

Risk Mitigation, Regime Security, and Militias:

Beyond Coup-proofing

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Despite the risk it entails, governments arm their populations as irregular forces. The widespread presence of these militias challenges the expectation that governments monopolize the tools of violence. To explain why this is the case, we draw on the logic of delegation and argue that governments have multiple incentives to form armed groups that, while linked to the state, remain outside the control of its regular security forces. These armed groups can act as substitutes for governments' potentially unreliable regular forces, thus offsetting the risks for a coup. Similar to other public-private collaborations, these groups complement the work of regular forces and provide efficiency and information gains. Furthermore, these groups distance the government from the controversial use of force. These traits suggest that militias are not simply a sign of failed states or a precursor to a national military, but an important component of security portfolios in many contexts. Using cross-national data (1981-2005), we find support for this mix of incentives. From the perspective of delegation, the domestic and international incentives for governments to choose militias raise explicit governance and accountability issues for the international community.

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Three months before the May 2014 coup, Thailand's prime minister travelled to the north of the country. Supporters greeted her with plans to raise militia forces to fend off attempts to overthrow her. A leading supporter, with the nickname Rambo said, "If one day we have to fight ... we will. We don't want to allow any kind of coup" (Hookway and Chomchuen 2014). Though the coup came before Rambo and the Prime Minister could act, plans to create a militia indicate that the leadership anticipated a threat to its power.

While not ultimately a victim of a coup, Muammar Gaddafi prepared better than Thailand's prime minister for an internal military challenge. Gaddafi himself gained power through a coup d'état. He knew the need to have a well-equipped armed force that could prevent a coup and counterbalance the military. Therefore, he created the Revolutionary Guard Corps, which contained the power of the regular military (Cordesman 2004:108). This group proved its worth in 1986 and 1993, when it successfully crushed army uprisings (Hedges 1993)

In this article, we investigate why some leaders create armed forces outside of their regular security apparatus despite the risks this entails and the capacities enjoyed by their regular forces. These irregular forces divert resources from regular troops, fragment the security apparatus, and are likely to be more difficult to control than units within the hierarchical structure of the military. Yet these parallel forces, or semi-official militias, form part of the security sector in many countries around the globe.

Political leaders face several challenges that these groups address. Beyond defending against a coup, these groups may complement regular forces and reduce the costs borne by government engaged in counter-insurgency campaigns. In keeping with other public-private collaborations (Donahue and Zeckhauser 2011), collaboration in the security sector offers efficiency or 'force multiplier' gains, access to greater information, and enhanced legitimacy. With organizational separation from regular forces, and a closer connection to the civilian population, militias enjoy specific access to local intelligence. They put at least some "daylight" between the state and the delivery of a policy (Fiorina 1985:187), while also offering the prospect of lowering the political costs for violent actions. The logic of delegation, an increasingly important analytical approach in the international-relations literature (e.g., Hawkins, Lake, Nielsen, and Tierney 2006:4), suggests readily deployable militias permit leaders to reduce the cost of a conflict and shift responsibility for controversial and costly violence outside the regular command structure (Carey, Colaresi, and Mitchell 2015). In this article, we investigate whether the incentives for outsourcing security extend beyond coup-proofing.

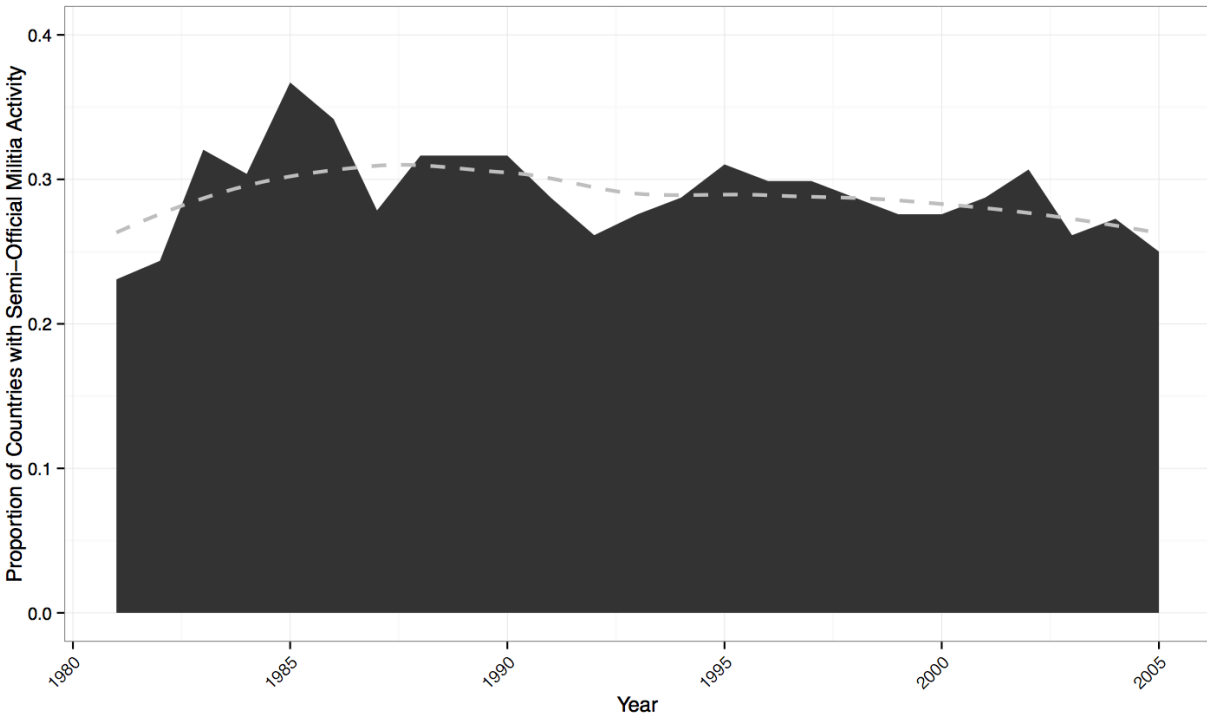
Figure 1 shows that such parallel forces were, on average, active in between 25 and 35 percent of all countries in a given year from 1981 to 2005.¹ Further, for every year on record the proportion is greater than 0.2.² We expect militias in failed states, or in de facto failed states. But we do not expect existing states to arm citizens and organize militias. What, then, motivates leaders to include semi-official militias in their mix of security forces?

To understand the incentives to maintain forces outside the regular security apparatus, the coup literature offers both theoretical and methodological insights. It identifies an incentive for semi-official militias that fits more broadly with the analysis of delegation and it provides a useful empirical strategy to address our puzzle with the construction of a risk index (e.g., Belkin and Schofer 2005; Quinlivan 1999). As the events in Thailand and Libya suggest, governments facing a heightened risk of a military coup d'état likely consider creating or aligning with armed groups outside their regular military structure (e.g., Belkin and Schofer 2005; de Bruin 2014; Quinlivan 1999; Pilster and Böhmelt 2012). In 1979, for example, the new government of Iran created the Revolutionary Guard out of concern about the loyalty of the regular forces to the old regime. This perspective suggests that as coup risk increases, the existence of parallel forces become more likely. We contribute to and extend this research by focusing our analysis on forces distinct from the regular security apparatus, yet still officially under the control of the government. We argue that coup-proofing is an important explanation for these groups, but that leaders use these forces for a variety of challenges.

We develop this theoretical argument for collaboration in the security sector and then describe the data, measurement, and models. Following the coup literature, we construct risk indices for civil war and for accountability as well as for coups. The empirical results suggest that these other risks also are related to the decision to delegate security tasks. While multiple incentives exist for leaders to use these groups, doing so likely creates costs to civilians and to the international community. We discuss these downsides in the conclusion.

¹ The data come from the Pro-Government Militia Database (PGMD), using the information on semi-official militias (Carey, Mitchell and Lowe 2013; Mitchell and Carey 2013).

² The dotted gray line is a loess-smoothed line that indicated the proportion is relatively steady over time. This trend may in part be attributed to the increases in information sources available over the time period covered by the dataset.



Note: The grey dotted line represents a loess smooth of the proportions across the time period.

FIG 1. The proportion of countries with activities of semi-official militias in a given year, 1981-2005.

Collaboration in the Security Sector: A Coup-proofing Strategy

About 100 coup attempts took place between 1950 and 2010 (Powell and Thyne 2011), and a further ten occurred within the last five years (Shannon, Thyne, Dugan, and Hayden forthcoming). While not an everyday occurrence, prudent leaders develop strategies to reduce the risk of a coup d'état. One such strategy includes creating multiple and overlapping security institutions.

Quinlivan (1999:149) explains this strategy and suggests that the existence of multiple agencies “creates a market with multiple sellers of ‘security services’ and a single demanding buyer. This helps ensure that the services are both loyal and active.” With the government as the sole buyer of security, the different organizations compete for resources, favors, and other

benefits from it. Competition increases the loyalty of the forces to the government and reduces the risk of a coup. The literature on coup-proofing further suggests that leaders aim to reduce the risk of a coup by balancing different security agencies against one another (Belkin and Schofer 2005:149-150; Quinlinvan 1999:131).

Forces outside the regular security apparatus are well-positioned to act as counterbalancing agents in order to deter a coup (Pilster and Böhmelt 2012). Carey, Mitchell, and Lowe (2013) identify such groups as semi-official pro-government militias, which remain outside the regular security forces but with an acknowledged relationship with the government. Governments often trumpet, and even exaggerate, the strength and popular legitimacy of semi-official militias. For example, in the months before the coup, the Thai prime minister's supporters described a force of 200,000 willing to lay down their lives (Hookway and Chomchuen 2014). President Saddam Hussein maintained a permanent semi-official militia named the "Popular Army" that was outside the regular military's chain-of-command. The logic of coup-proofing suggests that an increasing risk of regular military intervention into politics will increase the likelihood of semi-official militias:

Hypothesis 1: *An increased coup risk raises the probability of observing a semi-official militia in a country.*

Beyond Coup-Proofing: Responding to Other Regime Challenges

Rather than assuming an evolutionary process consolidating violence in the state (North, Wallis, and Weingast 2009) or drawing on other "deep-seated" historical factors (e.g., Ahram 2011), our theoretical argument identifies general incentives to delegate security tasks to semi-official militias. We expect that the logic of a diverse "state-non-state" security sector, as exemplified in the coup-proofing literature, also applies to other regime challenges.

Our argument fits within an emerging international relations literature that draws on the analysis of delegation. Some scholars investigate the formation of international organizations (Lake and McCubbins 2006) and the hazards of international intervention (Kuperman 2008) through the lens of principal-agent relations. Others analyze the incidence of sexual violence

committed by security forces (Butler, Gluch, and Mitchell 2007), the impact of military interventions on government killing (DeMeritt 2014), or the use of proxies or militant groups to advance foreign policy goals (Bapat 2012). While these latter studies may not always use the lexicon of principal-agent theory, they share a common theoretical root with studies of delegation by highlighting the convenience of shifting responsibility for costly actions to another agency or to an individual. This common root can be traced as far back as the 16th century when Machiavelli describes how leaders seek to evade accountability for political violence. He provided a graphic description of how Cesare Borgia delegated cruelty to his Spanish minister, Remirro de Orco, so that Cesare could be removed from the violence and any blame that went with it (Machiavelli 1977:22).

Collaborating with non-state groups or individuals, or even creating or encouraging the formation of such groups, offers advantages that apply to a wide variety of policy domains (e.g., Olson 1965:149; Thelen 2012). Examining the management of common pool resources, Ostrom (1990:14-15) finds that standard theoretical alternatives of a state solution versus a private property solution did not reflect the mix of private and public institutions. Similarly, Donahue and Zeckhauser (2011) analyze the phenomenon of collaborative governance and ask why and how governments involve the private sector in delivering specific policies. We propose that the underlying expectations of efficiency gains, information gains, and legitimacy gains that drive public-private collaboration (Donahue and Zeckhauser 2011) fit the rationale behind the collaboration between governments and parallel armed forces. Governments anticipate specific gains by outsourcing the responsibility of the security task to non-state actors.

Beyond counter-balancing, we argue that outsourcing some tasks in the security area offers efficiency gains when governments anticipate a threat from rebel groups. With counter-balancing and the coup threat, militias serve as substitutes for regular forces. With efficiency gains and the rebel threat, militias serve as complements to the regular forces. The literature identifies three efficiency gains (Donahue and Zeckhauser 2011:122; Jentzsch, Kalyvas, and Schubiger 2015). First, these groups act as force multipliers. Second, they provide specialized information to the government during counter-insurgency operations. Third, they contribute to maintaining or increasing the legitimacy of the government.

As force multipliers, irregular forces offer governments a flexible and comparatively low-cost solution to increased demands for security. They mobilize faster and are cheaper to equip and maintain than regular forces. In Guatemala in the 1980s, for example, the government armed the Civil Defense Patrols, which increased their deployable forces. The government recruited

these non-state actors locally and they far outnumbered the regular army (30-50,000 in the Guatemalan Army and 600,000 plus in the Patrols). We expect governments to value militias as flexible force multipliers to defeat rebels.

Groups drawn from the local population and possibly recruiting former insurgents into a semi-official militia, as the Indian government did in Kashmir in the 1990s, provide a means of overcoming the information disadvantage that characterizes counterinsurgency campaigns. If these groups lack the equipment or military skills that characterize regular units, they have other skills that complement the regulars—useful knowledge on the identity, location, and supply networks of rebel forces, for example. With reference to the civil patrols in Guatemala, Kalyvas points out that “While the individual militia members may be focused on defending their villages or families, the fact that they are permanently present in their villages and are operating in places they know well allows incumbents to tap into private information” (2006:107). In Peru, the permanent presence of self-defense organizations in the conflict zone proved critical for defeating the Shining Path. A Peruvian military commander explained: “We don’t have enough soldiers to patrol and control the entire countryside” (quoted in Fumerton 2001:488). These self-defense communities informed the counter-insurgency strategy: “‘the hundred thousand ears and hundred thousand eyes’ of the state, embodied in the self-defense committees” (Fumerton 2001:488). Specialized information is at a premium in countries with a high risk of civil war.

By formally incorporating and collaborating with armed groups, governments can also increase their legitimacy and acceptance among the populations from which these armed groups are drawn. For example, the British raised the Home Guard in Kenya to boost force numbers on the ground, to give them information about the rebels, but also to increase the legitimacy of their security policies in their colony. As Anderson puts it, “an official Kikuyu militia to fight Mau Mau would break through the notion that this was a race war that pitted African against European” (2005:240). Semi-official militias signal popular support for the regime with their open mobilization of civilians, notably in ethnically fragmented contexts.

Under particular conditions these groups increase the efficiency of security provision. Semi-official militias offer a relatively low cost and flexible force, specialized information, and legitimacy.³ As outlined above, we expect to find these militias when a government faces an increased risk of armed conflict and civil war:

³ The advantages of providing local information, as well as extra armed forces quickly and relatively cheaply also apply to armed groups that lack the official link and recognition by the government.

Hypothesis 2: *An increased risk of civil war raises the probability of observing a semi-official militia in a country.*

In addition to *gaining legitimacy* domestically, governments collaborate with these armed groups to *avoid the risk of losing legitimacy* abroad. If regular forces repress a population too severely, this may be expected to erode international support for the government, particularly from human rights valuing democracies (Nielsen 2013). In response, the international community might exert diplomatic pressure, cut aid, impose sanctions, or intervene militarily. Alternatively, governments may delegate repression. Delegating part of the provision of security to these groups may allow governments to shift some responsibility for controversial uses of violence. Governments blame the problems of delegation for the violence and thus remove themselves from any international consequences. Governments argue that they do not fully control these groups. While still connected to the regime, training and command distinctions between these semi-official and regular forces may lower expectations about performance standards and deflect media attention from regular forces. Incomplete control has the advantage of reducing the responsibility of political and military leaders for some controversial or ‘adventurous’ (see Avant 2005 for a related discussion of private security companies) application of force when accountability costs loom large.

In Kashmir, in recruiting former insurgents, the Indian army and Border Security Force “were seeking to reduce their own casualties and the costs of deployment and looked to outsource difficult coordinates in the security grid and escape the glare of media attention” (Habibullah 2004:7). Escaping media attention fits the expectation that governments seek to avoid blame. As Fiorina argued in the context of domestic American politics, “By charging an agency with implementation...legislators not only save themselves the time and trouble of making specific decisions, they also avoid or at least disguise their responsibility for the consequences of the decisions” (1985:187). In the security sector, paramilitaries offer governments some opportunity to shift responsibility for violence outside the normal chain of command. Carey, Colaresi, and Mitchell (2015) find that avoiding accountability influences the use of informal militias, which have a far less visible and looser connection to the government than the semi-official militias. But even violence committed by semi-official groups implicates the regime less directly than violence committed by regular forces that fall within a clear chain of command.

With the Kikuyu Guard, used during the militarily successful British counterinsurgency campaign in Kenya, research suggests “lack of control was no accident ... the Provincial Administration used the Home Guard to sate a widely held European desire for revenge for Mau Mau atrocities ... with the encouragement of local colonial officials, the infliction of violence during interrogations, known as screening, became an everyday function of the Home Guard’s members” (Branch 2009, 81). Questioned about the use of vigilantes, the government did not take responsibility: “Officials at all levels, from the Prime Minister down to the lowly district officer, had these abuses brought to their attention. No one in authority could claim they didn’t know. Their reaction ... was to deflect and deny, disparaging the accusers or making light of the accusation. Most abuses were blamed on the actions of ‘misguided individuals’” (Anderson 2005:309). The “misguided individuals” put some distance between political and military leaders and the violence.

Treating the incentive to shift responsibility as a risk factor, we should find semi-official militias also where leaders are at higher risk of being punished by the international community. If leaders fear retribution by the international community for using violence, they have an incentive to use forces that are not part of the regular chain of command, despite the increased control problems. Retribution takes a variety of forms from reputational damage to military intervention. Countries that depend on foreign aid from democracies are more likely to expect to experience punishment for government violence, as democracies are likely to attach more importance to human rights criteria than autocracies. In contrast, autocracies will likely not cut aid if the recipient government’s regular forces carry out domestic repression. Therefore, countries that depend on aid from democracies are more likely to value the limited accountability these groups offer. For example, in November 1991 the U.S. froze \$24.9 million in military aid and \$60 million in economic assistance, primarily due to the unreliability of the Peruvian forces in fighting the drug trade (Krauss 1991). Congress required Peru to improve its human rights performance to receive the aid. In the same month, President Fujimori legally recognized and armed the *rondas campesinas*, rural militias, to help the military in their fight against the Shining Path. They supplied important counterinsurgency information and an effective fighting force at low cost (e.g., Fumerton 2001) – while being unaffected by the inspections of military barracks and detention centers, which were demanded by the U.S. (Human Rights Watch 1992). Public admission of an intention to shift blame is unlikely. Yet the timing supports such an aim and underlines the importance of investigating the use of such forces more systematically. For example, governments in India, the Philippines, or recently in Nigeria rely on local village

defense committees in their counterinsurgency campaigns and those governments are likely sensitive to international costs. This leads us to our final hypothesis:

Hypothesis 3: *A greater incentive to avoid international accountability for potential repression raises the probability of observing a semi-official militia in that country.*

Data and Measures

To test our three hypotheses and to understand why and when parallel forces are part of the security organization of a state, we need measures of the presence of such groups, as well as for coup risk, civil war risk, and the risk of being held accountable by the international community. The Pro-Government Militias Database (PGMD) (Carey, Mitchell, and Lowe 2013) identifies 114 semi-official pro-government militias (PGMs) between 1981 and 2007. Our binary dependent variable measures the presence of a semi-official militia in a country in a particular year as identified in the PGMD. We use the data until 2005 as lagged reporting on the groups may influence their observation.⁴

We operationalize coup risk with Belkin and Schofer's (2003) "structural" measure that combines the strength of civil society, legitimacy, and past coups. They measure civil society with international non-governmental organization memberships and legitimacy with political competition and regulation.⁵ The past coup measure indicates a successful coup took place in the previous decade. Belkin and Schofer (2003) note that the legitimacy component of the measure, which captures competitiveness and participation, is distinct from regime type.⁶ We reverse the signs for civil society and legitimacy before taking the sum so that higher values represent greater coup risk. This indicator is available only from 1981 to 2000. Because our research

⁴ As a robustness check of our results, we show the results of the presence of informal militias, also taken from the PGMD, in the supplementary file. The key difference between semi-official and informal militias is "that the link to informal PGMs is not officially or formally acknowledged" (Mitchell and Carey 2013:11) as in the case of death squads, for example.

⁵ More information on the specific coding of the indicator can be found in Belkin and Schofer (2003).

⁶ We note that the slow-changing nature of these variables, what Belkin and Schofer (2003) refer to as structural factors, helps to reduce the probability that it is the creation of pro-government militias that are creating the coup risk. We will return to this point below in the context of our discussion of civil war risks.

design calls for out-of-sample validation (see below), we also utilize Powell and Thyne's (2011) measure of recent coups. This dataset measures coups around the world beyond 2005, the end of our sample period. We code past coups (see Belkin and Schofer 2003) as a one if there was a coup in the previous decade and zero otherwise.⁷

Following Belkin and Schofer (2003), we create an index of civil war risk analogous to the index of structural coup risk. Belkin and Schofer developed a single-dimensional representation of a regime challenge. It does not depend on immediate triggers but measures the structural propensity towards an event, in their case coups. To create a similar measure for civil war risk, we build on the work of Fearon and Laitin (2003) and use seven measures as components of our civil war risk index: mixed regimes, development, population, non-contiguous territory, ethnic fractionalization, mountainous territory, and recent civil war (see Table 1, column 2). Mixed regimes fall between -7 and +7 on the Polity scale (Marshall, Gurr, and Jaggers 2014). The log of real GDP per capita from the Penn World Tables measures GDP; population is logged and coded using the Correlates of War data, version 4.0 (1988). We code non-contiguous territory when a portion of the land of a state is separated by the land of another sovereign state and is not an island. We take ethnic fractionalization scores and the log of the percentage of countries' proportion of mountainous terrain from Fearon and Laitin (2003). We identify recent civil wars if a civil war occurred in the previous decade. These indicators are demeaned, scaled, and summed, with development reversed since poorer states should be at greater risk of a civil conflict.⁸

Finally, we create an accountability avoidance index to capture the governments' incentives to avoid international accountability. The AID 2.0 database provides measures of aid transactions. We code the purchasing-price parity adjusted value of aid sent from democracies (at least 7 on the Polity2 scale), to any recipient, regardless of their domestic political institutions. We compute Democratic Aid Dependency as the natural log of the sum total of aid received from

⁷ Since Powell and Thyne (2011) data begin more than a decade previous to our study window, this coding does not suffer from left-truncation of coups in a country.

⁸ Below we also explore a modified civil war index that does not include the indicator of a previous civil conflict. We do this to analyze whether our findings might be driven by the correlation between previous civil conflict and semi-official militias as opposed to the underlying structural risk, as hypothesized. Our findings remain consistent with this alternative indicator.

democracies as a proportion of the recipient’s GDP.⁹ We also measure Autocratic Aid Dependency as aid coming from states with a maximum of -7 on the Polity2 scale. We believe aid from autocracies – regimes that are unlikely to punish repression - should decrease the need to avoid accountability for violence by using militias. Therefore, the autocratic measure is reversed. The measures are centered at their mean and scaled by their standard deviation, and finally summed to create the accountability index.

TABLE 1. Risk indices and components

<i>Coup Risk Index</i>	<i>Civil War Risk Index</i>	<i>Accountability Avoidance Index</i>
Civil Society (-)	Mixed Regime	Aid from Democracies
Legitimacy (-)	Development (-)	Aid from Autocracies (-)
Recent Coup	Population	
	Non-contiguous Terrain	
	Ethnic Fractionalization	
	Mountainous Terrain	
	Recent Civil War	

Note. Negative sign indicates that we reversed the sign.

To simplify comparison across regime risks, we follow the design of Belkin and Schofer (2003) and create aggregated structural indices of the risks and incentives of interest. Yet we recognize potential problems with this approach. While we gain a single indicator, we assume that the weights (coefficients) attached to each measure within the indicator are equal. We can relax this assumption by including the underlying indicators as covariates in a model predicting the presence of semi-official militias. This allows the weights to vary across indicators.¹⁰

⁹ When log-transforming the vector of aid scores we add one-half of the smallest, non-zero value, since they included zeros.

¹⁰ This simply means that we allow different coefficients for each indicator as opposed to index.

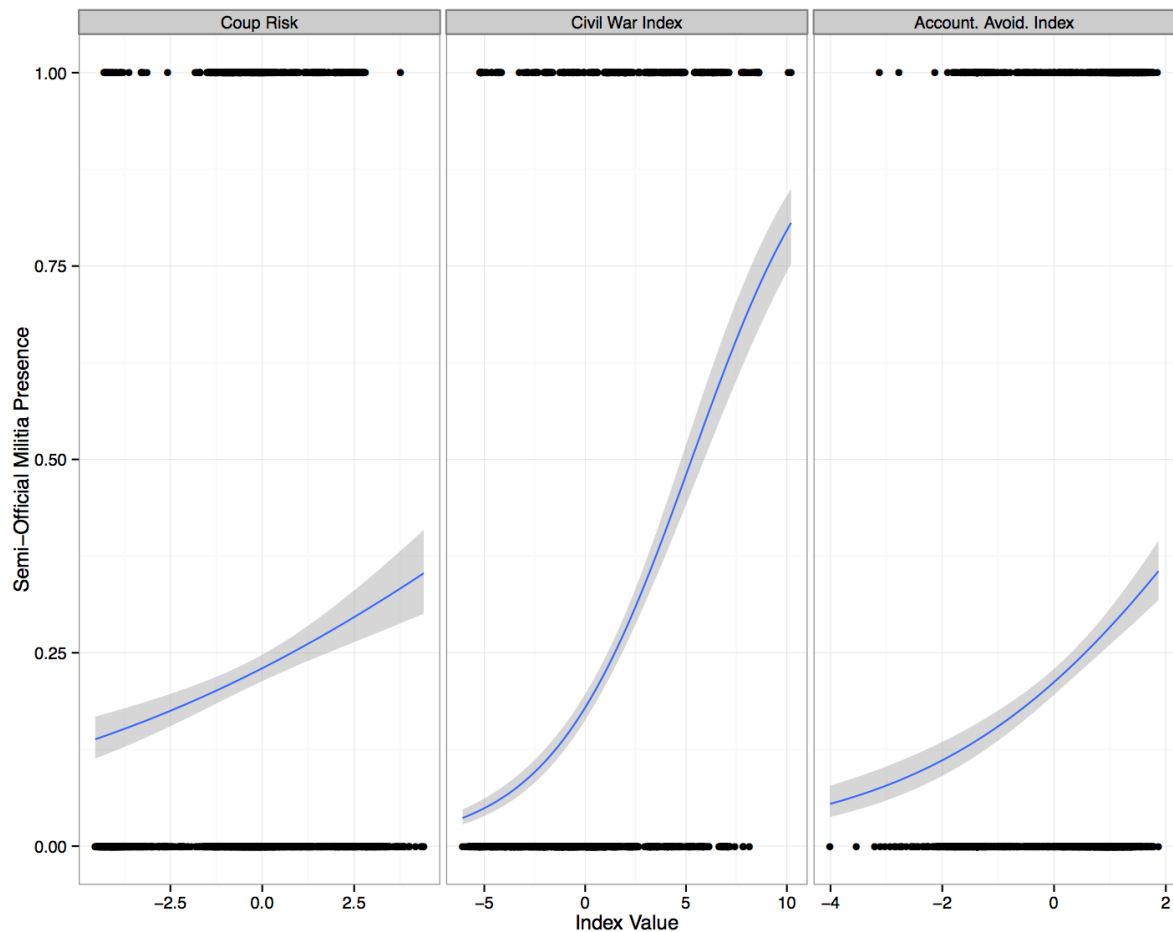
We are interested in the extent to which understanding the risk of a coup, of civil war, and of international penalties for repression solves our original puzzle - why and where leaders maintain parallel forces in their security organization. Therefore, we model the underlying propensity for a state to have a semi-official militia in a given year. Our first set of models is generalized linear models (GLMs) utilizing a logistic link function. We use GLM because an ordinary logit model does not allow for non-normally distributed error terms. We estimate our models with the `glm` function in R. We begin by using the coup risk indicator as predictor, and then add our indicators for civil war risk and accountability avoidance. Table 2 presents the results. We then include splines of the time since the last observation of semi-official militias in a country as predictors within a generalized additive model (GAM) framework. This follows the suggestion of Beck, Katz, and Tucker (1998) to account for the deterministic trend in the underlying probability of an event in a discrete time context. We use thin-plate splines that are chosen through un-biased risk estimation criterion using the `mgcv` package in R. This is akin to minimizing the Akaike Information Criterion (AIC) to choose the level of smoothness. AIC measures the likelihood of the model, but penalizes models for their complexity. Thus models that have an improved fit “worth” their complexity will have low AIC scores. We also estimate a disaggregated model that includes the underlying indicators of our indices (see Table 3).

To measure and compare the usefulness of each model we rely on both in-sample and out-of-sample validation. We are less interested in significant p-values than in the predictive performance of the model (Ward, Greenhill, and Bakke 2010). Therefore, we report the in-sample AIC for each model as well as the in-sample Area Under the Receiver-Operator curve (AUC). The AUC measures a model’s predictions of both 1’s and 0’s, where larger values indicate improved predictions. We also utilize separation plots, suggested by Greenhill, Ward, and Sacks (2011), to visually compare how the predictions match the in-sample observations.

In-sample statistics are only part of the story. A useful model of semi-official militias should also explain out-of-sample patterns. Therefore, we set aside observations from 2001 to 2005 as our out-of-sample test data. We then calculate the out-of-sample AUC scores for the models, as well as Brier scores, and separation plots for the out-of-sample prediction. Because the Belkin and Schofer (2003) coup risk indicator is only available until 2000, we use the Powell and Thyne (2011) recent coup measure in the out-of-sample exercises. Our goal in exploring the puzzle of parallel armed forces is to provide potentially policy-relevant forecasts of the presence of semi-official militias.

Empirical Results

As a first look at the relationship between coup risk and militia presence, we plot the observations for 1981 to 2000 by the coup risk index in the first panel of Figure 2. The relationship shows a generally positive slope, as highlighted by a line-plot of fitted predicted probabilities (line with associated standard errors in gray) from a logit model of semi-official militia presence with coup risk as the only predictor. However, many militia observations occur at low values of coup risk (dots at upper left corner), as well as many observations without militias at a higher coup risk (blank spaces in upper right corner), suggesting other incentives at work.



Note: The figure shows predicted probabilities from separate logit regression models for each index, with each index being the only independent variable.

FIG 2. Plot of militia presence by coup risk, civil war risk, and accountability avoidance incentives.

The first model in Table 2 (Model 2.1) presents the logit coefficients and fit statistics using the Belkin and Schofer (2003) indicator, plotted in the first panel of Figure 2. Model 2.2 uses the Powell and Thyne (2011) recent coup measure. Both have positive coefficients larger than their estimated standard errors. Model 2.1 estimates that increasing coup risk from the first quartile (-1.3) to the third quartile (.87) increases the probability of observing a militia from .20 (95% CI of .18, .22) to .25 (95% CI of .23, .27). The 95% confidence interval for the change is (.04, .07). Similarly, Model 2.2 implies that a recent coup increases the probability of a militia being present from .21 (95% CI of .19, .23) to .28 (95% CI of .24, .33) compared to a country without a coup in the previous decade. The 95% confidence interval for this change is (.03, .12). These results provide initial support for Hypothesis 1. They also fit with the existing coup research findings using a measure of organizational structure that was previously untested.¹¹

TABLE 2. Logit Model of Semi-official Militia Presence

<i>Variables</i>	<i>Model 2.1</i>		<i>Model 2.2</i>		<i>Model 2.3</i>		<i>Model 2.4</i>	
	<i>Coef.</i>	<i>(SE)</i>	<i>Coef.</i>	<i>(SE)</i>	<i>Coef.</i>	<i>(SE)</i>	<i>Coef.</i>	<i>(SE)</i>
Intercept	-1.21	(0.05)	-1.33	(0.05)	-1.53	(0.06)	-1.56	(0.06)
Coup Risk (B+S)	0.13	(0.02)			-0.01	(0.02)		
Recent Coup			0.40	(0.12)			0.18	(0.13)
Civil War Risk					0.27	(0.02)	0.27	(0.02)
Account. Avoidance					0.15	(0.05)	0.14	(0.05)
AIC	2565.7		2588.3		2258.2		2256.6	
In-sample AUC	0.55		0.53		0.74		0.75	
Out-of-Sample AUC			0.50				0.73	
Out-of-Sample Brier Score			0.16				0.13	
N	2456		2456		2456		2456	

Note: Out-of-sample predictions are done with 684 observations from 2001-2005. Lower AIC and Brier score are preferred. Higher AUC is preferred. Logit coefficients are estimated with glm in R.

¹¹ We also explored whether there was a structural break in the data after the Cold War. We found no evidence of this for Models 2.1 and 2.2 in Table 2. We explore this further in the supplementary file.

However, the in-sample area under the receiver-operator-curve (AUC) values in Table 2 suggests that there is room for improvement. Figure 3 supports this suggestion with the associated separation plots for several of these and other models. A separation plot orders the observations by their predicted probabilities from low to high (left to right), and then draws a vertical white line if semi-official militias were not observed in the data and a colored vertical line if semi-official militias were present in the data. A perfectly predictive model would have solid black on the right, and white on the left. Black lines on the left mean that parallel armed forces existed although the model forecasted this to be unlikely. White spaces on the right indicate that such forces did not exist despite having been forecasted by the model. The first row in Figure 3 illustrates that many observations of semi-official militias remain misclassified by a simple model looking only at coup risk as a predictor (Model 2.1). As we will see, the in-sample and out-of-sample separation plots for the simple coup risk model are rather poor in comparison to alternatives.

While coup risk may partly explain the presence of militias around the globe, our results encourage a search for complementary explanations. Thus, we turn to an analysis of civil war risk and accountability avoidance as additional rationales for the use of militias. The second and third plots in Figure 2 provide preliminary evidence that civil war risk and accountability avoidance might help us explain militia presence. These plots show the observed presence or absence of militias, sorted by each index. The predicted probabilities from a logit model using the respective index to predict semi-official militia presence are plotted in black (with the 95% confidence interval in gray), as in the coup risk plot. Both indicators show some ability to separate the observations on their own, although weakly. The fitted predicted probabilities indicate an increasing propensity towards militias as the risk of civil war and incentives to avoid accountability increase, respectively.

Models 2.3 and 2.4 (the Combined Risk models) support the usefulness of these indices. Including these risk indicators lowers the AIC relative to both models of coup risk alone, as well as raising the in-sample AUC. Together with the positive coefficients for these indicators, these results support Hypotheses 2 and 3. Moreover, the combined models improve the out-of-sample fit compared to the Powell and Thyne (2011) recent coup indicator. The out-of-sample AUC rises from .5 to .73, and the Brier score, a measure of out-of-sample fit, is lower, indicating more useful predictions on this scale. While coup risk is no longer statistically significant in these models, we should not read too much into this finding since this coefficient only measures the

partial effect of coup risk, holding the other indicators constant.¹² The separation plots in Figure 3 also illustrate the improved in-sample and out-of-sample fits for the combined models. The combined models have more white space to the left and black to the right.

Table 3 introduces the penalized thin plate splines for the time since the previous observation of a semi-official militia. These sets of models are Generalized Additive Models, which do not *a priori* assume a functional form for the deterministic trend in the underlying propensity for a militia. Including timing could be very useful for forecasting. If such paramilitary forces are very likely to continue if observed recently, and if they become increasingly unlikely the longer they are unobserved, then this information should help us to forecast their presence.

Including information on the timing of previous militia observations also provides a baseline against which to test the usefulness of the combined indicators. We see from Models 3.1 through 3.3 that including the deterministic trend improves the in-sample and out-of-sample fit, with higher AUC and lower AIC values in-sample, and Brier scores out-of-sample. The entry for the splines presents the Chi-square test for the joint significance of the thin plate splines. However, this does not imply that the indicators themselves are not useful. The third column in Table 3 provides the fit statistics for a model that excludes the indicators. Including information on civil war risk, accountability avoidance, and coup risk is useful on each criterion, excepting the Brier score, which is already low. Comparing the first row of separation plots in Figure 3 to the second to last row illustrates the dramatic improvement in predicting militia presence when we add timing as well as tracking civil war risk and accountability avoidance indices.¹³

We plot predicted probabilities for distinct scenarios from the second model in Table 3 to summarize the relationship between civil war risk, accountability avoidance, and militia presence over time. Figure 4 presents the predicted probability and 95% confidence intervals of observing a semi-official militia over time for a state at the 10th percentile of civil war risk (solid) and the 90th percentile (dotted). The other covariates are held at their mean and past coup at zero. The timing splines quickly push the predicted probabilities downwards, while a higher risk of civil

¹² For reference, the correlation between coup risk and each of the other indices is .32 and .36 for civil war risk and accountability avoidance respectively. The correlation between civil war risk and accountability avoidance is .34.

¹³ We also estimated Model 3.3 using lagged values of each index. We found the same substantive results, shown in Table A7 in the supplementary file.

war increases the probability of seeing a paramilitary group. Figure 5 presents the first difference of the high and low civil war risk scenarios from Figure 4. This tests whether the scenarios of high and low civil war risks are different at each time point.¹⁴ The results show that we are more likely to observe semi-official armed groups when civil war is more likely. For a state with average risk of coup and average incentives to avoid accountability and without such a group for one year, the expected probability of a semi-official militia increases by approximately 15 per cent when the risk of civil war increases from the 10th to the 90th percentile.

TABLE 3. Generalized Additive Model of Semi-Official Militia Presence with Time Since Last Militia Observation Included

	<i>Model 3.1</i>		<i>Model 3.2</i>		<i>Model 3.3</i>	
	<i>Coef.</i>	<i>(SE)</i>	<i>Coef.</i>	<i>(SE)</i>	<i>Coef.</i>	<i>(SE)</i>
Intercept	-3.16	(0.17)	-3.11	(0.18)		
Coup Risk (B+S)	-0.10	(0.06)				
Recent Coup			-0.14	(0.25)		
Civil War Risk	0.25	(0.03)	0.25	(0.03)		
Account. Avoidance	0.37	(0.09)	0.34	(0.09)		
Time since last PGM observation	561.3	(8.4)	558.3	(8.3)	644.6	(8.4)
AIC	761.1		764.1		867.0	
In-sample AUC	0.97		0.96		0.94	
Out-of-Sample AUC			0.98		0.97	
Out-of-Sample Brier Score			0.02		0.02	
N	2456		2456		2456	

Note. Out-of-sample prediction done with 684 observations from 2001 – 2005. Lower AIC and Brier score are preferred. Higher AUC is preferred. Generalized Additive models using logit link function estimated with *mgcv* in R. Chi-squared test and degrees of freedom (in parentheses) are reported for the splines measuring the nonlinear effect of the time since the previous PGM observation.

¹⁴ Figure 4 cannot provide this information because the calculation of confidence intervals and the levels does not account for the covariance between the predictions.

Note. Out-of-sample prediction done with 684 observations from 2001 – 2005. Lower AIC and Brier score are preferred. Higher AUC is preferred. Generalized Additive models using logit link function estimated with mgcv in R. Chi-squared test and degrees of freedom (in parentheses) are reported for the splines measuring the nonlinear effect of the time since the previous PGM observation.

FIG 3. In-Sample and Out-of-Sample Separation Plots

Figures 6 and 7 plot the analogous information for changes in the accountability avoidance index while holding civil war risk constant at the mean. We observe a similar pattern. While the 95% confidence intervals overlap in Figure 6, Figure 7 makes clear that when accounting for the covariance between the predicted probabilities, we see systematic differences. When states receive a larger share of their aid from democracies, they are more likely to have semi-official militias. For a state that has not had a militia for one year, no coup during the preceding ten years, and an average risk of civil war, increasing the accountability avoidance incentives from the 10th to the 90th percentile increases the expected probability of a militia by approximately 8 per cent.¹⁵

While these results are supportive, they utilize aggregate indices. The measures within each index may have distinct effects on the probability that the security apparatus of a state includes a militia. Thus, we investigate the performance of the individual measures that make up the civil war and accountability avoidance indices. Table 4 presents these results.¹⁶ We observe some empirical payoff for relaxing the assumption of equal weights in both indicators. While the in-sample AIC drops rather dramatically when we use the disaggregated indicators, the out-of-sample AUC improves only by a small amount. Therefore, one might want to trade the reduction

¹⁵ One might argue that paramilitaries make civil war more likely in the first place. In our research design we attempt to mitigate this alternative through several strategies. First, we rely on pre-existing literature to carefully select indicators to measure civil war risk that reflected structural factors, which by definition change quite slowly and not in response to events such as organizing a pro-government paramilitary group. Second, we analyze the organizational structure of the security forces not their explicit actions. While explicit attacks might make civil war more likely, simply having militias in the security forces is not as closely related to the measurement of civil war. Third, the counter-argument of militias leading to civil wars leads to a logical paradox. If paramilitary formation led to a structural increase in civil war, this would be a significant incentive for a leader not to create a militia in the first place. Thus, the fact we see pro-government militias in approximately a quarter of all states around the globe would be a puzzle from this perspective. We suggest that militias can be useful for leaders across several dimensions, including coup-proofing, rebellion, and avoiding international accountability. Moreover, to indicate that our results are not a product of militias causing civil wars, we have also dropped the previous civil war indicator from our civil war risk measure. If it were the case that these semi-official militias led to civil wars directly, this portion of our indicator would be most susceptible to bias, as it directly measures the event of civil war as opposed to an underlying structural factor. These results, shown in the supplementary file, remain consistent.

¹⁶ We include only the Powell and Thyne (2011) recent coup indicator since we are interested in the out-of-sample fits.

in fit of the combined risk indicator model for its simplicity. As the progression of the out-of-sample AUC and separation plots illustrate, including the timing of previous militia observations as well as coup risk, civil war risk, and accountability avoidance can accurately forecast the presence of militias around the globe. Our best forecasting model (4.1) correctly predicts 91 per cent of years with militias out of sample (117/128). The baseline model (Model 2.2) correctly predicts only 8 per cent of observations with militias (10/128).¹⁷

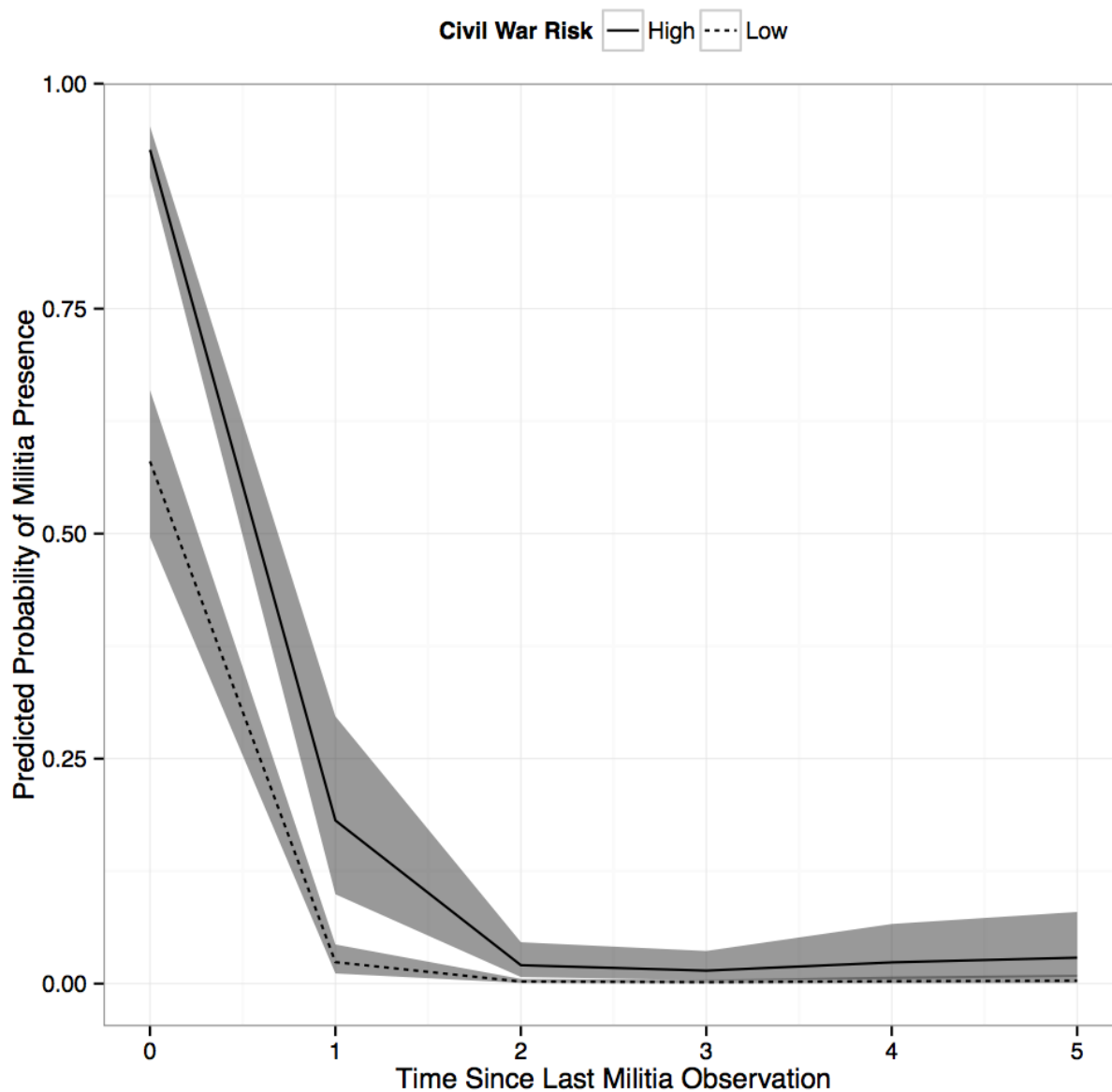
Although most indicators point in the expected direction, two interesting anomalies could help inform future work on paramilitary groups. First, it appears that development may have the opposite sign than hypothesized when included in the civil war index. In Table 4, more developed countries are estimated to be more likely to have pro-government militias.¹⁸ Future research might probe the question whether very poor states might find collaborating with informal militias more cost-effective than creating semi-official militias.¹⁹ Second, the results showed that mountainous terrain decreased, rather than increased the probability of a semi-official militia. As with development, this might be an avenue to pursue for future research to bring our theoretical understanding of the incentives for militias in line with the observed patterns of pro-government militias around the globe.²⁰

¹⁷ We utilized .5 as a cut-off to create predictions from the disaggregated indicator model (4.1) and .21 for the baseline coup-risk model (2.2). Using a cut-off of .5 for the baseline coup-risk model results in zero correct predictions of the presence of semi-official militias. Both models predict the absence of militias equally well at the cut-offs of .5 and .21 respectively (551/556). These results are computed for the out-of-sample predictions.

¹⁸ The coefficient on development is highly variable across different specifications. For example, when entered into a model alone, the coefficient is positive and statistically significant. In addition, there is some evidence of non-linearity for development in-sample, but including penalized thin plate splines reduced the out-of-sample fit of the model as compared to the simpler specification in Table 4.

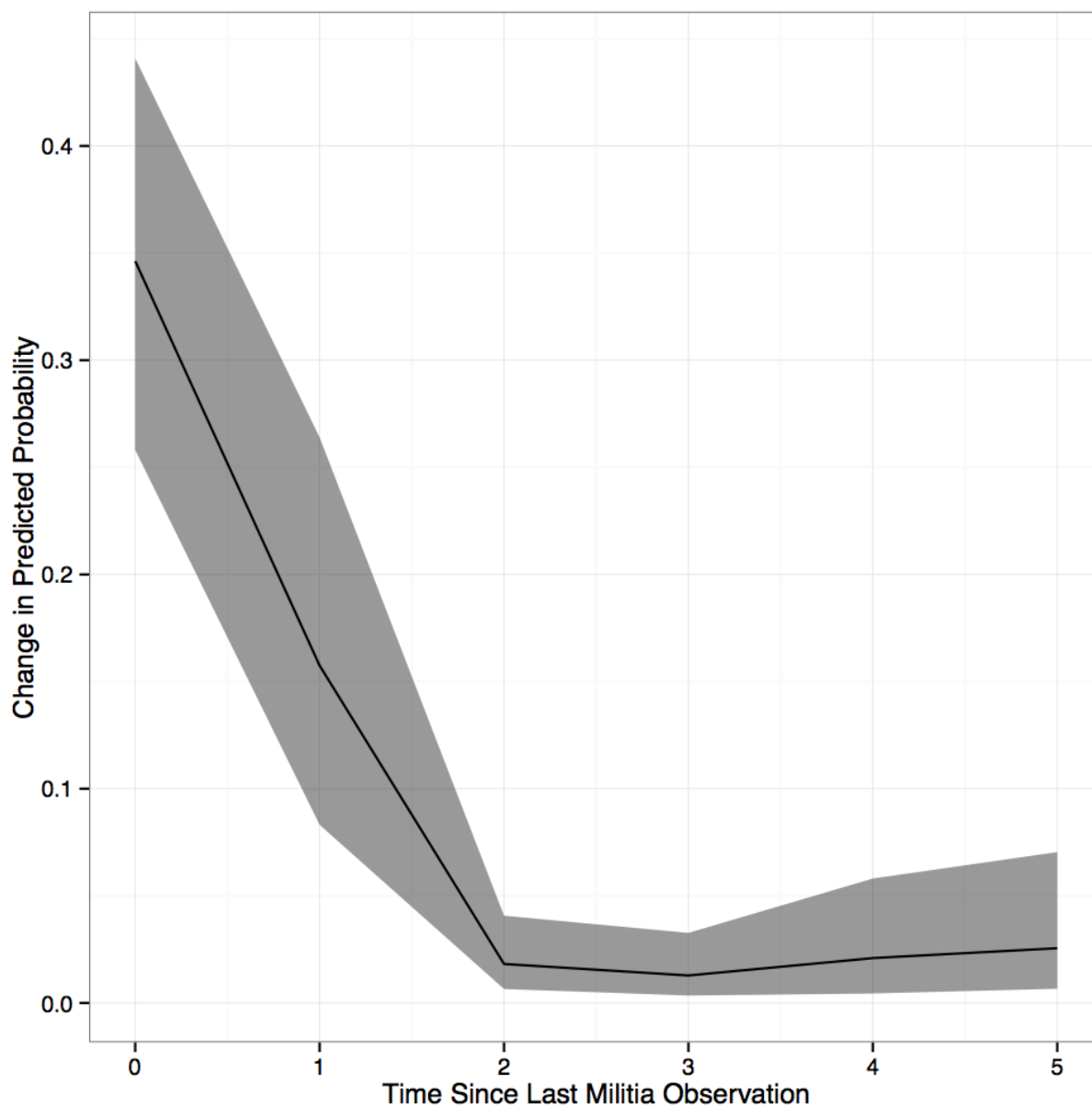
¹⁹ Carey, Colaresi, and Mitchell (forthcoming) provide some evidence for the argument that informal militias are more likely to be found in poorer countries.

²⁰ We also explored using thin plate splines for the coup, civil war, and accountability indices, but found no out-of-sample improvement in forecast performance from this complication on Brier scores or AIC. In addition, we analyzed whether tracking both semi-official and informal militias would yield similar inferences. These results are presented in the supplementary document and reaffirm the conclusion presented above.



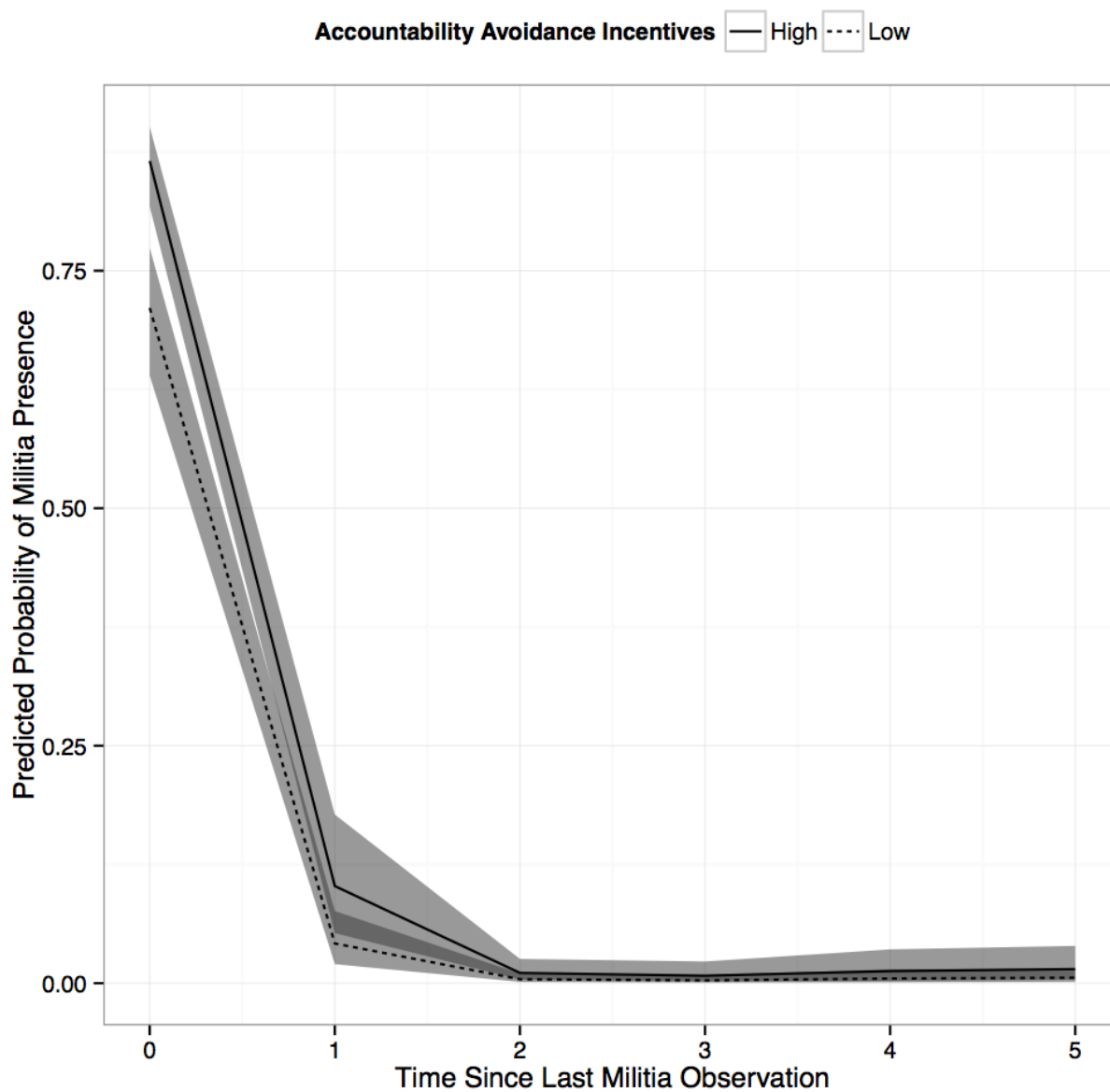
Note. The lines show the estimated predicted probabilities of semi-official militia presence, and the shaded area the 95% confidence intervals, over time (in years), for low (10th percentile) and high (90th percentile) civil war risk. Estimates are from the combined model with timing, utilizing the recent coup measure.

FIG 4. Predicted Probabilities of Semi-official Militia Presence



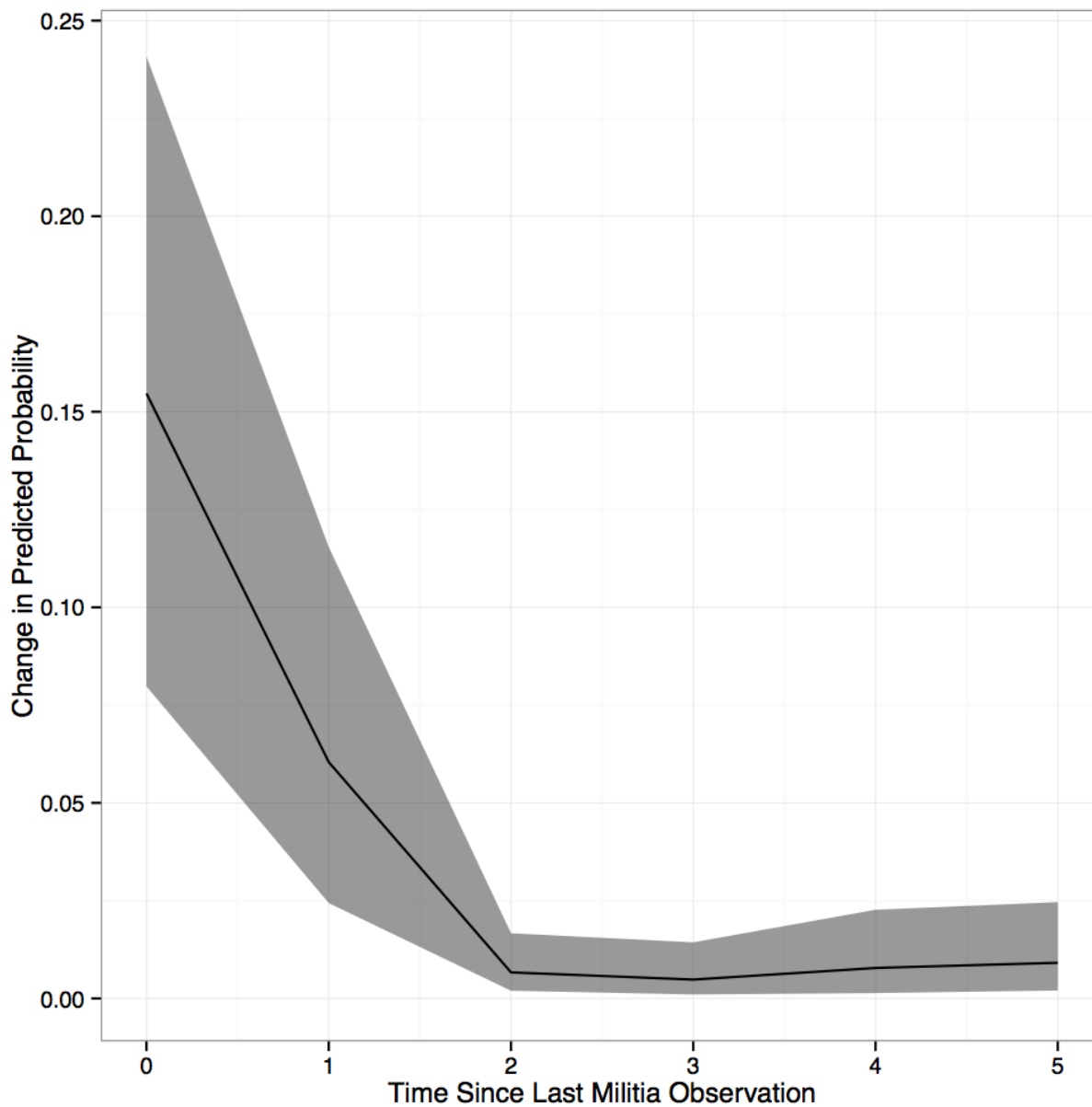
Note. These estimates incorporate the covariance between the predictions across the two scenarios at each time point.

FIG 5. Change in predicted probability, going from low to high civil war risk, over time



Note. The estimates are from the combined model with timing, utilizing the recent coup measure.

FIG 6. Predicted Probabilities of Semi-official Militia Presence for Low (10th Percentile) and High (90th Percentile) Incentives to avoid Accountability



Note. These estimates incorporate the covariance between the predictions across the two scenarios at each time point.

FIG 7. Change in predicted probability, going from low to high incentives to avoid accountability, over time

TABLE 4. Generalized Additive Model of Semi-Official Militia Presence with Disaggregated Measures

<i>Concept</i>	<i>Variable</i>	<i>Model 4.1</i>	
		<i>Coef.</i>	<i>(SE)</i>
Constant	Intercept	-18.30	(1.80)
Coup	Recent Coup	0.22	(0.30)
Civil War	Mixed Regime	0.38	(0.24)
	Development	0.81	(0.17)
	Population	0.78	(0.10)
	Non-contiguous Terr.	-0.28	(0.23)
	Ethnic Frac.	0.51	(0.44)
	Mount. Terrain	-0.21	(0.09)
	Recent Civil War	2.02	(0.33)
Accountability Avoidance	Aid from Democracies	0.23	(0.04)
	Aid from Autocracies	-0.12	(0.04)
Timing	Time since last PGM observation	444.0 (8.1)	
	AIC	656.9	
	In-sample AUC	0.98	
	Out-of-Sample AUC	0.99	
	Out-of-Sample Brier Score	0.02	
	N	2456	

Note: Out-of-sample prediction done with 684 observations from 2001-2005. Lower AIC and Brier score are preferred. Higher AUC is preferred. Generalized Additive models using logit link function estimated with *mgcv* in R. Chi-squared test and degrees of freedom (in parentheses) are reported for the splines measuring the nonlinear effect of the time since the previous PGM observation. Concept column refers to the indicators from the previous models.

Conclusions

The organization of security influences political stability and civilian welfare. It raises a complex array of likely costs and benefits with important policy implications for regimes, civilians, and the international community. For civilians, a key concern is whether semi-official forces conduct themselves in worse ways than national militaries (e.g., Cohen and Nordås 2015). Other scholars note the high level of violence directed at civilians in contemporary conflicts and claim an era of new wars “characterized by a multiplicity of types of fighting units, both public and private, state and non-state, or some kind of mixture” (Kaldor 2006:97). For governments, outsourcing security may undermine the national military or create a temptation to adopt more

‘adventurous’ policies (Avant 2005:259). For the international community, outsourcing complicates the conventional view of states that monopolize the means of violence and assert sovereignty, and further ‘disaggregates’ the state (Grant and Keohane 2005; Slaughter 2004:266). Given the implications for regime and civilian welfare, and also for global governance, understanding why governments choose to outsource the means of violence is critical. Despite potential problems of discipline, betrayal, monitoring, and the lack of hierarchical control structures, the militarization of civilians in almost a third of the countries around the world suggests that governments view the benefits as outweighing the potential costs.

This study contributes to our understanding of why governments might make this calculation. It fits with an emerging and actor-centered research agenda that is moving away from an assumed monopoly of violence and more broadly from a unitary actor approach to conflict (e.g., Ahram 2011; Clayton and Thomson 2014; Jentzsch, Kalyvas and Schubiger 2015; Peic 2014; Staniland 2012). Research on rebel forces follows a similar path. Recent research refers to the fragmentation of rebellion, differences in number, power, and institutionalization of rebel forces, the propensity for infighting and the consequences for civilians (e.g., Bakke, Cunningham and Seymour 2012).

Within this research agenda we suggest that the logic of delegation provides a common theoretical framework. It brings together, for example, the coup-risk literature with an actor-centered approach to security policy. The principal-agent problems lies at the heart of the coup-risk literature. It expects some leaders to distrust their agents in the formal security forces and to develop parallel forces to offset the risk of a coup in response. The presence of parallel agents gives the principal substitutes in the “market for force.” The principal can use these agents to threaten sanctions against members of regular forces and thus to dissuade them from engaging in acts of disloyalty.

We argue that leaders face a range of other threats beyond those posed by regular forces,. Delegation to armed non-state actors might address several of these. The sheer frequency of these groups suggests that leaders have multiple incentives for such delegation. In fact the policy literature on collaboration suggests some of these incentives. Irregular forces compensate for various shortcomings in regular forces. They promise reduced deployment costs, additional information sources, operational flexibility, and the means to shift some responsibility for the controversial application of force. Placing these incentives within the logic of delegation

simplifies our understanding of the varied mix of state and non-state actors we find at work in security. This simplification proves more satisfactory than assuming a centralizing trend in the organization of military force under state control; it makes sense of developments not captured by those who see a necessary evolution towards a state monopoly over violence. Finally, the logic of delegation has increasingly wide application in the study of international relations. It locates analysis of the security domain within a theoretical approach that works across policy domains and helps us understand the trade-offs and “probity hazard” of such delegation.

To provide evidence for the empirical argument, we began with simple models to investigate the key ideas. We presented a combined model to show the various benefits leaders seek from these armed groups. The models provide general support for our theoretical argument. The variables capturing coup risk and major regime risk performed as we expected them to. Given recent coups and rebellions, and related structural conditions, governments have an incentive to use semi-official militias. We expected the strongest incentives to avoid accountability to appear in the shadow of domestic and international mechanisms of accountability. The incentive to shift responsibility for violence is likely to be more obvious when looking at groups that have only loose—or even clandestine associations—with governments. Nevertheless we found some support for this logic even in cases of more modest distancing in the form of semi-official militias. Our analysis suggests that governments perceive parallel forces as a solution to multiple problems. We can predict the presence of semi-official militias most accurately when we combine the risks of coups, civil war, and accountability. While in these best performing combined models we cannot clearly identify which threat contributes the most to the prediction, Figure 2 showed that each risk factor contributes to our understanding of why governments include parallel forces in their organization of security.

From a policy perspective, it will often prove complicated to assess the drivers of specific irregular forces. These groups might protect a leader against her disloyal troops. They may make conflict less expensive for governments and reduce the casualties suffered by regular forces. And at least in the short term, they may lead leaders to perceive the use of violence as less politically costly. Yet frequently they bring with them unintended consequences for their civilian members. In Kashmir in April 2009 a bus was blown up “because some village defence committee members were travelling on it ... The committee is an armed militia set up by the state government to help in counterinsurgency operations” (New Zealand Herald 22 April, 2009).

These militias put members in danger in Iraq as well as India.²¹ They also endanger other civilians. Members of Salwa Judum, another semi-official militia in Chattisgahr state, are alleged to have engaged in extortion, rape and murder. The *Economist* (2006 August 19) urged the government to take control, advising that, “Salwa Judum is the wrong way to go about it. A larger, better-trained police force would help.” In the colonial period, these forces brought immediate battlefield gains for colonial powers in Algeria and Kenya. Yet France abandoned the Harkis. They “were hunted out and subjected to every conceivable form of torment. ... killed ... castrated and cut up alive ...” with a fatalities in the tens of thousands (Evans 2012: 326, 337). The reputational damage and the legal ramifications of the Kenyan counter-insurgency remain to this day.

As in other sectors, good governance in the security sector begins with transparency. Grant and Keohane (2005) argue that global accountability requires information and clarity about applicable international standards. Recent research on naming and shaming suggests governments value reputation as well as aid and respond to pressure from international organizations (DeMeritt 2012). Aid decisions made contingent on a thorough assessment of the recipient’s security sector provides a further tool for the international community. Indeed, this analysis shows that governments that make past use of militias are likely to do so again. Identifying such behavior therefore provides a useful warning indicator to the international community when its members make decisions about how to engage with governments.

Despite the risks and costs attached to delegation in the security sector, governments choose paramilitary forces when they find themselves under particular threats from within and outside their borders. However, an important question remains: are such measures actually effective? Do these militias prolong survival and at least avoid a short-term loss of international support? How do you calculate the probity hazard involved in delegating such a sovereign task? From a different theoretical perspective, Ahram’s (2011) recent work encourages us to think about this question and the empirical implications. Is the risk limited to treasonous activity against the government when the government loses control of those it has armed, or does it consist more broadly in the harm done to the civilians and to the integrity of international accountability mechanisms? This study showed that in order to mitigate the risks they face,

²¹ See Clayton and Thomson (2014) for a discussion of civil defense force induced spike in civilian targeting in Iraq.

governments prove much more creative with the organization of their security sectors than conventional wisdom assumes.

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