

The Curse of Geography: How Governments Preempt Secession Attempts*

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Abstract

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 that 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.

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

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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 ease of governing 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, improvements to the 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, 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, 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.

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.

1 Missing separatists

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, Solenberger & 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 move from conventional politics to secession and back again (Horowitz 1991, 13) suggests that bargaining with the government is only part of the story.

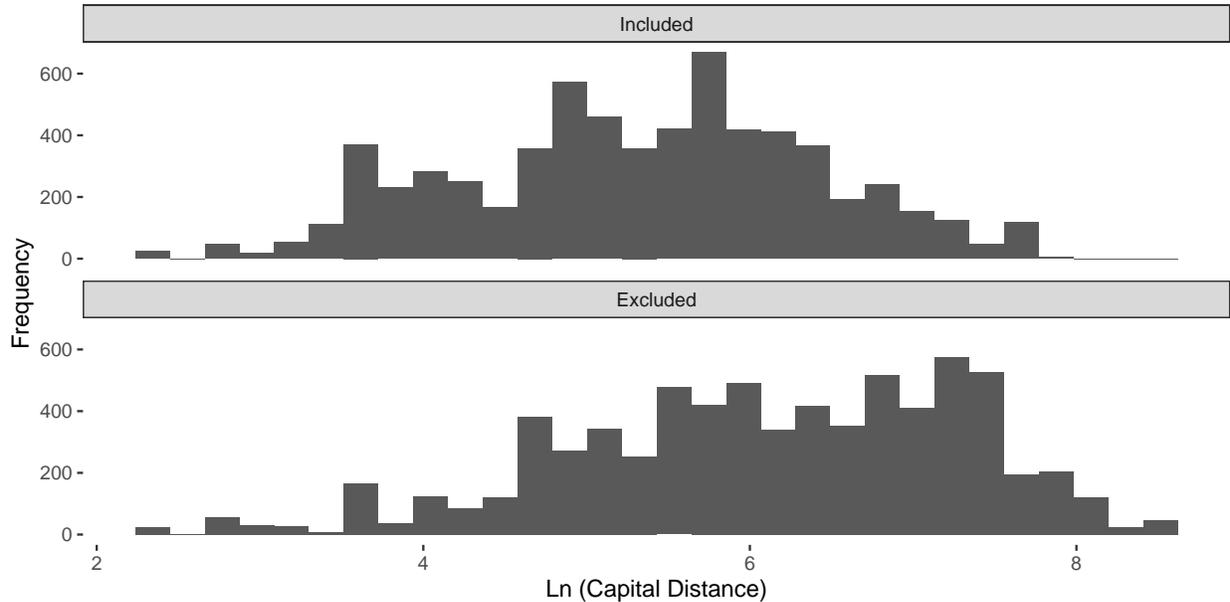


Figure 1: Histogram of the distance from ethnic group territories to the national capital (log transformed and standardized) by group political status in 2013.

Secessionist conflicts are most 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, split 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 relative paucity of secessionist civil war is especially surprising given the well-documented rise in secession as an empirical phenomenon in the post-WWII era. The institutional benefits of United Nations membership and the strengthening norm against

territorial conquest have made it ‘safer’ for new states to emerge, and there has been a commensurate rise in separatist movements and the number of new states that emerged through a process of secession, whether violent or not (Fazal & Griffiths 2014). Despite the rise in secessionist *movements*, there has not been a similar increase in secessionist civil wars. Figure 2 presents the annual number of active separatist movements from 1960 to 2005, along with the number of territorial and secessionist civil wars during that period.¹

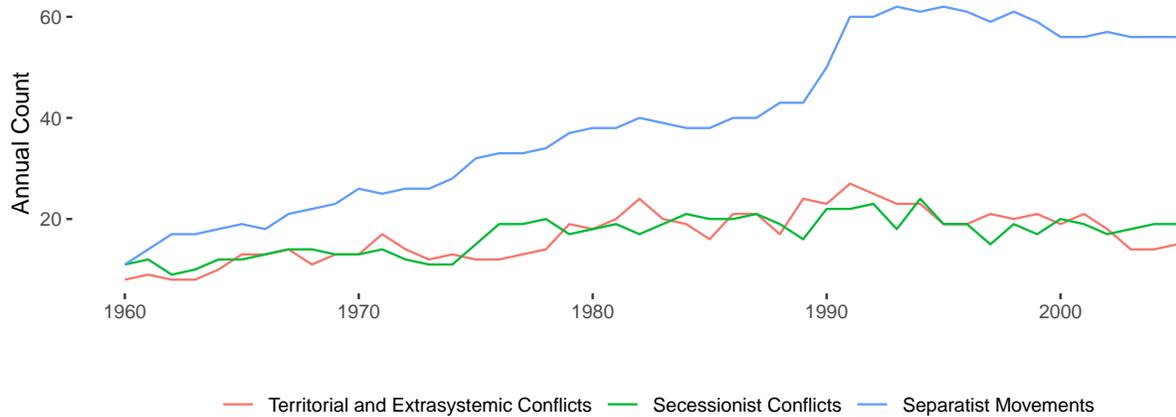


Figure 2: Annual counts of separatist self-determination movements (Cunningham 2014), territorial civil wars and extrasystemic wars, and secessionist civil wars (Braithwaite & Cunningham 2019).

Despite the general upward trend in separatist self-determination movements, the number of separatist civil wars lags significantly behind. This disconnect is sharpest after 1990; the collapse of the Soviet Union is associated with a marked increase in self-determination movements but not a significant increase in secessionist or territorial civil war.

1.1 Rebel groups as (potential) state-builders

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 leadership of the former rebel movement will become the leadership of the new state. This continuity of leadership means the prospects for the future state can affect group decision making before and during a war of independence.

¹Territorial wars includes extrasystemic wars because they are all wars of decolonization with a foreign metropole attempting to retain possession of a colonial territory.

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, Englebort 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. 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 are less easily observed by governments. 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.

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 group seeks secession or not.

This work 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. 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 their territory. If we expand our attention to the role of territory in secession and post-independence state-building, resources are a natural focal point for our analysis.

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 & Malone 2000) highlights the opportunities for personal enrichment that may motivate rebel leaders or supporters (Collier & Hoeffler 2004). 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 that 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.

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 and the creation of a newly independent state. While the extensive agricultural sector in the region (Stremlau 1977, 218) 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 its tax base. 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), as well as facilitating the consolidation and administration of a hypothetical independent Biafra. These factors illustrate how resources that can make conflict more

likely can also make secession more attractive by offering resources for a new state.

All of these factors can make a state easier to govern by providing capital, resources, and ease of transportation, so I argue that they define and contribute to the *territorial governability* of a given region. Population is the most foundational of these elements as states are composed of individuals. 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.

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), highlighting the role population plays in territorial governability. I focus on population as it is a natural starting point for a first analysis of the idea of territorial governability. Without understanding the role population plays in territorial governability, analyses of other dimensions may reach inaccurate conclusions.

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). Exercising political power successfully requires both types of sovereignty. While rebel groups can try to achieve external legitimacy by signing international agreements (Jo 2015) or building governance institutions (Stewart 2018/ed), they have little control over their degree of external recognition. 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.

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. 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, victorious rebels will be more successful in setting up a new state because their former rulers 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 stop 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 close to the capital and major economic centers of a state, trying to create a new state so near the capital would be impossible. The group would either have to govern while constantly dealing with challenges from 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 face 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.

1.2 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 capacity to prevent unrest from escalating into armed conflict. This strategy can be carried out by either providing elevated levels of public goods or by increasing the coercive capacity of the state, as China has done in Xinjiang recently.

While state capacity can be conceptually disaggregated, this does not seriously impact the empirical predictions of 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 and providing public goods should decrease the attractiveness of secession by meeting citizens' needs. Conversely, increasing the policing and surveillance capabilities in a region deters secession by increasing the costs of militarily challenging the state. While the facts on the ground differ greatly for each of these approaches, both of them will reduce the number of secessionist conflicts on average.

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). 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 depending on their level of success on the battlefield. 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 use 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 tensions, 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 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 state attention present the statistical test of my argument using cross national geospatial data.

2 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. 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.

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, Rügger, Cederman, Hunziker & Girardin 2015). Each ethnic group with a defined territorial settlement pattern has a polygon in the GeoEPR data.² 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 about themselves seceding.³ 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.

²The 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.

³I 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.

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. 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 presence in an excluded group's territory, the state may be able to deter a secessionist uprising. 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.

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.

2.1 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.

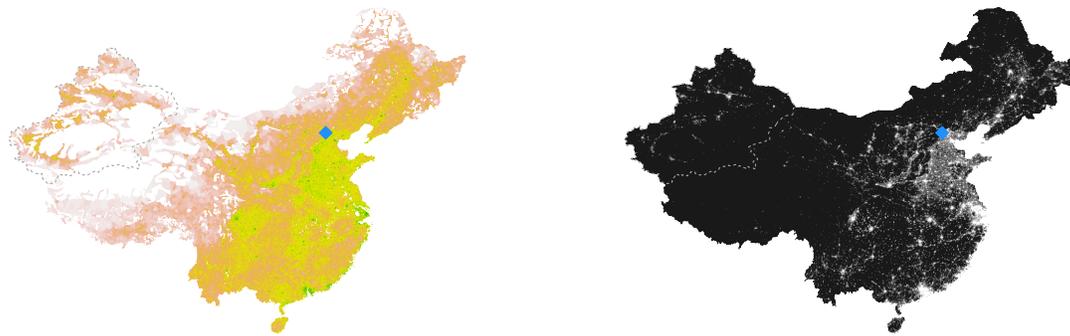
To accomplish this, I use data on nighttime light emissions. While nightlights are a reliable proxy for economic activity in a given area (Cederman, Weidmann & Bormann 2015, Kuhn & Weidmann 2015, Weidmann & Schutte 2016), they are also an indicator for state capacity in an area. Electrification is often 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). Specifically relevant for this analysis, De Juan & Pierskalla (2015) provide data on the number of security force personnel deployed to all counties in Southern Sudan (now South Sudan) in 2008. These county-level security force data correlate positively with 2008 nightlights ($\rho = 0.34$), providing further evidence that nightlights are a reasonable proxy for state capacity.

Lee & Zhang (2016) develop a measure of state capacity that draws on irregularities in reported ages in census data to capture administrative capacity via a statistic called the Myers number. While their analysis is at the state level, a new subnational version of their data contains Myers numbers for 1,276 regions across 85 states irregularly measured between 1990 and 2012. Higher Myers numbers indicate more irregularities in reported birth years and thus lower bureaucratic capacity in a given region. Nighttime lights for these regions correlate negatively with their Myers numbers ($\rho = -0.42$), meaning that as nightlights increase in a given region, the quality of information a government possess about its citizens increases. This pattern means that higher levels of nighttime light emissions are associated with higher levels of local state capacity.

While nightlights a noisy and imperfect way to measure state capacity, they correlate with many different dimensions of state capacity. They also have several useful properties for this analysis. Nightlights are a globally available method to measure capacity, 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. While nightlights cannot distinguish between supportive and coercive aspects of state capacity, both elements work to discourage secession, either by reducing grievances or raising the cost of fighting, so they do reflect the amount of attention a government has directed towards a territory.

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 ($\approx 1\text{km} \times 1\text{km}$ at the equator). Figure 3 shows how China's investment in Xinjiang is visible as relatively bright nighttime light emissions despite its comparatively low levels of population, illustrating the decision to deliberately increase capacity in the region. For each ethnic group 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



(a) Population

(b) Nightlights

Figure 3: 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.

capture all values of all nightlights cells that fall within the group’s territory, accounting for overlapping group polygons when necessary.⁴

2.2 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

⁴See the Supplemental Information for a discussion of this process.

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 arc-second level. I follow the same 'cookie cutter' approach to measuring nightlights to measure population, and make the same correction for overlapping ethnic group territories.

2.3 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.

2.4 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 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 groups are the most likely to start a secessionist conflict (Siroky & Cuffe 2015) given the combination of motivation due to lost status and capability due to experience administering quasi-state institutions. Autonomy can be a driver for separatist conflict even in the absence of reversal of status by providing ethnic elites with the necessary skills for sovereign governance via regional institutions (Cornell 2002), so controlling for lost autonomy accounts for when

states are most likely to increase capacity in these groups' territories.

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.

2.5 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 α 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 γ by year to account for unmodeled temporal heterogeneity. Equations 2.1-2.6 present this model, along with all priors and hyperpriors. I employ diffuse regularizing hyperpriors on all parameters in the model to avoid overfitting the data.

$$Y \sim \mathcal{N}(\alpha + \gamma + \mathbf{X}\beta, \sigma^2) \quad (2.1)$$

$$\beta \sim \mathcal{N}(\mu_\beta, \sigma_\beta) \quad (2.2)$$

$$\alpha \sim \mathcal{N}(\mu_\alpha, \sigma_\alpha) \quad (2.3)$$

$$\gamma \sim \mathcal{N}(\mu_\gamma, \sigma_\gamma) \quad (2.4)$$

$$\mu_\alpha, \mu_\gamma, \mu_\beta \sim \mathcal{N}(0, 5) \quad (2.5)$$

$$\sigma_\alpha, \sigma_\gamma, \sigma_\beta, \sigma \sim \text{half-Cauchy}(0, 2.5) \quad (2.6)$$

The response variable is the total amount of luminosity recorded in a group's territory in a given year, which proxies the degree of state capacity in that territory, and thus the level of attention the government has devoted to maintaining control of that territory. All predictors are lagged by one year to reduce endogeneity concerns.

3 Results

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.

I estimate four models using the data described above.⁵ 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.

	Model 1	Model 2
Population	0.81* [0.80; 0.82]	
Capital Distance		-0.48* [-0.51; -0.46]
(Constant)	0.08 [-0.15; 0.31]	-0.04 [-0.20; 0.12]
σ_α	0.58* [0.52; 0.66]	0.90* [0.80; 1.02]
σ_γ	0.47* [0.34; 0.66]	0.11* [0.08; 0.15]
WAIC	9713.26	23745.83
5-fold RMSE	0.35	0.62
Observations	13854	13854

* 0 outside 95% credible interval

Table 1: Linear models explaining nightlights as a function of ethnic group population, territorial overlap, 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 standardized.

However, the theoretical argument about the relationship between geography and state penetration into ethnic group territories holds that this presence should be higher

⁵Standard diagnostics indicate good convergence of the chains and are available in the Supplemental Information.

when the risk of a group seceding is higher. This 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 4	Model 5
Population	0.73* [0.71; 0.75]	0.72* [0.70; 0.74]
Capital Distance	-0.15* [-0.17; -0.14]	-0.15* [-0.17; -0.14]
Population Total × Capital Distance	0.03* [0.03; 0.04]	0.04* [0.03; 0.04]
Area	0.04* [0.03; 0.06]	0.04* [0.03; 0.06]
Excluded		-0.02* [-0.04; -0.00]
Dominant Group Presence		0.05* [0.03; 0.07]
Lost Autonomy		0.04 [-0.05; 0.13]
GDP _{PC}		0.14* [0.11; 0.17]
Polyarchy		0.03* [0.02; 0.05]
(Constant)	0.03 [-0.17; 0.24]	-0.02 [-0.21; 0.17]
σ_α	0.58* [0.51; 0.65]	0.47* [0.41; 0.53]
σ_γ	0.43* [0.32; 0.60]	0.40* [0.30; 0.56]
WAIC	9240.96	9155.33
5-fold RMSE	0.35	0.35
Observations	13854	13854

* 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 standardized.

Table 2 presents results from this conditional specification. Model 3 includes geographic variables measured in each group’s territory, while Model 4 includes country

level variables to control for regime type and state capacity.⁶ The introduction of country level control variables does not meaningfully 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.

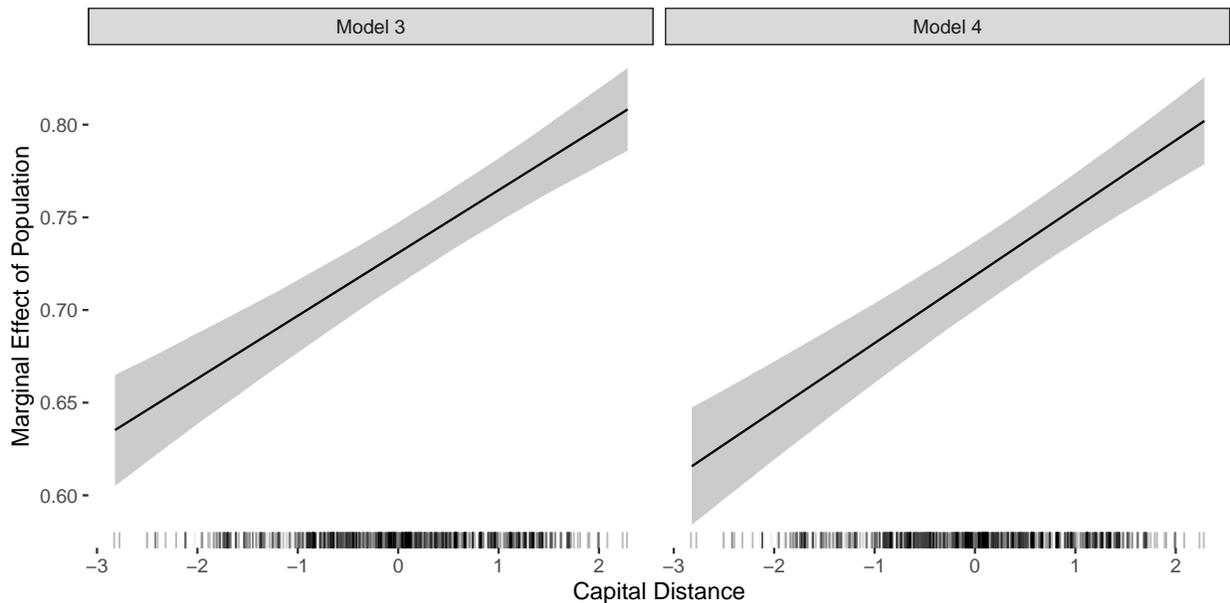


Figure 4: Marginal effects of ethnic group population on nighttime light levels, conditional on distance to the capital

Figure 4 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 0.79, so the effect of a one unit shift in logged and scaled population represents a 14.62% shift in the outcome variable. The maximum marginal effect in Model 4 is 0.78, which corresponds with a 14.52% 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 0.13, which corresponds to a 2.42% shift across the observed range of nightlights.

⁶Omitting 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.

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.

Despite the decision to focus on population as an indicator of territorial governability, accessibility and geographic distribution of that population has a large impact on state functioning (Herbst 2000). Human capital can be difficult to leverage if it is widely dispersed across a broad area. To address the potential criticism that total population ignores this distribution, I also measure the concentration of population by calculating a Gini index of population within each group's territory. This index captures how unequally population is distributed on average, meaning that groups with a higher population Gini have more of their population concentrated in smaller geographic areas like cities. In contrast, a group with a low population Gini would feature people relatively evenly dispersed across its territory with no major population centers.

The marginal effect of population concentration on nightlights is also positive, although effect sizes are smaller.⁷ Including the control variables from Model 4 increases the effect

⁷See the Supplemental Information for a full presentation of these results.

size, suggesting risk factors for secession are associated with increased state attention. This similar relationship suggests that the results are not simply an artifact of the choice of variable used to measure territorial governability, as it includes both population and geographic dispersion.

As a final robustness check, I assess the possibility that some other factor is driving both population and government attention to co-occur as distance from the capital increases. One potential explanation for this pattern is that capital cities are densely populated, and that other major cities tend to occur near borders and far from the capital, so the sparsely populated countryside is responsible for this relationship. To do so, I construct an alternate dataset where the spatial unit of analysis is agnostic towards sociopolitical boundaries. If some third factor is responsible for the stronger association between population and nightlights at high distances from the capital, we should observe the same relationship when we switch to an apolitical spatial unit.

Using PRIO-GRID, I measure the population and level of nightlights in each grid cell for the study period, assigning each cell to the state that covers the largest proportion of its area. As grid cells are exogenous to political phenomena such as ethnic settlement patterns, decisions about the distribution of government investment, and civil war onset, they are an ideal unit of analysis for this test (Tollefsen, Strand & Buhaug 2012). Figure 5 displays the relationship for a reanalysis using this alternate unit.

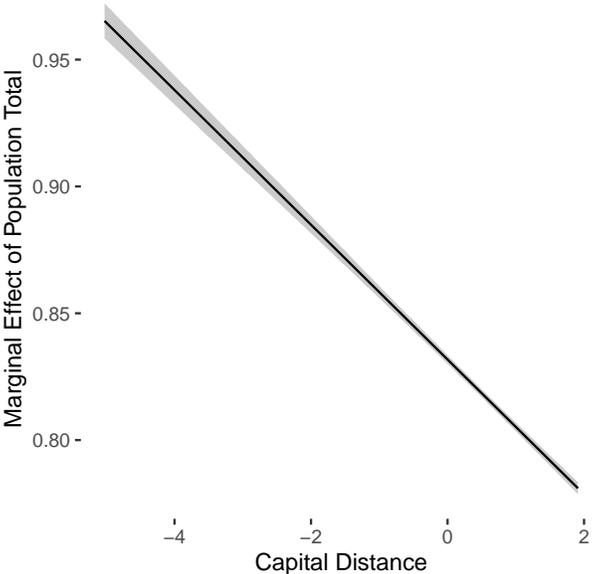


Figure 5: Marginal effects of ethnic group population on nighttime light levels, conditional on distance to the capital, measured at PRIO-GRID cells

Where Figure 4 exhibits a marginal effect increasing in distance from the capital,

Figure 5 conveys a marginal effect decreasing in distance from the capital. While not conclusive, this decreasing marginal effect suggests that the relationship is the result of strategic behavior by states in response to concerns about ethnic separatist conflict. Using a spatial unit that is politically agnostic yields an opposing relationship, which lends further support to the idea that the observed patterns are due to government efforts to preempt separatist movements.

4 Discussion and Conclusion

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.

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 make 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 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 rel-

atively 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.

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. This suggests that we need to move beyond thinking about selection processes at the national level to thinking about them at the subnational level.

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