OUTSOURCING COUNTER-INSURGENCY: STATE INVESTMENT IN PRO-GOVERNMENT MILITIAS AS A RESPONSE TO REBEL STRENGTH

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ABSTRACT

BAILEE DONAHUE: Outsourcing Counter-insurgency: State Investment in Pro-government Militias as a Response to Rebel Strength
(Under the direction of Mark J. C. Crescenzi.)

In India, Nigeria, and Iraq, the government has invested in the capacity of PGMs despite the associated risks. This paper attempts to address under what conditions do governments invest in PGMs during civil wars. I argue that the degree to which a government is willing to invest in a PGM is mediated by the relative threat imposed by the rebel group(s) that the government is facing during the civil war. Governments facing relatively weak PGMs are more likely to invest in PGMs to create effective counter-insurgents. The government is less concerned that a PGM that shirks its duties or defects to the rebel group will be able to shift the war in favor of the rebels. Therefore, I argue that the likelihood of investment in PGMs increases as rebels become weaker relative to the state. Using cross-national data (1989 - 2004), I find partial support for the hypothesis that governments invest in PGMs as rebels become weaker relative to the state.

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INTRODUCTION

Governments often turn to pro-government militias ("PGMs") during civil war to assist in counter-insurgent activities. These PGMs are thought to provide governments with improved intelligence gathering capabilities, to act as force multipliers, and to secure civilians. Simultaneously, PGMs have been found to engage in civilian abuse and shirk counter-insurgent duties, even to the point of being counterproductive to the counter-insurgent goals of the state. PGMs have a fraught popular image as both protectors of the people in the face of violence against rebels through civilian defense forces and as perpetrators of atrocity against civilian populations.

By allowing for the existence of PGMs in civil war, the state is allowing a further reduction of its monopoly on violence within its borders during civil war. Despite the fact that using PGMs can be counterproductive, governments persist in permitting PGMs to operate in their borders. Governments even take further steps to invest in PGMs. This raises the question, under what conditions do governments invest in PGMs during civil war?

This study develops a theory of why governments invest in PGMs during civil war. This investment occurs despite the classic principal-agent dilemmas that the government faces when it contracts out its counter-insurgent activity to the pro-government militia. I argue that the degree to which a government is willing to invest in a PGM is mediated by the relative threat imposed by the rebel group(s) that the government is facing during the civil war. Governments facing relatively weak PGMs are more likely to invest in PGMs to create effective counter-insurgents because they are less concerned that a PGM that shirks its duties or defects to the rebel group will be able to shift the war in favor of the rebels. Therefore, I argue that the likelihood of investment in PGMs increases as rebels become weaker relative to the state.

I develop this argument in several steps. I begin by providing an overview of the relevant

literature on pro-government militias and relative rebel capacity. I then develop a theory of PGM investment in response to rebel capacity to address the question under what conditions do governments invest in PGMs during civil war. I then present an empirical test using cross-national data. I conclude by discussing the implications of my results and suggest future avenues of research.

Militias in Civil War

Traditionally, civil war literature has focused on the dyadic relationship between rebel and state treating them as unitary actors (Fearon and Laitin 2003; Walter 2002; Harbom, Melander and Wallensteen 2008; Arreguin-Toft 2001). A growing trend in the field has been to delve into the black box of both the state and the rebel group to study the plethora of actors within (Bapat and Bond 2012; Christia 2012; Krause 2013; Kalyvas 2008; Staniland 2014). This intellectual strand has moved beyond the assumption of the state acting as a unitary actor to investigate the role of violent non-state actors that fight against rebels during conflict. Scholars have begun to explore when and where it is in the states best interest to not keep a monopoly over the use of violence in its territory. In particular, it is important for scholars to understand when governments not only allow for the existence of pro-government militias but also invest in militias.

Previous studies have identified several motivations for expending a state's limited resources to create PGMs. First, there is a logical motivation for creating a force that is distinct from a states own security forces to outsource violent acts to. PGMs may allow for plausible deniability for a government that may be constrained in its unilateral ability to use violence against rebel groups and civilians. Governments outsource violence to pro-government militias to avoid accountability for abusive behavior towards civilian populations (Carey, Colaresi and Mitchell 2015*a*; Mitchell, Carey and Butler 2014; Campbell and Brenner 2002). Militias provide a cover for governments looking to avoid international accountability. By contracting out unsavory activities, the government avoids the loss of foreign aid from democracies and the potential for facing war crimes charges in the future. Other scholars have cast doubt on the outsourcing hypothesis, finding that a militia's

propensity to commit violence against civilians closely tracks with that of the sponsoring government(Cohen and Nordås 2015; Stanton 2015).

Another motivation for using PGMs is to decrease the cost to the government's security forces while fighting the PGM. Mobilizing a pro-government militia rather than a conventional army is a cost-saving mechanism. This cost-saving is true of both wealthy and poor nations. PGMs extend the government's reach into more peripheral areas where sending regular forces becomes too costly (Jentzsch, Kalyvas and Schubiger 2015).

A final motivation for using militias is that they are generally thought of as an effective counter-insurgent tool. It is thought that militias may help mitigate the "identification problem" (Kalyvas 2006; Lyall 2010). Counter-insurgents often suffer from an inability to separate rebels from civilians if they have ineffective intelligence gathering efforts at the local level. It is argued that the government may respond by developing militias which have valuable local knowledge and superior intelligence gathering capabilities in comparison to regular armed forces (Kalyvas 2006; Kilcullen 2010). During the Iraq War, Sunni militias in the Anbar province helped to influence the dynamics of the civil war in Iraq. Intelligence gathered by the Awakening Councils was essential for the success of the surge in Iraq (Biddle, Friedman and Shapiro 2012). Militias may also be mobilized after military purges in order to make up for the loss of intelligence gathering capabilities (Eck 2015). Given that rebel groups rely on their ability to blend in with the civilian population, having effective intelligence resources is essential to achieving counter-insurgency success in civil war. Clearly, there is incentive for governments to choose to use militias to combat rebels during civil war, yet, the prospect of using militias may be incredibly costly to the supporting government.

A commonly used method for discussing the government-PGM relationship is to insert such relationship into a principal-agent framework (Carey and Mitchell 2017; Eck 2015). The government (the principal), for the reasons outlined above, contracts out part or all of the rebel fighting duties to pro-government militias (the agent). The contract by which this relationship is sustained depends on the ability of the state to out-source counter-insurgent efforts to the PGM and for the PGM, in turn, to faithfully execute the work provided to

them by the government. In order to ensure that the PGM has the resources necessary to appropriately execute this contract, the government may choose to invest resources into the PGM such that the PGM can increase its efficiency.

A mechanism by which this contract is often enforced is the potential repression of the PGM by the government for not faithfully executing the contract. A government that has provided a PGM with training, logistic support, or legitimacy cannot easily punish the group by taking these assets away. Accordingly, it may be necessary to repress uncooperative militias. Punishment becomes costlier as the PGM becomes more powerful. Since the enforcement of this contract is sustained by the threat of repression, a government is making a risky calculation by investing in PGMs.

A PGM, as the agent, has the opportunity to faithfully carry out its contract with the government or the PGM can shirk its duties. A PGM that shirks its responsibilities is costly to the state because the PGM does not achieve the states strategic aims while the PGM can pursue its own aims. The activities of the PGM, especially predation upon the civilian population, can exacerbate the tensions between government and civilians that allowed for the rebels to exist in the first place. The opportunity that the PGM has to pursue its own agenda may also have long-term consequences for the investing government. A PGM may act as a spoiler at the end of the civil war as members of the PGM profit from conflict. If not offered sufficient demobilization incentives, the militias that the government trained may turn into the rebels the government will face in the future.

An example of the dilemma faced by governments when deciding to invest in PGMs is that of Nigeria in response to Boko Haram. The Nigerian security forces, in 2013, promoted the formation of civilian defense forces in the beleaguered province of Borno. These groups, known as the Civilian Joint Task Force ("CJTF"), are lightly armed, trained, paid and provided uniforms by the government. The CJTF, in turn, creates checkpoints, provides intelligence to the Nigerian Security Service, and conducts searches.

Since its creation, the ranks of the CJTF have swelled to an estimated twenty-eight thousand members. These forces have been instrumental in beating back Boko Haram from 2013 to the present. Recognizing the need to plan for the demobilization of its militia

forces, the Nigerian government has suggested that it will absorb some CJTF members into the armed forces and will employ others in government jobs such as firemen. There is concern regarding the Nigerian government's ability to commit to such a program as similar job efforts in southern Nigeria have failed to bare fruit due to weak state capacity. If the CJFT's joblessness is not addressed, Nigeria could be faced with government trained, aggrieved and mobilized fighters. As noted by Borno's governor, "If we can't educate them, we have created a Frankenstein's monster,"(The Economist, 2016).

It is apparent that the use of militias can often be counterproductive to the strategic aims of the investing government. While investing in PGMs may marginally increase the propensity for the government to be successful in civil war and reduce the cost of fighting to the governments forces, investing in PGMs may exacerbate the issues present in the principal-agent relationship between the government and the PGM. Investing in a PGM may very well make it more difficult to punish or repress the PGM in the future. Thus, it is imperative to understand under what conditions do governments make the choice to invest in PGMs despite the associated risks.

Rebel Threat and Investment in PGMs

In attempting to address the question of under what conditions do governments invest in PGMs in civil wars, it is important to remember that civil wars at their core are a contest between a set of state actors and a set of rebel actors. The mobilization of PGMs can be thought of as a strategic response to the qualities of the opponent the government is facing, particularly its strength. A rebel group's strength is constituted by several different factors, including popular support, mobilization capacity, leadership structure, external support, and equipment (Gent 2011; de Rouen Jr and Sobek 2004; Cunningham, Gleditsch and Salehyan 2009). Yet, the absolute strength of a rebel group is not as important as the relationship between the strength of the rebel group and the strength of the government (Clayton 2013). States have the benefit of several structural factors that make the difference in relative capabilities difficult to overcome, including alliances, international recognition, and a military.

Putting rebel capacity into the context of this relative relationship, rebels are most often weaker than the state. For example, the Sendero Luminoso was never a direct threat to the central interests of the Peruvian government in Lima but rather a problem in its remote hinterlands. Thus, it is unlikely that the Sendero Luminoso would ever become a direct threat to the government of Peru. At times, rebel groups are able to accrue enough resources to become a viable conventional threat to the government like Renamo in Mozambique. Very rarely do rebels reach the point of becoming significantly more powerful than the state like the case of the National Salvation Front in Romania.

The government's conflict costs track closely with the relative strength of the rebels it faces. Empirically, increasing the strength of rebels relative to the state increases the conflict costs for the government. When rebels are relatively strong to the state, they are more likely to produce higher levels of violence and challenge both peripheral and core government interests. Relatively strong rebels are a direct threat to the survival of the regime. While less powerful insurgent groups are limited to fighting the government using guerrilla and other unconventional conflict tactics, more powerful rebels are more likely to confront the government in a conventional manner. Conflicts involving relatively strong rebels while costly to the government are quickly ended and often decisively decided (Buhaug, Gates and Lujala 2009). Conflicts in which rebels are stronger are more likely to end in either a formal agreement or rebel victory all else equal (Cunningham, Gleditsch and Salehyan 2009).

On the other hand, it is a considerable economic and military task to defeat weaker rebel groups that avoid direct conflict with state troops and employ guerrilla tactics to achieve their aims. A relatively strong government may not be able to bring all of its force to bare when fighting a weaker rebel group in these situations. The tactics employed by relatively weak rebel groups require a greater focus on securing vulnerable populations and policing. Conflicts with relatively weak rebel groups may persist for a long period of time if the relatively weak group is able to capture territory (Cunningham, Gleditsch and Salehyan 2009). These conditions in Peru have allowed the Sendero Luminoso to maintain violence against the Peruvian government from 1980 to the present.

The Logic of Investment

This variation in relative rebel capacity influences the strategic decision that the government makes when constructing its relationship with its PGM. A government's investment into a PGM created to fight a rebel group in a civil war is a byproduct of the government's expectations regarding the relative threat imposed by the rebel group. PGMs typically appear in a conflict after the conflict has been initiated (Peic 2014). Therefore, I argue that the government is able to assess the relative capabilities of the rebel group as well as its strategic needs at the time of choosing to allow the existence of a PGM and choosing whether or not to invest in it.

A rational state facing a rebel group at parity with its own capabilities or stronger may want to create a PGM as a force multiplier in its conflict with the rebel group. For the reasons noted above however, the government may be concerned that investing in PGMs may be counterproductive. A government in such a situation may not want to sink scarce resources into a pro-government militia and would prefer to invest those resources directly into its conventional military instead. The government may also be concerned that the PGM will not remain in the service of the investing government during the civil war. A PGM that switches to the side of the rebels in a situation of government-rebel parity could tip the scales in favor of the rebels through its defection. The prospect of switching-sides may become more likely if the rebels are able to effectively co-opt the PGM. This capability increases as the relative capacity of the rebel group increases. The militia itself can create its own fiefdom in the conflict zone, perhaps opening up a second front that the government does not want to face. Due to these risks, a government facing a rebel group at parity or greater will be less likely to invest in its PGM(s).

On the other hand, a government faced with relatively weak rebels may turn to PGMs to act as counter-insurgents. The counter-insurgent benefits of PGMs become more important to the government that needs a means of local intelligence gathering. A marginal increase in investment in a PGM may improve the quality of the PGMs intelligence gathering. Investment may also improve the professionalism of the militia and the ability for the government to observe the activities of the PGM. Accordingly, these investments may lead to a greater

likelihood of counter-insurgent success. In addition, governments may be less concerned with a PGM shirking its duties or switching sides to fight alongside the rebels because it is more difficult for weaker rebel groups to effectively co-opt PGMs. Accordingly, these governments will be more likely to invest in PGMs.

H1: A government is more likely to invest in a PGM as rebels become relatively weak to the state.

For the purposes of this paper, I operationalize state investment in two ways: the provision of semiofficial status and government training. These two forms of investment are among the costliest forms of investment due to the potential visibility of these activities. This is not an exhaustive list of possible investments that a government can make in PGMs. Other forms of investment could be the provision of arms, logistic support, and battlefield collaboration. These additional forms of investment are not included due to data limitations.

Semiofficial Status as Investment

Given the theoretical framework above, a government is more likely to extend semiofficial status to a PGM as rebels become weaker relative to the government. By extending semiofficial status to the PGM By providing semiofficial status, the government is making a trade-off by limiting the degree to which it is able to distance itself from the PGM. Thus, by officially acknowledging the link between itself and the PGM the government in effect is linking its legitimacy to that of the PGM. By acknowledging the link, the government reduces some of the surveillance problems associated with the principal-agent relationship (Stanton 2015).

The provision of semiofficial status to a PGM may also bolster the counter-insurgent capabilities of the PGM. Semiofficial status allows for clearer collaboration between the PGM and security forces. This makes the transmission of intelligence between the PGM and the government more efficient. The efficiency gained from effective intelligence gathering is more important as rebel groups become weaker and rely more on hiding amongst the population.

Another benefit of extending semiofficial status to a PGM is to garner legitimacy amongst the local population which weaker rebel groups rely on. Legitimizing a militia by providing semiofficial status may be a costly signal to civilians in embattled territory that the government has popular support (Carey, Colaresi and Mitchell 2015*b*). Since weaker rebel groups will typically rely on the local population, part of conducting a successful counter-insurgency is to bolster the image of the government within vulnerable populations.

This form of investment also poses a threat to the investing government. Semiofficial militias may further alienate the local population through predation. These acts may then be attributed to the government. In addition, a semiofficial militia may eclipse the legitimacy of the state in the militia's area of operation if the locals do not attribute the services provided by the PGM as being from the government. Incorrect attribution may create opportunity for PGMs to set up fiefdoms in the territory that they operate in. This makes a PGM difficult to repress if it benefits from popular support. Further, the ability for a PGM to consolidate support may be an effective launching pad for leveraging the government for additional concessions to end the war or for the PGM to begin its own insurgency.

Government Training as Investment

Training is another form of investment that is likely to increase as rebels become weaker relative to the government. Successfully training militia forces so that they may effectively transfer intelligence from the local population to the government allows for improved counter-insurgent operations. This is especially important with weak rebels hiding amongst the population. In addition, government training instills a degree of professionalism in the PGM ranks which allows for better collaboration between the state and the PGM.

This form of investment also may have negative consequences for the investor. Providing training to PGMs, promotes greater organization and fighting skill amongst the ranks. These benefits also become problematic when the government seeks to repress the PGM. Clearly, it is much more difficult to repress a PGM that has been trained to fight than a loose organization of untrained individuals. Training can also make PGMs effective insurgents

later on.

Empirical Strategy

To test my hypothesis, I require a measurement of the presence of PGMs in civil wars as well as measurements of different forms of investment that a government may make in its PGM. I begin by using the UCDP dyadic dataset to define the sample size of civil wars. As is a common practice, I define a civil war as a conflict that has greater than 25 battle deaths per year. I include dyads for the years 1989 - 2004. I then use the Pro-government Militias Database to determine when PGMs are present in year of the conflict(Carey, Mitchell and Lowe 2013). Violent non-state actors are included in the dataset when they meet the following criteria: the group is identified by a sources as pro-government or sponsored by the government, is identified as not part of the regular security forces, is armed, and has some level of organization.[1] Using Stantons data as a starting point, I then identify the militias were present during those conflict years to fight militias. Stantons data is limited to civil wars with 1000 battle deaths or more. For the additional conflicts present in my data, I use Lexus Nexus to verify that militias were present during conflict years to fight militias. This process leads to a dataset that includes 790 observations of 72 countries.

I test two dependent variables that capture different elements of investment in militias by governments: *Government Trained PGM Present* and *Active Semiofficial PGM Present*. *Government Trained PGM Present* is a dichotomous variable which takes on the value of 1 when there is a pro-government militia active in the dyad that has received training from the government and 0 if it has not. *Active Semiofficial PGM Present* is also a dichotomous variable which takes on a value of 1 when there is a semiofficial militia active in the dyad that has received semiofficial status from its patron government and 0 when there is not a semiofficial militia active in the dyad. PGMs are coded as semiofficial if the PGMs "have a formally and/or legally acknowledged status, in contrast to the looser affiliation of

[1] In the PGM dataset, Carey et al. exclude both Somalia and Lebanon from their analysis as it is difficult to conclude whether or not a militia is strictly pro-government given that it is unclear what the government is at the time.

informal PGM. A semiofficial PGM might be subordinate to the regular security forces but is separate from the regular police and security forces," (Carey, Mitchell and Lowe 2013). In contrast, an informal PGM is a PGM that is not officially or formally acknowledged by the government. The semiofficial PGM is active in the dataset when there are observations of the militia being active in that year. Table 1 presents the frequency of observations of each of the dependent variables in the data.

Table 1: Frequency of Observations

	0	1
Semiofficial Status	336	454
Government Training	235	555

Table 2 provides a cross tabulation of the dependent variables. As can be seen in the table, there is a high degree of correlation between the two variables.[2]

Table 2: Cross Tab of Dependent Variables

	Government Trained	
	0	1
Semiofficial Status		
0	210	126
1	25	429

[2] In addition to the models shown below, I include in Section A of the appendix the results of a bivariate probit analysis to attempt to model the correlation between the two dependent variables.

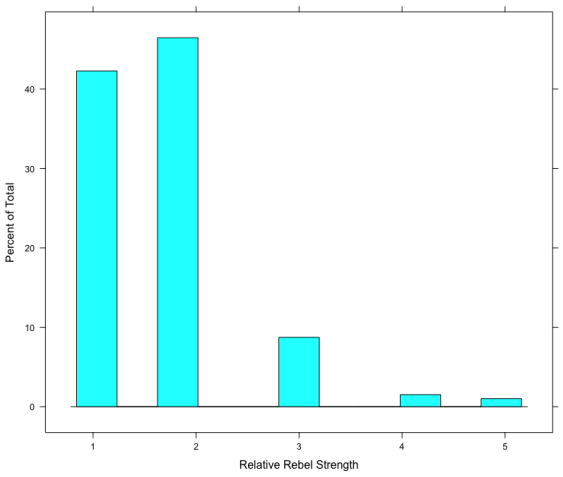

Fig. 1: Histogram of Relative Rebel Strength

The measurement for relative rebel capacity is adopted from the VNSA dataset (Cunningham, Gleditsch and Salehyan 2009). This measurement relies on a holistic approach to encoding relative rebel capacity not only relying on the number of rebel troops but also accounting for more qualitative forms of relative rebel capacity. The variable separates rebel groups into five categories of strength relative to the state: much stronger, stronger, parity, weaker, much weaker. A group that is much stronger is coded as 5, a group that is strong relative to the government is coded as a 4, a rebel group at parity with the government is labeled a 3, a rebel group that is weaker than the government is a 2, and finally a rebel group that is much weaker than the government is a 1.

Figure 1 is a histogram of the distribution of observations of relative rebel strength in the data set. As expected, there are more observations of weak and much weaker rebels than those that are at parity or strong relative to the government. Given that the variable is coded in such a way, I expect that the coefficient for relative rebel capacity will be positive indicating that as rebels become weaker relative to the government one will observe more investment in the PGM.

In addition to relative rebel strength, I include several traditional control variables. *(ln) Battle deaths* is the natural log of annual battle deaths during the civil war and captures the cost that the conflict imposes on a government's regular forces. This measure is adopted from the UCDP Battle-Related Deaths Dataset database (Melander, Pettersson and Themnér

2016). States that have greater resources may be able to make larger investments in their PGMs. Accordingly, I include the natural log of GDP per capita drawn from the Penn World Tables measure of GDP per capita to account for *(ln) GDP per Capita* (Feenstra, Inklaar and Timmer 2015).

Further, I include a measurement of democratic aid provided to the government. Governments that rely mostly on democratic aid will be more cautious with regards to the violence they allow their militias to commit. This suggests that these governments will want better trained and more capable PGMs. While, governments that have sources of aid from non-democratic states may be far less concerned with the international audience cost of being linked to indiscriminate violence committed by their PGMs. The AID 2.0 database has measurements of aid. I then code the adjusted value based on purchasing-price parity from democracies. For the purposes of coding this variable, democracies are countries that are at least a 7 on the Polity2 scale. I then take the natural log of the measurement of democratic aid.

I also code whether the rebels control territory as a means of capturing another dimension of rebel strength that is not necessarily captured in the relative rebel strength measure. It is possible that governments are more likely to invest in PGMs when rebels control territory because this may make the rebels harder to defeat and would require greater investment. I use the NSA dataset's dichotomous measurement of territorial control to capture this (Cunningham, Gleditsch and Salehyan 2009).

I include *Multiple Militias* as a dichotomous variable that is coded 0 when there are not multiple militias present in the conflict. Rather than choosing to invest in one group, a government may choose to mobilize several militias to fight rebels thus outsourcing violence to several weak groups rather than simply empowering one militia. One can think of the 17 militias the Indonesian government had fighting against the Fretelin. I code this variable using the PGMD dataset. To account for the age of the insurgency, I include a measurement of the duration of conflict taken from the *UCDP Dataset*.

A government may be more likely to invest in a PGM when fighting an irregular war. I include a measurement of irregular warfare that is a dichotomous variable adopted from

Balcells and Kalyvas Balcells, Kalyvas, Balcells and Justino (2014) dataset on the technology of civil war. A government may be more likely to invest in PGMs when fighting an ethnic conflict. I create a dichotomous variable *Identity* to indicate whether the conflict is ethnic or not adopted from the UCDP dataset. I include a measurement of regime type which is a 21-point indicator from the Polity IV dataset (Marshall and Jaggers 2015).

Tables 3 and 4 present summary statistics of key independent variables.

Table 3: Descriptive Statistics

	(ln) Battle Death	(ln) GDP Capita	(ln) Democratic Aid	Multiple Militias
Minimum	1.17	5.04	8.55	0.00
Median	1.82	7.55	19.59	1.00
Mean	1.76	7.57	19.26	0.52
Maximum	2.38	10.53	23.09	1.00
Standard Dev.	0.49	2.24	6.29	0.48

Table 4: Descriptive Statistics

	Duration	Territorial Control	Irregular	Polity 2	Identity
Minimum	0.00	0.00	0.00	1.00	0.00
Median	8.00	0.00	1.00	11.00	1.00
Mean	10.80	0.40	0.63	12.30	0.76
Maximum	54.00	1.00	1.00	21.00	1.00
Standard Dev.	24.30	0.47	0.47	8.19	0.47

Findings

The findings of my analysis are presented in Tables 5 and 6. Since the dependent variables of interest are both dichotomous, I use logistic regression models with random intercepts for conflict to test my hypothesis.[3] As per my hypothesis, I expect that *Relative Rebel Strength* will be negative. As expected, the coefficient for *Relative Rebel Strength* is negative for all models.

For models with *Active Semiofficial Militia Present* as the dependent variable, relative rebel strength is statistically significant for all models. This provides initial support for

[3] Given that I am using a random intercepts model, it is necessary to rescale my continuous variables to normalize the range of possible values. This operation is done using the scale function in R which subtracts the mean and then divides by the standard deviation.

my hypothesis that as rebels become weaker relative to the government, the likelihood of observing a government extending semiofficial status to a PGM increases.

For models with *Government Trained Militia Present* as the dependent variable, relative rebel strength falls in and out of statistical significance. This may be a result of government training being a noisy variable. This variable is coded based on whether or not government trained militias are reported. It is possible that there is some measurement error in this variable. Accordingly, my hypothesis is partially supported by these models. As rebels become weaker relative to the state, the likelihood of observing an active government trained militia may increase.

In addition to my key explanatory variable, *(ln) Battle Death* is positive and statistically significant for models 5 and 6. This suggests that as conflict intensity increases, the likelihood of observing a government trained PGM in a dyad may also increase. The models that have semiofficial PGM active is also positive but not significant at typical levels of statistical significance. *Duration* is also positive and statistically significant in Models 1 and 4, suggesting that as the age of a civil war increases so to does the likelihood of viewing both government trained and semiofficial militias. *Multiple Militias* is also positive and statistically significant.

In order to understand what these findings mean substantively, I simulate and plot predicted probabilities for the model with semiofficial status as the dependent variable of interest with lower AIC indicating better fit. For the purposes of this simulation, I hold all continuous variables at their mean and set dichotomous variables at either 0 or 1. Figure 2 is a plot of the simulated predicted probability of observing an active semiofficial militia in a conflict given the 5 different values of relative rebel strength with all continuous variables at their means and the dichotomous variables Multiple Militias and Territorial Control held at 1.

The red point indicates the point estimate of the predicted probability. The black points represent the ninety-five percent confidence intervals around the point estimate. The body of the violin around the point estimate indicates where the bulk of the predicted probability is located.

Table 5: Results of Logit with Random Intercepts: Semiofficial

	Dependent variable:		
	Active Semiofficial Militia Present		
	(1)	(2)	(3)
Relative Rebel Strength	-0.957^{***}	-1.138^{***}	-1.019^{***}
	(0.346)	(0.342)	(0.358)
(ln) GDP per Capita	0.177	0.758^{*}	0.909^{*}
	(0.432)	(0.445)	(0.535)
(ln) Democratic Aid		0.265^{**}	
		(0.109)	
Polity 2		0.356	
		(0.341)	
(ln) Battle Death	0.140	0.095	0.049
	(0.231)	(0.220)	(0.228)
Duration	1.329^{***}		
	(0.342)		
Territorial Control	-0.455		
	(0.409)		
Multiple Militias	1.316^{**}		
	(0.543)		
Irregular			0.402
			(0.791)
Identity			2.961^{*}
			(1.517)
Constant	0.250	-3.776^{*}	-2.011
	(0.944)	(2.173)	(1.705)
Observations	790	790	790
Log Likelihood	-251.650	-261.616	-262.573
Akaike Inf. Crit.	519.300	537.232	539.146
Bayesian Inf. Crit.	556.677	569.936	571.850
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 6: Results of Logit with Random Intercepts: Government Trained

	Dependent variable:		
	Government Trained Militia Present		
	(4)	(5)	(6)
Relative Rebel Strength	−0.242	−1.163***	−1.162***
	(0.766)	(0.404)	(0.403)
(ln) GDP per Capita	1.266	1.225	1.146
	(1.521)	(0.752)	(0.730)
(ln) Battle Death	1.360	0.943**	0.971**
	(0.852)	(0.394)	(0.394)
Duration	10.296***		
	(2.593)		
Territorial Control	0.378		
	(1.202)		
Multiple Militias	27.148***		
	(4.938)		
(ln) Democratic Aid		0.022	
		(0.218)	
Polity 2		−0.361	
		(0.454)	
Irregular			0.381
			(0.754)
Identity			1.017
			(2.072)
Constant	−3.595	12.638**	11.774***
	(2.655)	(4.917)	(2.351)
Observations	790	790	790
Log Likelihood	−89.970	−154.666	−154.744
Akaike Inf. Crit.	195.940	323.332	323.489
Bayesian Inf. Crit.	233.316	356.036	356.193
Note:			*p<0.1; **p<0.05; ***p<0.01

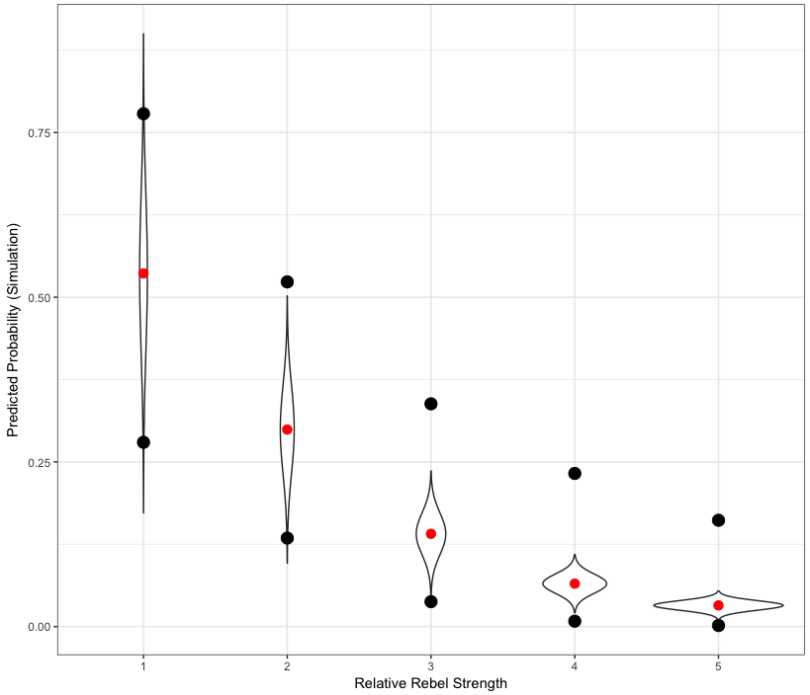

Fig. 2: Violin Plot Dichotomous IVs at 0 and Continuous IVs at Mean

The violin plot shows that the predicted probability of observing an active semiofficial PGM increases as rebels become weaker relative to the state. We should approach the results of this study with a degree of caution, considering the degree of uncertainty illustrated by the range of predicted probabilities surrounding the point estimate. As noted in the descriptive statistics, there are far more observations of much weaker and weaker rebel groups which correspond to values of 1 and 2 respectively. This suggests that there is still a great deal of variation within the group. This is perhaps a result of the sheer amount of variation between the rebel groups within these categories.

A random sampling from those groups that receive a score of 2 include the LTTE in Sri Lanka, FARC in Colombia, GAM in Indonesia and UNITA in Angola. These groups may have similar military capacity scaled by the size of the state they are fighting but these groups vary dramatically in their capacity to mobilize resources, their popular support, the centrality and strength of their hierarchy. These aspects are qualitatively accounted for in the measure but in turn create a great deal of within group variation in the measure. Thus, the measure of rebel capacity should be seen as a flawed measure.

Figure 3 shows the predicted probability of observing an active semiofficial militia in

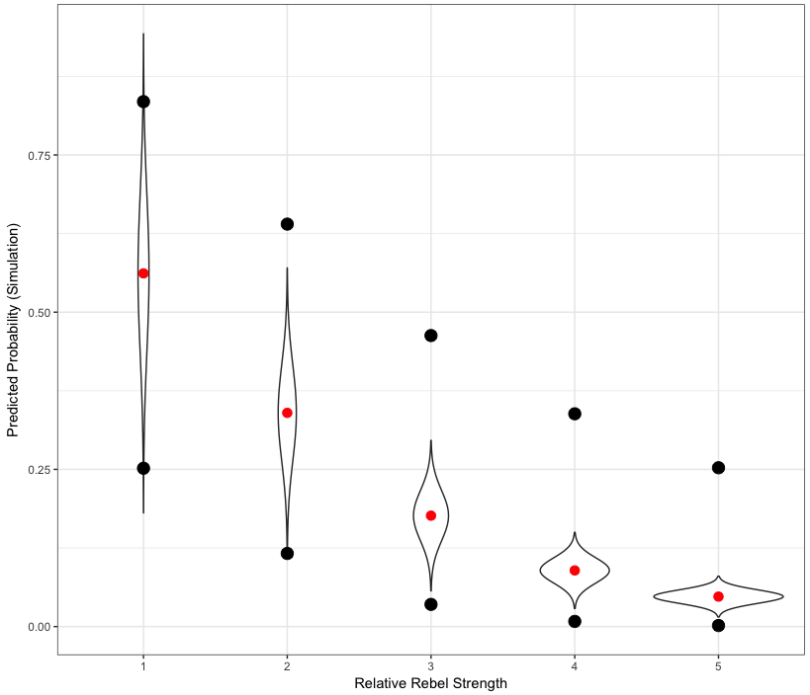

Fig. 3: Violin Plot Dichotomous IVs at 1 and Continuous IVs at Mean

a conflict with all continuous variables held at their mean and dichotomous variables held at 0. Figure 3 shows an even greater degree of uncertainty in the predicted probability of observing an active semiofficial militia at level 1 and 2 of relative rebel strength.

Robustness Check

Due to the poor variation of the original measurement of relative rebel strength, I use a measurement of relative rebel strength that is continuous as a robustness check. The measurement is constructed by making a ratio of rebel troops squared over total government troops adopted from the NSA dataset (Cunningham, Gleditsch and Salehyan 2009). I then take the natural log of the ratio. Due to missing data for estimates of rebel troops, the number of cases for this analysis drops to 668 observations of 99 conflicts in 69 countries. Table 7 provides summary statistics for this measurement. Once again, the hypothesis that investment increases as rebels become relatively weak suggests that we should expect a negative coefficient.

For this analysis, I use the model from the previous analysis with the dependent variable of Active Semiofficial Militia Present with the lowest AIC, model 1. I use the same control

Table 7: Summary Statistics of Relative Rebel Strength (Continuous)

	Relative Rebel Strength (Continuous)
Min.	-5.99
Median	-1.25
Mean	-1.36
Max.	3.36

variable specifications as the previous model. Once again, I run a logit model with random intercepts on conflict. Table 8 presents the results of the analysis.

Table 8: Logit with Random Intercepts - Continuous

	Dependent variable:
	Active Semiofficial Militia Preset
Relative Rebel Strength (Continuous)	-0.354^{**}
	(0.173)
(ln) Battle Death	0.098
	(0.239)
(ln) GDP per Capita	0.211
	(0.437)
Duration	1.380^{***}
	(0.346)
Multiple Militias	0.906
	(0.555)
Territorial Control	-1.140
	(0.810)
Constant	-1.140
	(0.766)
Observations	668
Log Likelihood	-225.000
Akaike Inf. Crit.	466.000
Bayesian Inf. Crit.	502.000
Note:	*p<0.1; **p<0.05; ***p<0.01

As hypothesized, the measurement of Relative Rebel Strength is negative and statistically significant which once again provides support for my hypothesis. In addition, duration

is statistically significant and positive. In order to understand what these findings mean substantively, it is best to graph the predicted probability of observing the dependent variable.

Figure 4 presents the predicted probability of observing an active semiofficial militia given values of relative rebel strength. For this simulation, all continuous variables are held at their means and the dichotomous variables are at 1. The predicted probabilities are constructed via simulation. The solid red line is the point estimate and the red dotted lines are the 95 percent confidence intervals. The black dashes along the x axis show the distribution of the observations along the continuum of relative rebel strength.

There is still a great deal of variance around the point estimate of the predicted probability. While the trend that I find is statistically significant, there is a great deal of uncertainty around the predicted probability. This suggests that these findings should be viewed with a degree of skepticism.

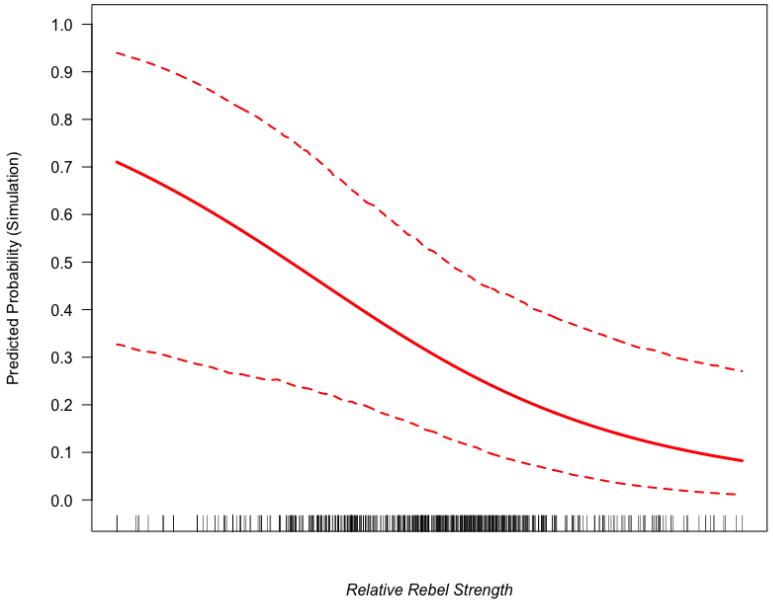

Fig. 4: Predicted Probability(Simulation)

Conclusion

This paper was initially motivated by asking under what conditions do governments invest in their PGMs during civil war? This investment occurs despite PGMs often being counterproductive for the state's objectives in civil war. This paper proposes that governments take into account the relative capabilities of their opponents when choosing to invest in a PGM. For governments facing rebels at parity with or stronger than the state, investment in PGMs may pose further threat to the state's survival. As PGMs become weaker relative to the state, the conditions of the civil war being fought change to allow for the effective outsourcing of counter-insurgency to PGMs. This paper finds mixed support for this theory. While my findings are statistically significant, the substantive findings of my study should be met with a degree of skepticism.

There are several strategies to improve the test of the theory in this paper. One confounding factor in this study is that there are two potential means by which governments can mobilize PGMs. A government can promote the development of a PGM directly or it can co-opt pre-existing militias. Currently, cross-national data on PGMs does not systematically code these two methods of mobilization. These militias may serve two different

strategic purposes. A government may choose to invest in a co-opted PGM to ensure loyalty and to gain local favor while the directly developed PGM may be more essential for carrying-out behavior that allows the government to reduce accountability. An example of this distinction is the case of the two militias mobilized against the Sendero Luminoso in Peru. The Ronda Compensina group was a grass-root level PGM that the Peruvian government co-opted to protect civilians. The Colina Group was created by the government to carry out assassinations and other controversial activities. There may be unaccounted for variation in the reason for investing.

The analysis may be extended to different forms of investment, such as the provision of arms or logistic support that may help delve deeper into this relationship. The variables that are used in this current analysis do not provide a scale of investment. Instead, it simply looks at whether there was some form of investment or not. A more encompassing study of investment may consider the degree of investment by the government.

A better understanding of when governments choose to invest in PGMs is highly relevant. Do governments choose to invest in PGMs as a last resort and in response to a series of losses? Or do governments pre-emptively invest in PGMs? Future research could address the relationship between location, rebel capability and the mobilization of PGMs. Previous empirical studies have linked rebel capacity to the location of where the conflict is taking place. While I attempt to control for some spacial dependencies in my analysis, a more fine-grained study of where PGMs are active and fighting insurgents would be of great consequence. Another important avenue for future research is the effectiveness of PGMs. This study takes for granted that PGMs are thought to be effective counter-insurgents. While anecdotal evidence suggests that this may be the case, there is a paucity of empirical studies regarding the effectiveness of PGMs. This may be a result of the difficulty of operationalizing what it means to be an effective PGM due to the plethora of objectives that governments have when they are choosing to create a PGM.

This study has added to the growing discussion of how governments choose between the short-term advantage on the battlefield provided by PGMs and the long-term consequences of having raised these PGMs in the first place. Moving away from the assumptions of a

unitary state allows scholars to understand a wider array of possible interactions between the forces that fight on behalf of the government and the forces that fight for rebels.

APPENDIX

Bivariate Probit

As a result of the high degree of correlation between the two dependent variables, I also conduct the same analysis using a bivariate probit. Unfortunately, I cannot use the same multi-level framework that I had used in the analyses in the paper. Instead, I use clustered standard errors on country. This is a trade off, rather than modeling the potential clustering of error in the model itself, clustered standard errors correct for clustering after the analysis.

Table 9 presents the results of the bivariate probit with country clustered standard errors. Importantly, relative rebel strength is still negative and statistically significant. In addition, the ρ term is statistically significant which suggests that the two dependent variables are correlated. This suggests that in future iterations of this paper, it may be best to consider this form of model for analysis.

Table 9: Results of Bivariate Probit with Clustered Standard Errors

	(1) Model 1 b/se
Active Semiofficial Militia Present	
Relative Rebel Strength	-0.558**
	(0.18)
Duration	0.367**
	(0.15)
(ln) GDP per capita	0.154
	(0.15)
(ln) Battle Death	0.079
	(0.13)
Territorial Control	-0.262
	(0.24)
Constant	1.263**
	(0.45)
Government Trained Militia Present	
Relative Rebel Strength	-0.679**
	(0.20)
Duration	0.314**
	(0.14)
(ln) GDP per capita	0.117
	(0.15)
(ln) Battle Death	0.131
	(0.14)
Territorial Control	0.297
	(0.29)
Constant	1.696**
	(0.44)
ρ	
Constant	1.179**
	(0.27)
Observations	790
Akaike Inf. Crit.	1491.989
Bayesian Inf. Crit	1552.726

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