

“State Power, Paramilitary Forces, and Internal Violence”

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February 23, 2011

**Abstract:** This paper explores the relationship between state power and internal violence. Conventional wisdom predicts that more powerful states should be less likely to experience internal violence. However, existing scholarship has failed to uncover robust empirical relationships between various measures of state power, such as geography and roads, and internal conflict. This paper presents a new empirical test, exploring the relationship between paramilitary forces and internal violence. The paper presents analysis of a new data set on the national paramilitary forces for all states from 1969-2003. The analysis finds that larger paramilitary forces significantly decrease internal violence. This relationship holds for some but not all measures of internal violence.

Draft. Comments welcome. Do not circulate.

What factors make it more likely that a state will experience internal violence? The most straightforward answer to this question focuses on state power, the state's ability to exercise control and autonomy over its society and territory, and to carry out its policies. Indeed, some view the very function of the state to be the prevention of violence. This was certainly Thomas Hobbes' central point, that society needed a Leviathan to prevent people from warring against each other. More recently, the examination of "failed states" has focused on the synergistic collapse of state power and authority coupled with the rise of internal violence. Beyond the failed states concept, modern social scientists have endeavored to explore the relationship between state power and internal violence, whether variations in different measures of state power correlated with variations in internal violence.

Surprisingly, empirical scholarship has generally not borne out the theoretical expectation that more state power translates into lower levels of internal violence. Namely, very few consistent relationships have emerged between nearly any measure of state power and the likelihood of internal conflict. Studies have either found no relationship between state power and internal violence, the opposite of the predicted relationship (more state power is associated with higher levels of internal violence), or perhaps scattered evidence of the predicted relationship. The absence of consistent, empirical patterns that stronger states experience greater internal political stability is a real puzzle.

That being said, previous research on the causes of internal conflict has not examined the full range of measures of state power, generally focusing on measures of state power that are perhaps only indirectly related to a state's ability to deter and combat violence. These measures include factors such as road networks, terrain, levels of economic development, extractive capacity of the government, and others. Little scholarship has yet examined elements of state

power which are more directly useful and immediately available for deterring and combating internal violence.

This paper presents an empirical test of a measure of state power which gets directly at a state's ability to deter and combat violence: a state's level of paramilitary forces. States use paramilitary forces more than regular military forces to combat insurgencies and address other forms of internal violence. The central question this paper asks is: Do higher levels of paramilitary forces reduce the incidence of internal violence?

To answer this question, this paper analyzes new data on the paramilitary forces of all states from 1969-2003. In statistical analyses of internal violence for all states across this time period, it finds evidence that higher levels of paramilitary forces reduce the incidence of internal violence. Across four dependent variables, the analysis finds there is a negative and clearly statistically significant relationship for two measures, a negative and marginally statistically significant relationship for one measure, and no statistically significant relationship for the last measure. In a separate analysis, the paper finds that higher levels of internal violence do not affect a state's level of paramilitary forces, addressing endogeneity concerns.

The paper proceeds in four parts. First, it discusses existing scholarship on the relationship between state power and internal conflict. Second, it discusses the research design used to test the hypothesis that higher levels of paramilitary forces are associated with lower levels of internal conflict. Third, it presents the results of statistical analysis. Fourth, it concludes.

## **State Power and Internal Conflict**

The sociologist Michael Mann distinguished between two different forms of state power. The first is despotic power, “the range of actions which the elite is empowered to undertake without routine, institutionalized negotiation with civil society groups.” The second is infrastructural power, the “capacity of the state to actually penetrate civil society, and implement logistically political decisions throughout” the country (Mann 1988, 5).<sup>1</sup>

Scholars have offered a variety of hypotheses connecting state power, and state infrastructural power in particular, with various behavioral or political outcomes. Dan Slater (2010) argued that regime type and in particular party structures provide a state with infrastructural power, and that state infrastructural power is an important tool which can extend the duration of authoritarian regimes. Brian Lai and Slater (2006) used the same concept, proposing that because single party regimes can use their party structures to maintain control of society, they are unlikely to need to initiate the use of military force as a means of diverting public attention away from declining domestic political and economic conditions. However, military juntas have less infrastructural power because they do not have such party structures, and hence are more likely to initiate military force to divert public attention away from declining domestic conditions. Daniel Schensul (2008) found that variations in state infrastructural power explain variations in the success of attempts in post-apartheid Durban, South Africa to reduce economic and other forms of inequality. Matthias Vom Hau (2008) posited that state

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<sup>1</sup> Mann’s notion of state infrastructural power has attracted substantial scholarly attention, and spirited debate. Scholars have differed on whether the focus should be on resources or on outcomes. Some have been satisfied by focusing on indices of capability, such as revenue collection or numbers of armed troops. Others have challenged the assumption that capabilities necessary translate into power, arguing that true power can only be judged by the degree to which the behavior and identities of society and societal actors have actually been changed (Soifer 2008). “State power” is similar to the concept of “state capacity.” In the context of the civil war scholarship, definitions of state capacity have paralleled Mann’s notion of state power, and state infrastructural power in particular. State capacity has been defined as the ability to “deter or repel challenges to its authority with force,” “the repressive capacity of the state during the early stages of conflict,” its “ability to address the demands of their citizens in ways that reduce the incentive for political violence,” and the “ability to accomplish those goals it pursues” (Hendrix 2010; Sobek 2010; DeRouen et al 2010).

infrastructural power affected the development of legitimacy in Mexico and Argentina, and especially the evolution of popular nationalism. Hillel Soifer (2009) demonstrated that higher state infrastructural power mediates the relationship between income inequality and regime outcomes. Daniel Ziblatt (2008) connected state infrastructural power to the provision of public goods.

Though there is a growing body of scholarship on the effects of state infrastructural power, there is perhaps surprisingly relatively little scholarship on the sources of state infrastructural power. One exception is Slater (2008), who proposed that postcolonial democracies are more likely to build infrastructural power in the context of competitive elections amid widespread mass mobilization. Cullen Hendrix (2010) explored some fifteen different measures of state power to explore for possible dimensionality underlying these different measures. Using factor analysis, he discovered three different conceptual sets, rationality legality, rentier-autocraticness, and neopatrimoniality.

There are two different ways to think about the manifestations of state infrastructural power. The first is to think of state infrastructural power as similar to factor endowments, assets controlled by a state which are available merely because of their existence. This factor endowment approach imagines elements like natural resource wealth that can provide revenue that can then be converted into more specific manifestations of state power, like roads or well-armed troops. The second way is to think about the specific manifestations of state power themselves, like roads or troops. Note that if one focuses on the specific manifestations, then the level of these manifestations is due not only to factor endowments, but also to explicit decisions made by governments to build state infrastructural power, and they are often the product of budgetary choices.

In the following subsections, we examine a variety of measures of state power that past scholarship has considered as possibly affecting the likelihood of internal violence. We explore the theoretical logic as to why it might be related to internal violence and discuss existing empirical findings connecting it to internal violence. In general, the empirical evidence connecting state power and internal violence is surprisingly weak.

## Terrain

Some have proposed that a country's terrain affects the state's infrastructural power as it relates to the likelihood of internal violence. More mountainous or heavily forested terrain gives insurgents more places to hide, and makes it difficult for states to extend their reach throughout their national territories through the deployment of troops, tax collectors, government bureaucrats, or other manifestations of the state. Rough terrain also reduces the advantage of mechanization the government might have over insurgents, as it is more difficult for vehicles to traverse mountainous and forested terrain, and forests provide insurgents cover from government aircraft. That being said, some have proposed that mechanization may actually serve to hinder rather than aid counterinsurgent forces, because it discourages efforts to gather information from the population (Lyall and Wilson 2009).

The empirical findings of the effects of terrain on insurgency are mixed. For their cross-national study of civil war onset in the post-World War II period, James Fearon and David Laitin (2003) hired a geographer, A. J. Gerard, to develop a single score for each country in the world measuring the extent to which that country is mountainous. They found that civil war onset is more likely in countries with more mountainous terrain.

This is a contentious finding. Matthew Lange and Hrag Balian (2008), Stathis Kalyvas and Laia Balcells (2010), and Clayton Thyne (2006) also conducted cross national statistical analyses of civil war onset, used the Gerard data, and found no relationship between mountains and civil war onset. Beyond reanalysis of the Gerard data, some scholars have critiqued the approach of using a single mountains score for an entire country. They posit that countries are not uniformly mountainous or flat, and to assume otherwise risks aggregation error. They suggest breaking countries into subnational zones, exploring whether terrain is correlated with the onset of violence within each smaller zone. This enables the distinction between subnational areas which are highly mountainous (such as the Himalayan regions of China) and areas which are flatter (such as the coastal plains in southeast China), and avoids the problem of having to provide a single score for the variable terrain of a single country.

Halvard Buhaug and Jan Ketil Rød (2006) took this subnational approach, using Geographical Information Systems (GIS) software to look at sub-state regions, dividing African countries up into 100 km x 100 km squares. They found results opposite to those of Fearon and Laitin, that more mountainous regions were *less* likely to experience the onset of violence than other regions. They also found that forested regions were not more or less likely to experience violence.<sup>2</sup> Lars-Erik Cederman et al (2009) also used GIS data on sub-state regions, and they found only mixed evidence that mountains made civil war onset more likely. Steven Pickering (2009) developed a new measure of terrain using NASA data, finding suggestive evidence that, again using sub-state regions, there is a positive relationship between rugged terrain and internal conflict. Clionadh Raleigh (2010) also used subnational data, but found in multivariate models that elevation and forests were uncorrelated with conflict, for six central African states. Alok

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<sup>2</sup> Buhaug and Lujala (2005) found that civil wars in mountainous regions lasted longer, but civil wars in forested regions were shorter.

Bohara et al (2006) found that terrain mattered in comparing violence levels across subnational regions within Nepal, though Quy-Toan Do and Lakshmi Iyer (2010) found that in Nepal geography is related to conflict intensity, but not onset.

Terrain is seen as the least manipulable of the factors affecting state power, though it is not totally immutable. Mountains are generally unmanipulable, “mountain top removal” schemes aside, but states can build roads and rail networks which reduce the ability of mountains to restrain the extension of state power (see below). Forest cover is difficult to manipulate, though some counterinsurgents might destroy natural ecosystems to make insurgents more vulnerable, in some ways literally “draining the swamp.” For example, the United States employed herbicides such as Agent Orange in the Vietnam War to defoliate Vietnamese forests and eliminate potential cover for the Viet Cong (Buckingham 1983). In 1992, Iraqi government forces drained the marshes in southern Iraq to facilitate counterinsurgency against the Shiite rebels (Cordesman and Hashim 1997, 103).

### Centrality of National Capital

Jeffrey Herbst (2000) examined the effects of geography on political stability in African states. He proposed that one reason that African countries have been more susceptible to civil war onset is because of the locations of their national capitals. Many African countries were European colonies, and the cities which now serve as national capitals were built by Europeans. However, the Europeans often built these cities on the coasts, to facilitate the export of the raw materials produced by the colony. Herbst argued that this path-dependent process causing African capitals to be located far from the geographic center of the country undermined state

power. The capital is the hub of state power, and the ability of the state to extend and apply its power within a geographical district decreases as the distance between the capital and the district increases. Locating the national capital on a national border increases the distance to many geographic districts, making civil war outbreak more likely.

Empirical scholarship on this proposition has found at best mixed support. Weidmann et al (2010) reanalyzed the Fearon and Laitin (2003) data by adding a variable measuring the distance between the national capital and the geographic center of a country, and found no relationship between this distance and the onset of civil war. Buhaug and Rød (2006), on the other hand, found empirical support for the capital distance proposition, discovering that in Africa the farther a geographic district is from the national capital, the more likely it is that civil war will break out there. Cederman et al (2009) found mixed support for the proposition. In a study of subnational regions within Liberia, however, Hegre et al (2009) found that regions closer to the national capital were *more* likely to experience violence. More recently, Buhaug (2010) found that when the state is strong in relation to the rebels, conflict tends to occur farther from the capital, and when the state is weak in relation to the rebels, conflict tends to occur closer to the capital.

The location of the national capital is relatively but not completely unmanipulable. Sometimes governments elect to move their national capitals. The Soviet government moved its national capital in 1918 from St. Petersburg to Moscow as German forces advanced, and prepared to evacuate Moscow in October 1941 as German forces again threatened. Soon after its revolution the United States moved its capital from Philadelphia to New York to the newly created District of Columbia, placing the last on the banks of the Potomac River in part because such a location was close to the geographic center of the new republic (Crew et al 1892, esp. 75).

Brazil moved its capital from Rio de Janeiro to the newly created, more centrally located city of Brasilia in the 1950s and 1960s. The Federal Republic of Germany moved its capital from Bonn to Berlin soon after German reunification in 1990. Sometimes countries decide to move their national capital in reaction to threats of internal instability. Burma is moving its national capital from Rangoon to a more central location near the town of Pyinmana, perhaps to make it easier to control potentially restive ethnic minority groups in the Shan, Chin, and Karen border states (McGeown 2005).

## Economic Development

Scholars have posited a relationship between economic development and civil war onset for decades, as far back at least as Ted Gurr's (1970) relative deprivation hypothesis. A more contemporary proposition has been that lower levels of economic development generate higher levels of grievance, which in turn makes the population more willing to support insurgency (Collier and Hoeffler 2004). Fearon and Laitin (2003) drew a new connection between development and internal conflict, positing that higher levels of development mean that states have greater "financial, administrative, police, and military capabilities" and enable the state to better penetrate the entire country with more extensive roads. They also posit that higher levels of development mean that individuals are less likely to join insurgencies. They found that gross domestic product (GDP) per capita, a development proxy, is negatively associated with the outbreak of civil war in the post-1945 period.

Three caveats to the Fearon/Laitin proposition and finding are in order. First, economic development can account for several different causal forces affecting civil war onset. Some of

these causal processes do relate to state infrastructural power, such as the bureaucratic effectiveness of the state, the military and police assets of the state, and the physical infrastructure of the economy. However, GDP/capita also reflects economic privation, and higher levels of economic privation may make insurgency more likely (the grievance hypothesis (Collier and Hoeffler 2004)), state infrastructural power aside. Second, the empirical evidence on the relationship between GDP/capita and internal conflict is mixed. Cederman et al (2009) found that GDP/capita was not correlated with intrastate violence over roughly the same time period, and Buhaug et al (2008) found significant relationships in only some of their models. In a careful study of Liberia, Hegre et al (2009) found that richer districts within Liberia were actually *more* prone to violence than poorer districts. Third, there is evidence that the occurrence of civil war undermines development, raising the question of the direction of the causal arrow. People do not engage in economically productive activity during civil war, because they are involved in fighting, because they are deterred from going to work, and/or because their factories or offices have been destroyed. Civil war has other negative effects on development, such as undermining public health and destroying physical infrastructure (Iqbal 2010). Paul Collier (2007) refers to the mutual interaction between civil war and poverty as the “conflict trap.”

### Transportation Infrastructure

A nation’s transportation infrastructure is an important component of state infrastructural power. Roads, rail, and airports are the principal means by which the state can distribute goods and services to the rest of the country. More extensive and higher quality roads, rail, airports, and seaports mean that governments can more cheaply and more quickly dispatch teachers,

construction equipment, health care supplies, food, and administrators to every part of the country. The 2006 United States Army/Marine Counterinsurgency Manual recommends investing in infrastructure projects like building roads as a means of supplying goods of direct use to the population, thereby reducing popular grievances against the government and decreasing likely popular support for insurgents (*Counterinsurgency* 2006, 5-21). Further, the state uses its physical infrastructure to project effectively its military and policing power across the breadth of the country. Roads, rail, airports, and seaports of higher quality and quantity mean that the government can more quickly and cheaply dispatch larger numbers of troops and masses of material through the entire breadth of the country to show force or put down insurgents.

Few studies have explored the relationship between physical infrastructure and civil war onset, and those studies that have examined the connection do not provide evidence clearly supporting the hypothesis that more extensive infrastructure means a lower chance of internal violence. Perhaps surprisingly, Buhaug and Rød (2006) found only very limited empirical support for the proposition that higher road density translates into a lower probability of civil war. Raleigh (2010) showed that in six African countries subnational areas with more roads, cities, and airports were *more* likely to experience conflict. She hypothesized that these areas were of higher value, and hence more likely to see rebels and government forces clashing over them. Relatedly, Jason Lyall and Isaiah Wilson (2009) found that less mechanized counterinsurgency efforts are more successful than more mechanized efforts, as counterinsurgency forces will be more effective when dismounted. However, more extensive road networks do not necessarily mean that counterinsurgents must stay in their trucks and helicopters.

The causal arrow may run in the opposite direction, as the threat of internal violence may affect the incentives of states to invest in transportation networks. States will expand and improve their transportation infrastructures to increase their power and deter and combat insurgents. The Roman Empire built the world's first road network to maintain internal order (Starr 1982, 116-120). The urban landscape (including the streets) of Paris was substantially redesigned after the revolutions of 1848, partly to make it easier to put down insurrections (Jordan 1995, 188-189). Iraq built roads in the southern portion of the country in 1992 to help combat the Shiite insurgency (Cordesman and Hashim 1997, 103). In recent years China completed a high altitude railway to Tibet as a means of tightening its control over the restive population there (Ni 2006). India has built roads to sap support for the Maoist insurgency, while Maoists have sabotaged roads in India in an attempt to undermine state power (Yardley 2009, 16). Road construction is seen by some as a "cornerstone" of the counterinsurgency effort in Afghanistan (Mockenhaupt 2009, 136). Conversely, some leaders may deliberately neglect their state's physical infrastructure so as to hamper potential rebels. The Zairean dictator Joseph Mobutu Sese Seko resisted investing in roads and infrastructure in his country, as he believed that better roads would facilitate collective opposition to his regime (Dunning 2005, 465-6).

There are difficulties in executing cross-national analysis of the effects of road density (perhaps the most important element of physical infrastructure) on civil war onset. Among all measures of physical infrastructure (non-transportation measures of infrastructure include items such as access to water and energy grids), the data on transportation infrastructures may be the worst. Existing cross-national data does not describe road quality, does not distinguish between rural roads and multilane superhighways, and does not account for maintenance levels of roads (Estache and Fay 2007; Canning 1998). There are also signs that codings in the data may have

changed because of undescribed, state-by-state changes in coding rules (that is, the way that nations count roads) rather than changes in the actual transport networks. For example, in the major cross-national data set on national road networks, there are a number of instances in which the kilometers of recorded road network went *down* substantially from one year to the next, including Congo from 1955 to 1957, Madagascar from 1969 to 1970, the US from 1980 to 1981, Japan from 1986 to 1987, Czechoslovakia from 1982 to 1985 (a decrease of 49%), and others. Short of major interstate war, it is hard to imagine circumstances in which a consequential length of roads would disappear from one year to the next. This is not a trivial problem. In the International Roads Federation data set, which includes annual roads data for all countries from 1963-1989,<sup>3</sup> the IRF codes a decline in a country's number of kilometers of road from one year to the next in 14% of the country-years. Buhaug and Rod (2006) use the Digital Chart of the World to produce roads data.<sup>4</sup> This data set was originally produced by the Environmental Systems Research Institute for the Defense Mapping Agency, in 1993. One shortcoming of the data set is that it provides a one-time snapshot of road network data, that is, there is not temporal variation.

### Foreign-Imposed Regime Change

Occasionally, one state will attack another state and overthrow its leadership. Peic and Reiter (forthcoming; see also Enterline and Greig 2008) hypothesized that foreign imposed regime change (FIRC) following war is likely to eviscerate the infrastructural power of the targeted state. A state suffering a FIRC following a war may see its armed and police forces

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<sup>3</sup> Available at <http://www.hsph.harvard.edu:80/faculty/david-canning/data-sets/> <downloaded October 20, 2009>.

<sup>4</sup> For more information on the Digital Chart of the World, see <http://www.maproom.psu.edu/dcw/> <downloaded October 15, 2009>.

destroyed, its physical infrastructure wrecked, its national capital leveled, and the government administrators who enable the day to day operation of state and society by performing mundane tasks such as operating utilities and collecting taxes removed from power. Because FIRCs following wars destroy state infrastructural power, they make the outbreak of civil war more likely. Examining all civil wars from 1920-2004, Peic and Reiter found that foreign imposed regime changes which followed war and imposed changes on political institutions increased the likelihood of civil war onset greatly. In a related paper, Kristian Gleditsch and Andrea Ruggeri (2010) focused on the more general phenomenon of irregular entry into and exit from power, FIRC being one example of irregular leadership transition. They proposed that irregular leadership transitions can indicate state weakness, and found that irregular leadership transitions make the onset of internal violence more likely.

#### National Census

Hillel Soifer (2009) has argued that conducting a national census both reflects and contributes to state infrastructural power. It reflects state infrastructural power because a state needs to have a certain degree of control over its territory and population in order to implement a census. It contributes to state infrastructural power because the information provided by a national census can be used to effectively distribute resources. He explored the relationship between regime type and economic redistribution, and found higher state infrastructural power as indicated and boosted by the presence of a national census to be a key intervening variable. However, Jun Koga and Dan Reiter (2009) found that taking a national census did not make civil war onset significantly less likely.

The decision to take a national census may be endogenous to the risk of internal violence. A census can be used to reapportion economic and political power, and in a region or nation in which there are deep ethnic conflicts (and hence a high structural risk of civil war) states may be unwilling to carry out a census. Even though the new Iraqi constitution calls for a census, the national government has delayed holding it, as the political implications of any census results (such as indicating that the Shiites are not as numerous as they claim to be) might be sufficient to reignite civil war in that country. Lebanon has not held a census since 1932, and any new census there that reapportioned political power might cause the groups losing representation to resort to civil war (Nordland 2009; Myers 2010).

#### Size of Public Sector

Hanne Fjelde and Indra de Soysa (2009) made two arguments as to why the size of the public sector, roughly speaking, would affect state infrastructural power and the likelihood of civil war.<sup>5</sup> They looked at two measures, the state's capacity for revenue extraction from the economy and the size of government expenditure as a percentage of GDP. They proposed that the first reflects the government's ability to deter and crush insurgency, and the latter gives the state the power to distribute goods to reduce societal grievance. In quantitative tests for the years 1961-2004, they found that revenue extraction was not significantly related to civil war onset, but government expenditures was.<sup>6</sup> Alex Braithwaite (2010) found that internal violence was

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<sup>5</sup> They use the phrase "state capacity," though their definition (7), "the extent to which governmental agents control state activities and resources within the government's territory," generally equates to Mann's definition of state infrastructural power.

<sup>6</sup> They also hypothesized protection of property rights generates public trust in government, and such legitimacy can in turn be used by the government as a means of social control. Their measure of property rights was negatively and significantly related with the onset of civil war.

less likely to spread to a state with higher levels of relative political capacity, though relative political capacity itself was uncorrelated with civil war onset. Cameron Thies (2010) also found that levels of government revenue, taxation, and relative political capacity did not affect the likelihood of civil war onset. Thies did find, however, that civil war onset undermined state capacity, specifically government revenue, taxation, and political extraction.

## Summary

Many factors which ought to be critical aspects of state infrastructural power affecting the outbreak of civil war are not consistently correlated with the outbreak of civil war across scholarship and research designs. Many variables do not acquire consistently supportive empirical results. Economic development does attract consistent empirical results, but that positive relationship may be due to factors beyond state power. There is good evidence that foreign imposed regime change following interstate war makes civil war more likely, but those events are relatively rare, and so can not constitute a comprehensive account of the outbreak of civil war.

There are a few reasons why past research has failed to find strong connections between state power and internal violence. One possibility is that greater state power might both increase and decrease internal violence. Lange and Balian (2008) speculated that greater state power might make civil war more likely if the reach of the state served to provoke the population to support insurgents (see also Peic and Reiter (forthcoming)). Larger military and paramilitary forces in particular might be especially likely to provoke a population to support insurgents. The presence of occupation forces following a foreign imposed regime change might also provoke a

population to support insurgency, though Peic and Reiter (forthcoming) found that there was not a significantly different risk of civil war onset following FIRCs with occupation forces as compared to FIRCs without occupation forces. Though the common view from Iraq and Afghanistan is that an occupation force can inspire insurgency, studies have found that at least in some instances an occupation force can deter insurgent activities (Willard-Foster 2009; Lyall 2009). Greater extractive capacity might be more provocative, as the population might resent the presence of tax collectors. A national census might be especially likely to provoke internal violence in nations which could be characterized as having ethnic divisions. Hence, when aggregating together both kinds of cases, dampening violence and provoking violence, into a single data set, the net observed effect may wash out.

A second possible explanation of the null results between measures of state infrastructural power and civil war onset regards the possible endogeneity of state infrastructural power. One of the very core functions of state infrastructural power and indeed of the state itself is to maintain internal order. A state may be motivated to spend more to expand its infrastructural power if it perceives a growing threat of internal disorder. This dual causality may introduce unrecognized nuance into empirical results.

A third point is that physical assets of state power may encourage internal violence, either because insurgents want to destroy things the state values, or the insurgents want to capture items of value. This is generally true of commodities like secondary diamonds and oil, which can encourage rebel activity. It can also be true of other items which directly contribute to state power. Raleigh (2010) found that areas which contain several items which are both valued and contribute to state power, such as airports, cities, and roads, experience higher levels of internal violence. Historically, the construction of railroads and more broadly industrialization in Russia

helped engender political and social change which eventually led to the 1905 revolution (Acemoglu and Robinson 2006, esp. 116).

Fourth, there may also be unrecognized interactive factors which distort the relationship between state power and internal violence. For example, studies examining the relationship between terrain (specifically, variance in levels of elevation) and internal violence have as yet failed to examine the interactive effects of urbanization, as cities tend to be as flat (in terms of elevation differentials) as deserts, and yet state power, especially airpower, is much more easily wielded against rebels in deserts than in cities, as buildings provide man-made terrain which can make it easier for insurgents to organize and hide. Further, studies have not yet attempted to understand how transportation networks might ameliorate the effects of rugged terrain.

### **Paramilitary Forces and Internal Conflict**

The factor most immediately useful in deterring and combating insurgents is also the factor which has ironically been studied the least: paramilitary forces. At least one element of counterinsurgency strategy will be the application of violent force, ranging from putting down political demonstrations with force to small operations to capture or assassinate insurgent leaders to major military offensives. No quantitative studies have yet assessed the relationships between size of paramilitary forces and likelihood of internal violence.<sup>7</sup> David Cunningham et al (2009) coded a dichotomous variable on the fighting capacity of rebels in relation to the government, for insurgencies which have occurred. They found that greater rebel strength was not significantly

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<sup>7</sup> Some studies have explored the relationship between police forces and crime rates. They have found that once endogeneity is controlled for, there is no relationship between larger police forces and crime rates, though some studies suggest that variation in policing strategies can affect the crime rate (see Eck and McGuire 2006; Leavitt 1997; Fajnzylber et al 2002).

related to conflict duration, but that greater rebel strength did make a rebel victory more likely in relation to other outcomes such as government victory or compromise through formal agreement. Lyall and Wilson (2009) included a variable measuring the government's average share of power among all states in the system across the six Correlates of War (COW) indicators of population, urban population, number of troops, military spending, energy consumption, and iron and steel production. They found that this measure was positively correlated with counterinsurgent victory in the pre-1918 "foraging" era, but was not correlated in the post-1917 "mechanized" era. Kalyvas and Balcells (2010) found that the number of a state's military personnel was negatively correlated with the onset of symmetric non-conventional civil wars, but not with conventional civil wars. They used the COW measure of regular military personnel.

One possible reason for the shortage of analysis on paramilitary forces is the paucity of useful data. There is systematic data on regular military troops, and has been used in some analyses (see above). However, not all regular military troops are trained or equipped for counterinsurgent activity, and focusing one's regular military on internal dissent may make it less able to confront external, conventional threats (Andreski 1980). Hence, aggregate numbers of regular military forces may not convey an accurate sense of the state's ability to combat insurgents. This is perhaps a particular problem with the COW data on troop levels, which aggregates air, naval, and ground forces into a single measure, as air and naval forces are likely less helpful in combating insurgencies than ground forces (Quinliven 1999).

Paramilitary forces may be a more appropriate measure of a state's ability to exert military power to deter or combat insurgents. There is no consensual definition of paramilitary forces, though such forces are generally understood to be armed agents of the state other than regular military forces. *The Military Balance (MB)* is one possible source of information on a

state's paramilitary forces and its armed forces more generally.<sup>8</sup> This annual publication lists all subcomponents of a state's armed forces, providing troop counts for each sub-category. There are at least two problems with these data, however.<sup>9</sup> First, there are substantial gaps in the data, both across years within nations and across nations. Second, there are inconsistencies in the coding rules in terms of what factors get included in which subcategories, both across years within nations and across nations.

We built a new data set on the size of the paramilitary forces for all states for the time period 1969-2003. We began with the *MB* data set, and cross-checked with another comprehensive source of paramilitary data, the annual publication *Statesmen's Yearbook*. We used the two sources to identify and correct possible gaps and inconsistencies in the data. We also in some instances employed supplemental sources. These efforts allowed us to reduce substantially the amount of data missing in *MB*. With *MB* data alone, there is paramilitary data only for about 27% of the 7418 country-years across this time period. With our combined data set, we have paramilitary data for about 64% of those country years. The value ranges from 0 to 12,000,000.

When collecting data, we observed that in these two data sets the term "paramilitary forces" often include a variety of different kinds of forces, such as militia, gendarmerie, border guards, and others. We included all of the categories of paramilitary forces listed by *MB* and *Statesmen's Yearbook*, as different governments use different kinds of paramilitary forces to deter or combat internal violence. Some governments use Interior Ministry troops, such as Peru

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<sup>8</sup> Note that the rebel capability data set from Buhaug et al (2009) is not helpful here, because those data only contain information on the relative power of a rebel group once a rebellion has broken out. A group of scholars is currently in the process of collecting data on "pro-government armed groups," which include paramilitary, militia, vigilante, and other groups often intended to combat violently anti-government groups and insurgents (Carey et al 2009). This data set will include a variety of descriptive information about such groups over the time period 1981-2004, though it apparently will not include data on the size of such groups. This data is not yet available.

<sup>9</sup> The editors at *MB* have to this date not replied to inquiries about their data methodologies. We note that some scholars have used the *MB* data as is, eg Colaresi and Carey (2008) and Boehmelt and Pilster (forthcoming).

in its campaign against the Shining Path or Russia in its campaign in Chechnya. Some governments commission the military to train civilians to serve as militia, as Colombia has done to combat narcoterrorist and other groups. One critique of our decision to include all categories of paramilitary forces might be that it is a crude approach, including troops which are unlikely to be used to defeat insurgents. This is a concern, but we note that our approach is similar to the common approach in studies of interstate war of including the entirety of a nation's regular armed forces to understand its ability to deter and defeat the range of military threats it might face, even though not all elements of a nation's regular armed forces would be used against all possible military threats. The United States Navy, for example, played little role in the 2001 interstate war against Afghanistan, though American sailors get included in COW troop counts for the US, and American spending on its navy gets included in the COW measure of spending. We might also note that accurately differentiating categories would be difficult, as states have many different names for their military formations (militia, gendarmerie, volunteer defense corps, people's militia, security police, etc.), though the functions may be similar across states.

Our central independent variable is the number of paramilitary forces. Depending on the dependent variable, we use either the number of paramilitary forces, or the number of paramilitary forces per capita (using COW population data).<sup>10</sup>

We use four different dependent variables.<sup>11</sup> First, we used Uppsala data on internal violence, creating a dichotomous variable coded 1 if there was internal violence (at least 25 dead) in a nation-year, and 0 otherwise.<sup>12</sup> Second, we used the Peic and Reiter (forthcoming)

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<sup>10</sup> Studies on post-conflict nation-building have focused on the number of occupation troops per capita as a key factor determining peace and stability (Dobbins 2003).

<sup>11</sup> We did not include Polity, following James Vreeland's (2008) discovery that the standard Polity measure of regime type includes a subcomponent which measures internal violence. When this problem is corrected, Polity is not correlated with internal violence onset. Peic and Reiter (forthcoming) reached a similar conclusion.

<sup>12</sup> Available at <http://www.pcr.uu.se/research/ucdp/datasets/>.

dichotomous variable on the outbreak of civil war. They expanded the Fearon and Laitin (2003) data on civil war onset, who coded violence as constituting civil war if there were at least 1000 casualties. Third, we used the Bethany Lacina and Nils Petter Gleditsch (2005) data on battle deaths from internal violence in a country in a given year. If a country suffers fewer than 25 such deaths in a year, they code it as zero. We use their “best estimate” measure. That variable ranges from 0 to 350,000. Fourth, we used a dependent variable measuring the presence of guerrilla war, as coded by the Cross National Time Series data.<sup>13</sup> That data set defines guerrilla war as, “Any armed activity, sabotage, or bombings carried on by independent bands of citizens or irregular forces and aimed at the overthrow of the present regime.” The variable is a count of the number of times the media (usually, the *New York Times*) mentions guerrilla activity in the country during the year in question, and ranges from 0 to 34.

We also included a number of control variables, including whether the state was experiencing an interstate war (COW) during the year in question, population, logged energy/capita as a proxy for logged GDP/capita (COW), and the number of troops in the army (*MB*).

Table 1 presents our findings. In all models, we used robust standard errors clustered on country. Model 1 presents results from analyzing the battle deaths dependent variable. This variable is a count, so we used negative binomial regression. The results indicate that larger paramilitary forces are negatively and significantly correlated with the number of annual battle deaths, providing evidence in favor of the hypothesis that paramilitary forces boost state power and prevent violence. Among the controls, only logged GDP/capita is significant.<sup>14</sup> The results

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<sup>13</sup> Available at <http://www.databanksinternational.com/>.

<sup>14</sup> Given that there are several zeroes in the dependent variable, an alternative approach would be zero-inflated negative binomial (ZINB). We did not have strong theoretical expectations as to which variables should be in the inflation equation and which variables should be in the count equation. In exploring a variety of different ZINB

do not change if we instead use lagged values of paramilitary forces, or drop the Army variable. Model 2 presents results from analyzing the guerrilla war dependent variable. This variable is also a count, so we used negative binomial regression. The results were similar to Model 1, though in Model 2 Interstate War and Population became significant, as well. Model 3 presents results from analyzing the Uppsala dichotomous dependent variable. We used logit. Here, we used paramilitary forces/population, recognizing that if the measure is simply whether or not any violence breaks out (above the 25 dead threshold), then the appropriate measure is the demographic density of paramilitary forces, not the overall number. The paramilitary/capita variable is in the predicted direction, but only marginally significant ( $p < .10$ , one-tailed test). The result does not change if we drop the Population control variable. If we instead use the aggregate count of paramilitary forces (as in Models 1 and 2), then the paramilitary variable becomes statistically significant ( $p < .01$ ). Model 4 presents results from analyzing the Peic and Reiter (forthcoming) civil war onset data. We use rare events logit because the frequency of ones is quite low, again using paramilitary forces per capita. The paramilitary forces variable is not statistically significant, and remains so if we drop the population variable, or use aggregate paramilitary forces.

The substantive significance of the effect is difficult to assess because of the odd distributions of the dependent and principal independent variable. However, using Model 1, if we set the control variables to their means, the estimated battle deaths decrease from 398 to 260 if the paramilitary forces increase from 0 to the mean of 213,000.

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functional forms, we found that paramilitary forces were negatively and significantly correlated with battle deaths in some but not all ZINB functional forms.

Table 1: Paramilitary Forces and Internal Violence, 1969-2003

	Model 1	Model 2	Model 3	Model 4
	Battle deaths	Guerrilla Warfare	Uppsala Internal Violence Measure	Peic/Reiter, Civil War Onset
	Negative Binomial	Negative Binomial	Logit	Rare Events Logit
Paramilitary	-.00000196*** (.000000406)	-.000000725*** (.000000132)	---	---
Paramilitary/pop	---	---	-.0186● (.0140)	-.00371 (.0141)
Interstate War	.439 (.909)	1.52*** (.270)	1.29** (.541)	1.24** (.470)
Population	.00000386 (.00000675)	.00000204** (.000000655)	.00000258● (.00000162)	.00000141*** (.000000378)
GDP/capita (logged)	-.868** (.290)	-.367*** (.0602)	-.386*** (.104)	-.193*** (.0542)
Army	.00000258 (.00000172)	.000000573 (.000000603)	.0141 (.0206)	-.0139 (.0258)
Ln(alpha)	4.14 (.207)	.356 (.385)	---	---
Constant	---	---	-1.39*** (.209)	---
Pseudo r squared	---	---	.106	---
Log likelihood	-7146.9922	-2445.8513	-2133.1367	---
n	4413	4067	4413	4413

\*\*\*p<.001. \*\*p<.01. All significance tests are one-tailed.

Some might be concerned about possible endogeneity. Specifically, it may be that the true relationship is that the rise of internal violence causes a state to expand its paramilitary forces, and then the expansion of a state's paramilitary forces causes internal violence to decrease. This kind of relationship is demonstrated graphically in Figure 1.

[Figure 1 about here]

If this relationship is occurring, we would expect there to be a lagged, positive effect between internal violence as an exogenous variable and size of paramilitary forces as a dependent variable. We explored for this possibility, using a regression model with robust standard errors clustered on country code to analyze the determinants of per capita paramilitary forces (note that because the measure is per capita providing many fractional values, count models are inappropriate). As an independent variable, we used the Lacina and Gleditsch (2005) data on annual battle deaths, as count data such as battle deaths will provide a better measure of the ebb and flow of internal violence than will categorical variables like the onset or ongoing occurrence of internal violence. We used a variety of lags of battle deaths, of one to four years, and included the control variables included in Models 1-4, as well as a Polity measure. In no case was lagged battle death significantly related to size of paramilitary forces, providing some confidence that the results in Table 1 are not contaminated by endogeneity.

## **Conclusions**

Existing empirical research has generally failed to find systematic connections between measures of state power and internal violence. This paper explores the possible relation between perhaps the single most relevant measure of state power, paramilitary forces, and internal violence. It found that greater paramilitary forces were significantly and negatively correlated with internal violence, though not for all measures of internal violence.

These findings encourage continued work on the relationships between state power and internal violence. Coupled with past results, the general picture may be that for factors which only generally or indirectly predict to the kinds of power a state would need to deter or combat

internal violence (such as terrain or censuses), there is not, at least not cross-nationally, a significant relationship with internal violence. But, for factors which are directly related to a state's ability to deter or combat internal violence, such as paramilitary forces or FIRC following war, there does appear to be a significant relationship.<sup>15</sup>

That being said, there remains significant work to be done to flesh out our understanding of the relationship between paramilitary forces and war, and between state power and war. Future work might more precisely explore exactly what kinds of paramilitary forces are associated with deterring and combating violence, and what kinds of paramilitary forces are not. This kind of separation would allow the refinement of the measure of paramilitary forces. Relatedly, future work might separate out more effective from less effective kinds of paramilitary forces, perhaps based on existing research that has found that civilian defense forces like local militias can be relatively effective counterinsurgents, (Lyall 2010; Peic 2011), but that mechanized counterinsurgents may be ineffective (Lyall and Wilson 2009).

More generally, the analysis here suggests deepening further our theoretical understanding of the role state power plays in affecting internal violence, towards building a theory that differentiates the variety of different types and manifestations of state power. Developing an extensive theory connecting state power and internal violence needs to accomplish several tasks. It should list all elements of state power which might affect the onset of internal violence, such as geography, economic wealth, paramilitary forces, roads, etc. It should distinguish between elements that both contribute to state power and constitute a prize that, if captured, would boost insurgent power (such as, perhaps, airports), and elements that contribute to state power but do not constitute a valued prize for insurgents (such as government

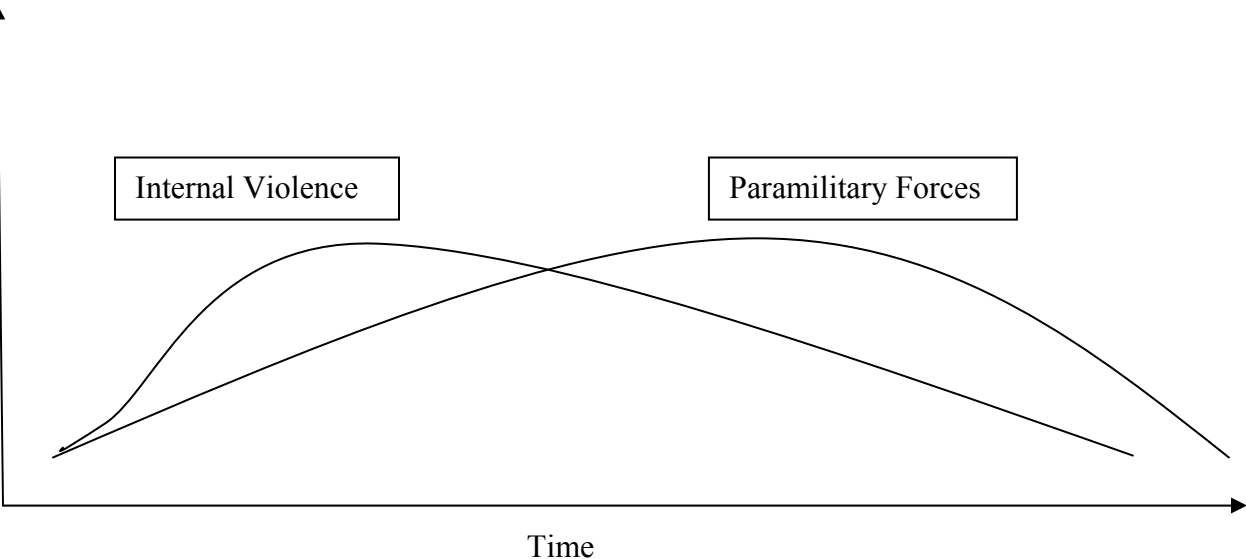
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<sup>15</sup> Notably, even uncovering robust, statistically significant relationships may not be enough to properly inform policy seeking to predict civil war onset (Ward et al 2010).

legitimacy). It should classify elements on the degree to which they can be manipulated, ranging from relatively difficult to manipulate (terrain) to moderately difficult to manipulate (transportation infrastructure) to less difficult to manipulate (paramilitary forces). Varying degrees of manipulation will indicate the degree to which endogeneity may pose a threat to inference. It should also allow for elements of state power which might both reduce insurgent activity, through deterrent or redistributive means, or provoke insurgent activity (such as paramilitary or military forces, or tax collection infrastructures). It should develop theoretical expectations as to when a certain aspect of state power is likely to increase violence, and when it should decrease violence. Lastly, it should explore for possible interactive effects among different aspects of state power. Roads can ameliorate the degree to which mountains restrain state power, for example.

Solving this puzzle is not purely of academic interest. American foreign policy is centrally concerned with helping the Afghan and Iraqi governments avoid internal violence into the future. In Afghanistan in particular, important decisions need to be made about what directions to take, including focusing on meeting basic societal needs of education and health care, building an adequate transportation network, expanding an effective military and paramilitary force sufficient to deal with the Taliban threat, and so forth. Each approach is expensive, and as noted there is reason to believe that some of these policy initiatives if mishandled could serve to exacerbate rather than mitigate violence. Building an empirically and theoretically grounded understanding of what kinds of state power can reduce violence will help both the Afghan and Iraqi regimes survive and thrive in peace in the years to come.

Figure 1: Mutual Causality Between Paramilitary Forces and Internal Violence



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