combination of population and capital distance has a substantively meaningful effect on the level of nightlights within a given ethnic group's territory. Moving from two standard deviations below the mean of capital distance to two above results in an increase in the marginal effect of population on nightlights of 0.11, which corresponds to a 2.02% shift across the observed

---

[5]Omitting groups with a monopoly on political power, or who dominate the political system within a country (Cederman, Weidmann & Gleditsch 2011) does not substantively affect the results of the analysis; see the Supplemental Information.

range of nightlights.

Exclusion's negative estimate makes sense given that excluded groups are often shut off from access to state resources. However, groups that have lost regional autonomy have a higher nightlights value, which suggests that states are paying special attention to those groups because they are at the highest risk of secession (Siroky & Cuffe 2015). Similarly, groups whose territory overlaps the dominant group's have higher levels of nightlights, reflecting the government's interest in these regions (Lacina 2015). GDP per capita and Polyarchy are also both positive, which aligns with our expectations.

Comparing the fit of Models 3 & 4 shows that the inclusion of country and group level control variables mildly improves the in-sample predictive accuracy of the model. The Watanabe-Akaike information criteria (WAIC) is akin to AIC and BIC in likelihood based models (Gelman, Hwang & Vehtari 2013). Interpretation is the same as AIC and BIC, with lower values representing a better fitting model. Similarly, WAIC penalizes the inclusion of extra parameters, so Model 4 better explains the data than Model 3, despite increasing the number of free parameters. However, the change in WAIC from Model 3 to 4 is smaller than the change from Models 1 & 2 to 3, suggesting that geographic factors explains more of the variation in nightlights than political ones do.

However, WAIC is a measure of in-sample fit, and we must assess out of sample fit as well. I perform k-fold cross-validation on Models 1-4 with $k = 4$, computing the mean squared error (MSE) for each fold, and present the average MSE for all 5 folds in Tables 1 % 2. Model 2 has the worst MSE, followed by Model 1, and Models 3 & 4 have the lowest MSE. The addition of the political control variables in Model 4 does not substantially improve out-of-sample accuracy. The marginal difference in 5-fold MSE between Models 3 & 4 suggests that territorial governability drives much of state resource allocation decisions.

Figure 4 presents the predicted value of nightlights as a function of capital distance and population, which allows us to get a more complete sense of the relationship between them. Predicted nightlights values are highest when capital distances are lowest and population is highest, which makes sense as territory close to the capital is often inhabited by ethnic groups in power and the state if frequently capable there.

At first brush, we would expect the level of state involvement to decline with distance from the capital as it becomes more difficult for the agents of state to travel to various locations. While distance still has a negative effect on state presence within a group's territory, highly populated territories have higher levels of state attention than similarly populous territories located closer to the centers of state power. Given the increasing cost of government activity in these more remote locations, this relationship suggests that there must be a particularly compelling reason for governments to make these investments. Fear of secession and loss of
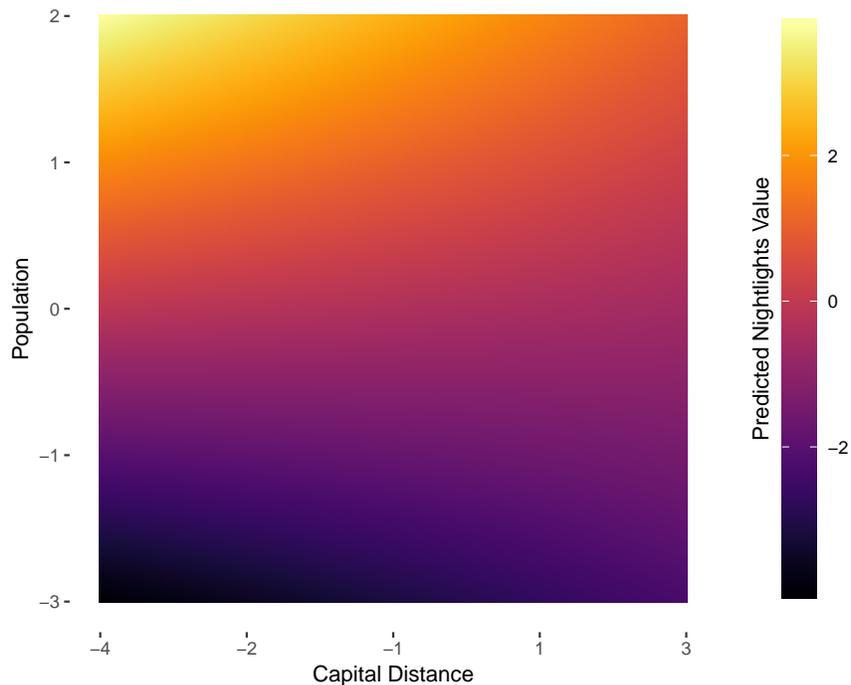
Figure 4: Predicted nightlights as a function of capital distance and population.

territory is a valid concern that justifies such costly behavior.

However, the smooth prediction surface highlights the simplification entailed in the model and emphasizes that it may not reflect more complicated relationships between capital distance, population, and nightlights. To address these concerns, I fit a random forest model to the data. A random forest is an ensemble of regression trees (Breiman 1984), each trained on a subset of the data (Breiman 2001). While random forests are designed to maximize predictive accuracy, they can also be used to detect nonlinearities in the relationship between variables and outcomes (Breiman 1984).

Figure 5 presents a partial dependence plot (Friedman 2001, Greenwell 2017) of the relationship between population, capital distance, and nightlights.[6] A slight nonlinearity is observable in the lower 2/3 of the plot, where areas with lower population have higher nightlights close to the capital and very far away. This pattern supports my argument that states are increasing their capacity in areas most prone to secession because similarly

---

[6]This model includes population, capital distance, and the size of a group's territory as predictors. For full details, see the Supplemental Information.
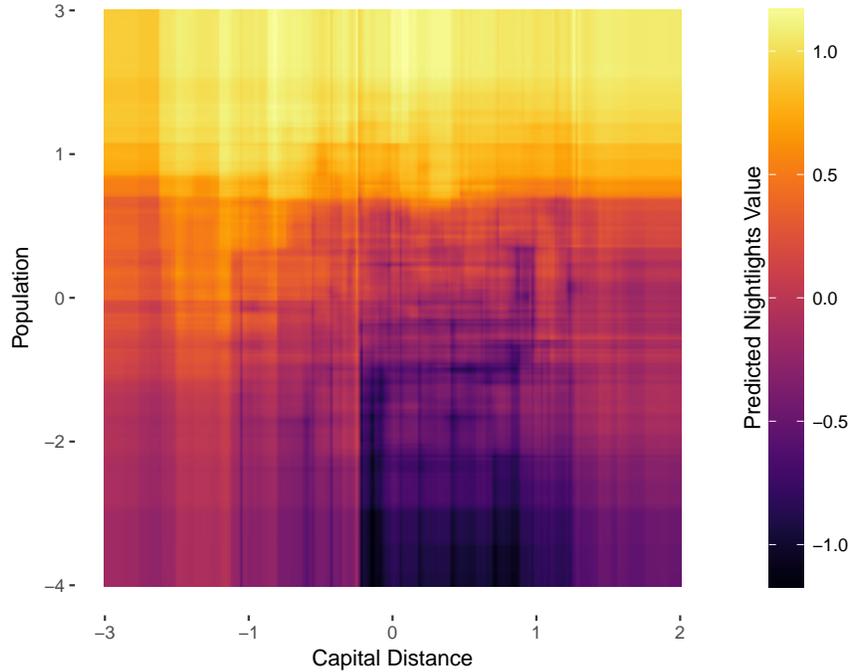
Figure 5: Partial dependence of nightlights on capital distance and population.

populated areas at a middling distance from the capital have lower nightlights values. State capacity is naturally high in areas close the the capital, and strategically high in areas far from the capital and more governable.

5   Discussion and Conclusion

The marginal effect of population on nightlights is positive and increasing as distance from the capital increases. The magnitude of the effect is substantively meaningful, which means that remote areas with high populations receive more government attention than comparably populated areas closer to the centers of state power. This suggests that governments are strategically deploying resources to regions that are more likely to secede. This forward thinking behavior explains why we fail to observe more secessionist conflicts despite the abundance of aggrieved minorities living in governable territory.

These findings highlight an important disconnect that is often overlooked in studies of space and conflict. Geography is static when compared with the dynamism of politics.

While the political fortunes of ethnic groups may shift quickly, the territory they inhabit remains largely unchanged. This means that all actors involved in a conflict have relatively equal information about the geography within a country and can use this knowledge to their benefit. Since governments can devote their considerable resources to shutting down secessionist movements in the most likely places, then the ones that do arise may originate in territory that is less suited to secession. The prominent place of oil as a cause of secession also suggests that secessionist violence is most likely when the resources at stake can contribute to discontinuous shifts in the balance of power between governments and dissidents.

This theory also explains multiple phenomena internationally. Governments may strategically keep secession prone regions underdeveloped in order to deter self-determination movements from launching wars of independence. While underdevelopment may lead to political grievances and low level violence, states are taking a calculated risk that it is better to keep these regions unhappy but dependent than to inadvertently give them the tools for governance and spark a secessionist conflict.

Similarly, while we know that 'sons of the soil' conflicts can drag on indeterminately (Weiner 1978, Fearon 2004), we know less about why states engage in the internal colonization practices that often trigger the them (Fearon & Laitin 2011). One possibility is that they are the result of people in highly governable regions chafing under military controls or responding to the influx of majority group members such monitoring efforts entail (Bhavnani & Lacina 2015). Such conflicts are not particularly costly to fight, and keeping the military close at hand ensures that dissidents do not have the space to mobilize a mass movement for secession unchallenged. As such, governments may prefer the risk of sparking a low intensity sons of the soil conflict over the possibility of losing a secessionist civil war.

Government efforts to preempt secession are often successful because territory is relatively fixed in comparison to the political processes responsible for civil conflict. While populations change as people migrate and cities grow, these changes typically occur at a glacial pace, so governments have the same information as rebel groups. Given this relative informational symmetry, governments can act preemptively to try and prevent territorial conflicts from erupting. Given the graver threat that secessionist conflicts pose, governments should be more willing to commit resources to preventing them than autonomy seeking ones. Population has a positive effect on nightlights conditional on distance from the capital, which means that nightlights are higher in highly populated areas farther from the capital than closer ones. This suggests that government are concerned about secessionist conflicts and devote more resources to suppressing them where they are more likely.

This pattern implies that the same thing that makes a territory suitable for secession also makes the government more inclined to work to retain it. While guerrillas and coun-

terinsurgents fight for hearts and minds as a way to win the war, they are also engaged in a struggle for the population's support in the post-conflict period. Each side wants to attract and retain supporters as people are necessary for a state to function.

Since both governments and rebel movements are competing for the same pool of people, there are strong selection effects at play in the onset of civil wars. This suggests that we need to move beyond thinking about selection processes at the national level, as many studies do, to thinking about them at the subnational level.

The ability of states to preempt potential secessionist movements in the regions where they are most likely to succeed highlights an important power asymmetry we must consider when thinking about the effect of geography on conflict. While governments and rebel groups are likely to have similar levels of knowledge about geography due to its relatively static nature, governments will be better able to exploit this knowledge due to their disproportionately larger resources.

When drastic changes occur due to internal displacement from conflict, deliberate relocation campaigns, or local population booms in cities, groups may capitalize on these discontinuous shifts in population to launch secessionist campaigns. However, these rapid shifts will be largely obscured in cross-national yearly data, which may explain why these data fail to find a strong relationship between territory and group goal. The discovery of petroleum reserves can often trigger a discontinuous shift in the power of a minority group, which may explain why there is a link between oil and secessionist violence. The secessionist conflicts we do observe are likely to result of governments' inability to adapt quickly enough after a sudden change in the governability of an excluded group's territory. Another possibility is that the delay between changes in the governability in a group's territory and the state learning about these changes could give the group a narrow window to act before the state increases its commitment to the area.

The observed pattern of states directing more attention to more secession prone areas highlights the very real relationship between territorial governability and secession. However, this study cannot directly test my argument. Nightlights are a rough proxy for state capacity, and governability is determined by many more factors than just population. Future work should directly investigate the ways in which states seek to preempt secession. When do they use carrots, and when to they use sticks? Are there public goods that states can provide which don't lead to durable increases in the governability of a territory?

References

Acemoglu, Daron, Simon Johnson & James A Robinson. 2001. "The Colonial Origins of Comparative Development: An Empirical Investigation." *American Economic Review* 91(5):1369–1401.

Akwagyiram, Alexis. 2017. "Main Ethnic Group in Nigeria's Delta Oil Hub Criticises Army Exercise." *Reuters* .

Anderson, Benedict. 1983. *Imagined Communities: Reflections on the Origin and Spread of Nationalism.* London: Verso.

BBC. 2016. "Nigeria Arrests 'Avengers' Oil Militants." *BBC* .

Berdal, Mats, International Peace Academy.— & David Malone. 2000. *Greed & Grievance: Economic Agendas in Civil Wars.* Boulder, Colo.: Lynne Rienner Publishers.

Bhavnani, Rikhil R. & Bethany Lacina. 2015. "The Effects of Weather-Induced Migration on Sons of the Soil Riots in India." *World Politics* 67(4):760–794.

Boulding, Kenneth. 1962. *Conflict and Defense: A General Theory.* New York: Harper.

Bovingdon, Gardner. 2010. *The Uyghurs: Strangers in Their Own Land.* New York: Columbia University Press.

Bradbury, Mark, Nicholas Leader & Kate Mackintosh. 2000. The 'Agreement on Ground Rules' in South Sudan. Humanitarian Policy Group Report 4 Overseas Development Institute.

Braithwaite, Alex & Shane D. Johnson. 2011. "Space–Time Modeling of Insurgency and Counterinsurgency in Iraq." *Journal of Quantitative Criminology* 28(1):31–48.

Braithwaite, Alex & Shane D. Johnson. 2015. "The Battle for Baghdad: Testing Hypotheses About Insurgency From Risk Heterogeneity, Repeat Victimization, and Denial Policing Approaches." *Terrorism and Political Violence* 27(1):112–132.

Breiman, Leo. 1984. *Classification and Regression Trees.* New York, N.Y.: Chapman & Hall.

Breiman, Leo. 2001. "Random Forests." *Mach. Learn.* 45(1):5–32.

Buckley, Chris. 2018. "The Leaders Who Unleashed China's Mass Detention of Muslims." *The New York Times* .

Buhaug, Halvard & Jan Ketil Rød. 2006. "Local Determinants of African Civil Wars, 1970–2001." *Political Geography* 25(3):315–335.

Buhaug, Halvard & Scott Gates. 2002. "The Geography of Civil War." *Journal of Peace Research* 39(4):417–433.

Cederman, Lars-Erik, Andreas Wimmer & Brian Min. 2010. "Why Do Ethnic Groups Rebel?: New Data and Analysis." *World Politics* 62(1):87–119.

Cederman, Lars-Erik, Halvard Buhaug & Jan Ketil Rød. 2009. "Ethno-Nationalist Dyads and Civil War A GIS-Based Analysis." *Journal of Conflict Resolution* 53(4):496–525.

Cederman, Lars-Erik, Halvard Buhaug & Kristian Skrede Gleditsch. 2013. *Inequality, Grievances, and Civil War.* New York: Cambridge University Press.

Cederman, Lars-Erik, Nils B. Weidmann & Kristian Skrede Gleditsch. 2011. "Horizontal Inequalities and Ethnonationalist Civil War: A Global Comparison." *The American Political Science Review* 105(3):478–495.

Cederman, Lars-Erik, Nils B. Weidmann & Nils-Christian Bormann. 2015. "Triangulating Horizontal Inequality Toward Improved Conflict Analysis." *Journal of Peace Research* 52(6):806–821.

Center for International Earth Science Information Network - CIESIN - Columbia University. 2015. Gridded Population of the World, Version 4 (GPWv4): Population Density. Technical report NASA Socioeconomic Data and Applications Center (SEDAC) Palisades, NY: .

Center for International Earth Science Information Network - CIESIN - Columbia University; United Nations Food and Agriculture Programme - FAO; Centro Internacional de Agricultura Tropical - CIAT. 2005. Gridded Population of the World, Version 3 (GPWv3): Population Count Grid. Technical report NASA Socioeconomic Data and Applications Center (SEDAC) Palisades, NY: .

Chen, Xi & William D. Nordhaus. 2011. "Using Luminosity Data as a Proxy for Economic Statistics." *Proceedings of the National Academy of Sciences* 108(21):8589–8594.

Chin, Josh, Clément Bürge & Giulia Marchi. 2017. "Twelve Days in Xinjiang: How China's Surveillance State Overwhelms Daily Life." *Wall Street Journal* .

Clapham, Christopher. 1996. *Africa and the International System: The Politics of State Survival.* Cambridge ; New York: Cambridge University Press.

Clapham, Christopher. 1998. "Degrees of Statehood." *Review of International Studies* 24(2):143–157.

Coca, Nithin. 2018. "China's Xinjiang Surveillance Is the Dystopian Future Nobody Wants." https://www.engadget.com/2018/02/22/china-xinjiang-surveillance-tech-spread/.

Cohen, Youssef, Brian R. Brown & A. F. K. Organski. 1981. "The Paradoxical Nature of State Making: The Violent Creation of Order." *The American Political Science Review* 75(4):901–910.

Collier, Paul & Anke Hoeffler. 2004. "Greed and Grievance in Civil War." *Oxford Economic Papers* 56(4):563–595.

Coppedge, Michael, John Gerring, Staffan I. Lindberg, Svend-Erik Skaaning, Jan Teorell, David Altman, Frida Andersson, Michael Bernhard, M. Steven Fish & Adam Glynn. 2017. "V-Dem Codebook V7.".

Cumming-Bruce, Nick. 2018. "U.N. Panel Confronts China Over Reports That It Holds a Million Uighurs in Camps." *The New York Times* .

Cunningham, Kathleen Gallagher. 2014. *Inside the Politics of Self-Determination*. New York, NY: Oxford University Press.

Daly, Sarah Zukerman. 2012. "Organizational Legacies of Violence Conditions Favoring Insurgency Onset in Colombia, 1964–1984." *Journal of Peace Research* 49(3):473–491.

de St. Jorre, John. 1972. *The Nigerian Civil War*. Hodder and Stoughton.

Demick, Barbara. 2009. "China Executes 9 for Role in Xinjiang Riots." *Los Angeles Times* .

Elliott, Mark. 2015. "The Case of the Missing Indigene: Debate Over a "Second-Generation" Ethnic Policy." *The China Journal* 73:186–213.

Elvidge, C. D., E. H. Erwin, K. E. Baugh, D. Ziskin, B. T. Tuttle, T. Ghosh & P. C. Sutton. 2009. Overview of DMSP Nightime Lights and Future Possibilities. In *2009 Joint Urban Remote Sensing Event*. pp. 1–5.

Englebert, Pierre. 2000. *State Legitimacy and Development in Africa*. Boulder, Colo.: Lynne Rienner Publishers.

Fearon, James D. 1995. "Rationalist Explanations for War." *International Organization* 49(3):379–414.

Fearon, James D. 2004. "Why Do Some Civil Wars Last so Much Longer than Others?" *Journal of Peace Research* 41(3):275–301.

Fearon, James D. & David D. Laitin. 2011. "Sons of the Soil, Migrants, and Civil War." *World Development* 39(2):199–211.

Friedman, Jerome H. 2001. "Greedy Function Approximation: A Gradient Boosting Machine." *The Annals of Statistics* 29(5):1189–1232.

Gellner, Ernest. 1983. *Nations and Nationalism*. Ithaca: Cornell University Press.

Gelman, Andrew, Jessica Hwang & Aki Vehtari. 2013. "Understanding Predictive Information Criteria for Bayesian Models." *Statistics and Computing* 24(6):997–1016.

Gleditsch, Nils Petter, Peter Wallensteen, Mikael Eriksson, Margareta Sollenberg & Håvard Strand. 2002. "Armed Conflict 1946-2001: A New Dataset." *Journal of Peace Research* 39(5):615–637.

Greenwell, Brandon M. 2017. "Pdp: An R Package for Constructing Partial Dependence Plots." *The R Journal* 9(1):421–436.

Gunaratna, Rohan, Arabinda — Acharya & Pengxin — Wang. 2010. *Ethnic Identity and National Conflict in China*. 1st ed. ed. New York: Palgrave Macmillan.

Harbers, Imke. 2014. "Taxation and the Unequal Reach of the State: Mapping State Capacity in Ecuador." *Governance* 28(3):373–391.

Herbst, Jeffrey. 2000. *States and Power in Africa: Comparative Lessons in Authority and Control*. Princeton, N.J.: Princeton University Press.

Horowitz, Donald. 1991. Irredentas and Secessions: Adjacent Phenomena, Neglected Connections. In *Irredentism and International Politics*, ed. Naomi Chazan. Boulder, Colo.: Adamantine Press pp. 9–22.

Hsu, Feng-Chi, Kimberly E. Baugh, Tilottama Ghosh, Mikhail Zhizhin & Christopher D. Elvidge. 2015. "DMSP-OLS Radiance Calibrated Nighttime Lights Time Series with Intercalibration." *Remote Sensing* 7(2):1855–1876.

Hunziker, Philipp & Lars-Erik Cederman. 2017. "No Extraction without Representation: The Ethno-Regional Oil Curse and Secessionist Conflict." *Journal of Peace Research* 54(3):365–381.

Jenne, Erin. 2007. *Ethnic Bargaining: The Paradox of Minority Empowerment*. Ithaca: Cornell University Press.

Jo, Hyeran. 2015. *Compliant Rebels: Rebel Groups and International Law in World Politics*. Cambridge: Cambridge Univ Press.

Kale, Sunila. 2014. *Electrifying India: Regional Political Economies of Development*. Stanford, California: Stanford University Press.

Koren, Ore & Anoop K. Sarbahi. Forthcoming. "State Capacity, Insurgency, and Civil War: A Disaggregated Analysis." *International Studies Quarterly* .

Kugler, Jacek & Ronald L. Tammen. 2012. *The Performance of Nations*. Lanham, Md.: Rowman & Littlefield.

Kuhn, Patrick M. & Nils B. Weidmann. 2015. "Unequal We Fight: Between- and Within-Group Inequality and Ethnic Civil War." *Political Science Research and Methods* 3(03):543–568.

Lacina, Bethany. 2015. "Periphery versus Periphery: The Stakes of Separatist War." *The Journal of Politics* 77(3):692–706.

Lake, David A. 2003. "The New Sovereignty in International Relations." *International Studies Review* 5(3):303–323.

Lemke, Douglas. 2011. "Intra-National IR in Africa." *Review of International Studies* 37(1):49–70.

Lemke, Douglas & Jeff Carter. 2016. "Birth Legacies, State Making, and War." *The Journal of Politics* 78(2):497–511.

Lichbach, Mark. 1995. *The Rebel's Dilemma.* Ann Arbor: University of Michigan Press.

Marshall, Monty G., Ted Robert Gurr & Keith Jaggers. 2014. POLITY IV PROJECT: Dataset Users' Manual. Codebook Center for Systemic Peace.

Millward, James A. 2018. "Opinion — What It's Like to Live in a Surveillance State." *The New York Times* .

Olson, Mancur. 1993. "Dictatorship, Democracy, and Development." *American Political Science Review* 87(3):567–576.

Opejobi, Seun. 2017. "Buhari: What We Will Do If President Deploys Military to Niger Delta – Ijaw Youths Council.".

Orridge, A. W. 1982. Separatist and Autonomist Nationalisms: The Structure of Regional Loyalties in the Modern State. In *National Separatism*, ed. Colin Williams. Vancouver: University of British Columbia Press.

Owolabi, Tife. 2017. "New Militant Group Threatens Niger Delta Oil War - in Latin." *Reuters* .

Phillips, Tom. 2018. "China Testing Facial-Recognition Surveillance System in Xinjiang – Report." *The Guardian* .

Powell, Robert. 2006. "War as a Commitment Problem." *International Organization* 60(1):169–203.

Raleigh, Clionadh & Håvard Hegre. 2009. "Population Size, Concentration, and Civil War. A Geographically Disaggregated Analysis." *Political Geography* 28(4):224–238.

Roeder, Philip. 2007. *Where Nation-States Come from: Institutional Change in the Age of Nationalism.* Princeton, New Jersey: Princeton University Press.

Rubin, Donald. 1987. *Multiple Imputation for Nonresponse in Surveys.* Wiley.

Schutte, Sebastian. 2015. "Geography, Outcome, and Casualties A Unified Model of Insurgency." *Journal of Conflict Resolution* 59(6):1101–1128.

Singer, J. David. 1988. "Reconstructing the Correlates of War Dataset on Material Capabilities of States, 1816–1985." *International Interactions* 14(2):115–132.

Siroky, David S. & John Cuffe. 2015. "Lost Autonomy, Nationalism and Separatism." *Comparative Political Studies* 48(1):3–34.

Smith, Anthony D. 1976. Introduction: The Formation of Nationalist Movements. In *Nationalist Movements*, ed. Anthony D. Smith. London: Macmillan pp. 1–30.

Sorens, Jason. 2011. "Mineral Production, Territory, and Ethnic Rebellion: The Role of Rebel Constituencies." *Journal of Peace Research* 48(5):571–585.

Stokke, Kristian. 2006. "Building the Tamil Eelam State: Emerging State Institutions and Forms of Governance in LTTE-Controlled Areas in Sri Lanka." *Third World Quarterly* 27(6):1021–1040.

Stremlau, John. 1977. *The International Politics of the Nigerian Civil War, 1967-1970.* Princeton, N.J.: Princeton University Press.

The Economist. 2016. "Avengers Unite!" *The Economist* .

Thies, Cameron G. 2006. "Public Violence and State Building in Central America." *Comparative Political Studies* 39(10):1263–1282.

Thies, Cameron G. 2007. "The Political Economy of State Building in Sub-Saharan Africa." *The Journal of Politics* 69(3):716–731.

Tilly, Charles. 1985. War Making and State Making as Organized Crime. In *Bringing the State Back In*, ed. Peter Evans, Dietrich Rueschemeyer & Theda Skocpol. New York: Cambridge University Press pp. 169–191.

Tilly, Charles. 1992. *Coercion, Capital, and European States, AD 990-1992.* Rev. pbk. ed. ed. Cambridge, MA: Blackwell.

Toft, Monica. 2003. *The Geography of Ethnic Violence : Identity, Interests, and the Indivisibility of Territory.* Princeton, N.J.: Princeton University Press.

Uche, Chibuike. 2008. "Oil, British Interests and the Nigerian Civil War." *The Journal of African History* 49(01).

Uguru, Hilary & Michelle Faul. 2016. "Shell Nigeria Shuts Oil Terminal as Attacks Cut Production." *Seattle Times* .

Vogt, Manuel, Nils-Christian Bormann, Seraina Rüegger, Lars-Erik Cederman, Philipp Hunziker & Luc Girardin. 2015. "Integrating Data on Ethnicity, Geography, and Conflict The Ethnic Power Relations Data Set Family." *Journal of Conflict Resolution* 59(7):1327–1342.

Walker, Andrew. 2009. "Will Nigeria Oil Offensive Backfire?" *BBC* .

Weber, Max. 1965. *Politics as a Vocation.* Philadelphia: Fortress Press.

Weidmann, Nils B. 2009. "Geography as Motivation and Opportunity Group Concentration and Ethnic Conflict." *Journal of Conflict Resolution* 53(4):526–543.

Weidmann, Nils B., Doreen Kuse & Kristian Skrede Gleditsch. 2010. "The Geography of the International System: The CShapes Dataset." *International Interactions* 36(1):86–106.

Weidmann, Nils B. & Sebastian Schutte. 2016. "Using Night Light Emissions for the Prediction of Local Wealth." *Journal of Peace Research* pp. 1–16.

Weiner, Myron. 1978. *Sons of the Soil: Migration and Ethnic Conflict in India.* Princeton, N.J.: Princeton University Press.

Wen, Philip. 2017. "Terror Threats Transform China's Uighur Heartland into Security State." *Reuters* .

Wong, Edward. 2009. "Riots in Western China Amid Ethnic Tension." *The New York Times* .

World Bank. 2018. World Development Indicators 2018. Technical report Washington, D.C.: .

Wu, Jiansheng, Shengbin He, Jian Peng, Weifeng Li & Xiaohong Zhong. 2013. "Intercalibration of DMSP-OLS Night-Time Light Data by the Invariant Region Method." *International Journal of Remote Sensing* 34(20):7356–7368.

Wucherpfennig, Julian, Nils B. Weidmann, Luc Girardin, Lars-Erik Cederman & Andreas Wimmer. 2011. "Politically Relevant Ethnic Groups across Space and Time: Introducing the GeoEPR Dataset." *Conflict Management and Peace Science* 28(5):423–437.

Zhukov, Yuri M. 2012. "Roads and the Diffusion of Insurgent Violence: The Logistics of Conflict in Russia's North Caucasus." *Political Geography* 31(3):144–156.

A Descriptive Statistics

A.1 Explanatory and control variables

Figure A1 presents descriptive statistics for all predictors included in the various models. Due to their skewed untransformed-distributions, *nightlights*, *population*, *capital distance*, *area*, and *GDP* are log-transformed. Figure A1 depicts these transformed distributions. Continuous predictors are centered and scaled before analysis.

A.2 Missing data

Table A1 presents the missingness of explanatory and control variables. Due to the fact that no variable has more than 10% of data missing I treat these observations as missing not at random and multiply e them (Rubin 1987). See the Supplemental Information for a full discussion of imputation procedures.

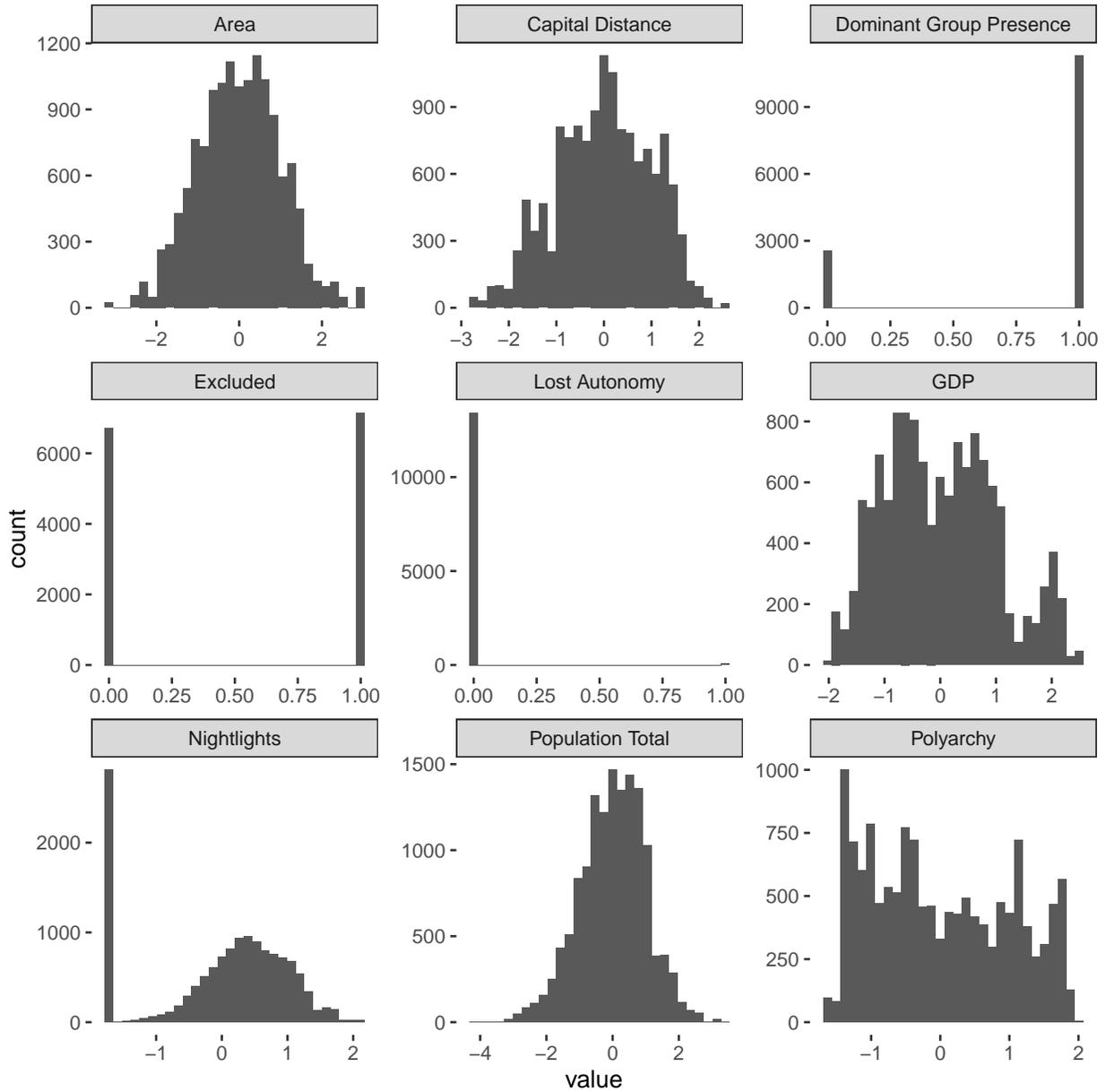|	% Missing
Polyarchy	0.85
Lost Autonomy	2.70
GDP per capita	6.49

Table A1: Missingness of control variables.

Figure A1: Descriptive statistics for predictors included in analysis. Continuous predictors are shown centered and scaled. Demographic balance, horizontal inequality, GDP, population density, nightlights, accessibility, and area are log transformed.