How Government Reactions to Violence Worsen Social Welfare: Evidence from Peru[*]

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Abstract

Dissident violence inflicts substantial harm on government forces and on civilians who get caught in the crossfire. And yet the worst consequences of dissident violence may be indirect, manifesting themselves in far-reaching negative social welfare outcomes. Whereas direct battle-related deaths occur in the short-term, the possibility of longer-term, indirect effects necessitates understanding how governments respond to violence and how that response affects downstream social welfare outcomes. In this paper, we bring together newly collected subnational violence and government budgeting data for Peru to answer two questions. How does dissident violence shape government decisions to prioritize security over social welfare, a tradeoff often framed as an investment into "guns versus butter"? And, in turn, how do these government decisions affect local health outcomes? To address thorny endogeneity challenges, we consider fatal attacks that occur during the budget period (relative to outside the budget process) as an instrument for government health spending and observe the effects of such spending on subsequent health outcomes. We find that, following violent acts during the three months of the national budget debate and approval, the Peruvian government diverts spending out of health and other social service budget areas in localities affected by the attack(s). We then link changes in local health expenditure to declines in local health outcomes, namely an increased infant mortality rate and decreased health facility use. Our results thus causally identify the mechanism by which dissident violence translates into negative social welfare outcomes.

1 Introduction

From 1998 to 2007 an estimated 5.4 million people died from conflict-related causes in the Democratic Republic of the Congo. Most of these deaths were not directly combat-related, however. Instead, most died from conflict-induced exposure to malaria, diarrhea, pneumonia, and malnutrition, conditions that are both preventable and treatable (Coghlan, Ngoy, Mulumba, Hardy, Bemo, Stewart, Lewis & Brennan 2007). The sheer volume of death is tragic, but the massive failure to prevent and treat the indirect effects of violence is puzzling. In this paper, we focus on the efforts of the domestic government to protect its citizens in war-affected areas. How do governments respond to dissident violence, and how do government responses, in turn, affect indirect social welfare outcomes?

Most research addressing the effects of violence on civilians examines the direct consequences, including the conditions under which civilians are targeted during combat (see, for example, Azam & Hoeffler 2002, Kalyvas 2006). In the few cases where scholars consider non-combat related effects, they typically emphasize broad, cross-national correlations between violence and outcomes, such as income, health, and education (see, for example, Collier 1999, Ghobarah, Huth & Russett 2003*a*, Lai & Thyne 2007). Extant research thus draws attention to some potentially important implications of violence and yet prompts greater attention to (1) the theoretical mechanisms explaining how violence is connected to negative social welfare consequences, (2) sufficiently fine-grained data to test those mechanisms, and (3) a credible identification strategy to conclude that there is an independent effect of violence on social welfare outcomes.

In this paper, we begin with the observation that governments can and do respond to acts of dissident violence. History is replete with examples of government response:

the United States reacted to the 9/11 attacks by invading Afghanistan; the British government responded to the 7/7 attacks with an anti-terror bill that allowed for easier prosecution of terrorism; the Israeli government regularly responds to Palestinian violence with bombing of Gaza and the building of settlements in the West Bank; the Russian government responded to Chechen bombings and hostage taking with increased repression and shelling of Grozny; and the list could go on. In choosing such responses, governments often contend with sharp budget constraints, which mean they must prioritize some types of spending over others. We contend that the tradeoffs produced by budget constraints shape the indirect effects of violence over the intermediate and long-term. That is, violence does not simply translate into negative longer-term social welfare outcomes: government choices on how to respond mediate the effects of violence.

A government that responds to the shock of dissident violence faces classic "guns versus butter" decisions. If hard budget constraints exist, then a government that increases spending on military, police, and security must decrease spending on and attention to other substantive areas. From a social welfare point of view, the decision to sacrifice "butter" may hurt people in ways above and beyond the immediate spectre of violence. In particular, sacrificing "butter" to promote "guns" in a developing country context may erode progress in exactly those health and welfare goals that a government otherwise prioritizes. Such a worry is particularly salient at the local level, where cuts to government spending are most proximate to the services provided to people in need. From the point of view of violent actors, the squeezing of other government activities might be a measure of success and the pain to the population a powerful recruiting tool. We consider whether acts of dissident violence shift government priorities away from local social spending towards national level defense, with the effect that in the wake of violence, health outcomes deteriorate as governments

neglect their citizens.

To investigate this expectation, we take advantage of recently collected World Bank data on local government budgeting in Peru (*World Bank BOOST Data for Peru* 2016) and couple it with subnational data on violence that one of us collected (Sexton 2016). Peru is a particularly useful developing country context in which to explore the effects of subnational budgeting shocks caused by dissident violence. The Peruvian government has long responded to Shining Path terrorist activity, beginning in the 1980s through the capture of Guzman in 1992, and beyond. In the more recent period for which we have data, from 2008 to 2011, Peru remains the site of government-targeted violence largely in the context of drug activity. Because Peru's constitution requires the budget to be balanced, and Peru has a highly centralized budgeting process, we can examine how these attacks influence the central government's budgetary tradeoffs and its disbursements to the departments. We then use USAID Demographic and Health Survey (DHS) data (Rutstein & Rojas 2006) as well as other indicators from the Latin American Public Opinion Project (*Latin American Public Opinion Project* 2016) to trace effects on infant mortality and health facility use. In short, we are able to draw a direct connection between dissident violence and longer-term health outcomes via the pathway of government budgeting.

To address vexing endogeneity threats, we employ an instrumental variable approach that uses attacks during the budget discussion period (September–November) as an instrument for budget share. The timing of the attacks is critical, as we can rule out more general correlations by comparing results to the relationship between attacks that occur outside the budget period and those same social welfare outcomes. We demonstrate that Peru's increased allocations and spending on military and security squeezed out other budget areas, particularly health, to the significant detriment of infant health in local areas whose budgets were slashed. We check the robustness

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of these results with a variety of direct tests. We then test additional observable implications of the argument — that reported health services usage decrease in the time period following budget reallocation, that citizens will "rally around the flag" and support increased defense spending following attacks, and that incumbent vote shares decrease in the wake of attacks providing politicians with incentive to respond to dissident violence. All of these offer support for our theoretical argument.

This paper contributes to the academic and policy literatures in several ways. First, it provides a theoretical story that captures endogenous government responses in the form of "guns versus butter" tradeoffs, and thereby provides a more complete explanation of the process linking violence to social welfare outcomes. This is critical because governments make decisions that mediate the detrimental effects of violence and therefore the government response cannot be ignored. Second, we contribute to the debate on the relative success of dissident violence, by demonstrating that governments do respond to violence through budget tradeoffs, though the consequences for dissident groups are unclear. On the one hand, budget decisions could hurt local populations in ways that may provide fertile recruitment possibilities. On the other hand, people could blame the rebels for violence and declining social welfare, not accurately gauging the impacts of government budgeting. Third, we highlight the role of electoral politics: incumbents are hurt by violence and may therefore respond by meeting public opinion that favors sharp security responses, which negatively affects social welfare outcomes. From a policy perspective, our argument highlights a role for international donors to target supplements to social spending when localities are in the midst of violent conflict.

The paper proceeds as follows. First, we consider the literature on the consequences of dissident violence, following which we review the causes and effects of "guns versus butter" tradeoffs in government budgeting. Notably, this literature is

primarily developed for the international relations and developed-country comparative politics literatures. Therefore, we adapt this thinking to the developing country context. Additionally, we review work on the effects of government budgeting and spending on social welfare outcomes. We then explain our theory linking budgeting decisions to welfare outcomes, highlighting decision makers' time inconsistency problems as they consider how to allocate between "guns" and "butter." Our research design, centered on soldier deaths during the budgeting process in Peru (2008-2012), allows us to improve causal identification by comparing against violence during other periods. We link violence to budgeting and welfare outcomes using naive approaches, instrumental variables, and supplementary qualitative data. Finally, we conclude by considering the implications for both violent actor behavior and development goals.

2   Literature

Three literatures inform our study: the consequences of dissident violence, "guns versus butter" in government decision-making, and the determinants of social welfare. We review each in turn and then synthesize them to make clear how we build on them in this analysis.

2.1   The Consequences of Violence

Violence, by definition, is costly and tragic. In its most escalated form, war, thousands of people typically die in combat. There is much to be said about violence as a negative outcome in itself, but we are interested in understanding the downstream consequences of violence on broader social welfare. On this, scholars have argued that war leads to: higher adult mortality (Li & Wen 2005), fewer (disability adjusted) life years due to a variety of infectious diseases (Ghobarah, Huth & Russett 2003*b*), in-

creased infant mortality and worse access to potable water (Gates, Hegre, Nygard & Strand 2012), and negative public health consequences accruing disproportionately to women over men (Pumper & Neumayer 2006). In Peru specifically, scholars have found that the war with the Shining Path led to: negative women's health outcomes (Grimard & Laszlo 2013), negative education outcomes (Leon 2012), and lower monthly earnings (Galdo 2013).

Existing research thus suggests a correlation between violence and a variety of longer-term negative social welfare outcomes. But key questions remain unanswered. Most notably, the chain of actors and activities connecting violence to such outcomes — a chain that is long and undoubtedly contains multiple important steps — is under-theorized and untested. When a dissident group uses violence, a government must decide how to respond to the violence amid the broader context of governance activities in which a sovereign state engages. A government might choose to ignore the violence, or it might ramp up security measures in an effort to militarily defeat the dissident efforts.[1] Alternatively, a government may invest more in social services in order to win the hearts and minds of the population. If governments choose to invest in public services, as the Colombian government has done in recent years to combat the FARC, we should not observe worse long-term social welfare outcomes. In other words, the endogenous government response to violence is critical in understanding the mechanism by which negative social welfare outcomes obtain. Notably, a government's response is conditioned on whether budgets are open to renegotiation, a point not identified in the provocation literature. If budgets cannot be renegotiated then the government response will be limited to budget shuffling within an existing defense budget, thereby not robbing any other sectoral spending. Most existing stud-

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[1]Some literature on terrorism examines how governments respond to terrorist violence (e.g., Thomas 2014), which provides insights for our research, but ultimately that line of inquiry stops at the government response without considering downstream effects.

ies offer cross-national correlations that are not well-equipped to incorporate causal mechanisms and that typically do not include a credible identification strategy to disentangle these effects. How then does a government respond to dissident violence, and what are the consequences of the response?

2.2 Guns versus Butter in Government Budgeting

As the sovereign entity in a country, governments must provide a complex mix of public goods ranging from security to various services. Because budgets are finite, especially in developing, conflict-affected countries that face hard budget constraints, governments must make difficult tradeoffs. Generally, this debate is framed in terms of "guns versus butter" decisions, whether at the national or international level (Powell 1993, Skaperdas & Syropoulos 2001). An older literature examines these decisions in the United States, focusing on the extent to which defense spending squeezes out other spending (Russett 1969), perhaps at the expense of low-income groups in particular (Peroff & Podolak-Warren 1979). While early findings have been debated (e.g., Mintz 1993, Gifford 2006), evidence exists for at least an indirect tradeoff, in that US military spending crowds out other spending and thus impedes growth (Mintz & Huang 1991). Limited scholarship on "guns versus butter" in developing countries parallels these suggestive but partial findings (e.g., Antonakis 1999, Heo & Hahm 2006, Bullock & Firebaugh 1990).

In general, literature on "guns versus butter" has stalled on data issues and has done little to address the endogeneity problem that the same factors may influence both spending on security and on social welfare service provision. This warrants closer attention to proper identification of the causal chain, which we do by focusing on temporally bounded, violence-related exogenous shocks to the budgeting process.

With data at the local level, we can most directly test the link between changes in security spending and changes in social welfare spending that affect citizens directly. Moreover, we can extend the literature by examining the complete causal chain, linking violence to relative social welfare spending to social welfare outcomes, the last part of which we turn to now.

2.3 The Determinants of Social Welfare

Social welfare outcomes are a product of many different factors ranging from environmental dynamics to human decisions. Of all actors, as the sovereign authority in a country, a government bears the responsibility of improving social welfare; a government attempts to do so by allocating budget resources to social welfare activities, such as the provision of health services. Among the public goods that governments provide, health services are one of the most basic, and they are the focus in our study. In a review of the literature in health economics, Farahani, Subramanian & Canning (2010) summarize that many studies using aggregate health indicators find little effect of public health spending on health outcomes. To get around this, the authors estimate the effects of cross-sectional, state-level public health spending on mortality outcomes in India, using a state's fiscal deficit as an instrument. They find that a 10 percent increase decreases the probability of death by 2 percent, with those effects applied primarily to women, youth, and the elderly.

If Farahani, Subramanian & Canning (2010) are correct that health spending increases lead to lower mortality, it is possible that the opposite is also true: health spending decreases may be associated with higher mortality rates. But the association needs to be investigated further, and it would benefit from direct budget and expenditure data while also accounting for the causal process that motivates the budget

and expenditure shifts.[2]

2.4 Some Lessons

Much past research is fragmented into isolated investigations of aspects of violence, government response, and welfare outcomes. Loosely aggregating, this work suggests that the causal chain we have posited is plausible. Violence is broadly associated with negative social welfare outcomes, governments make budget decisions with an eye towards tradeoffs between providing for security or services, and government budgeting and spending may in fact alter health outcomes. To demonstrate a compelling complete causal chain, however, several tasks remain. First, existing studies lack fine-grained data on some concepts, especially government response, a problem we remedy with new high resolution data from the World Bank on central and local Peruvian government budgets and expenditures (*World Bank BOOST Data for Peru* 2016). Additionally, the literature on each of the segments just reviewed largely neglects proper causal identification, which is likely crucial in each of these areas, as the endogeneity challenges are not trivial. In particular, we explicitly account for the endogenous government response to dissident violence, and which we discuss more fully in the research design below.

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[2]We also note that in 22 developing and middle-income countries, including Peru, the national government cannot run deficits by Constitutional mandate (Elkins 2016). This implies that subnational units' ability to run deficits to fund services like health is likewise constrained.

3 Theory

3.1 Dissident Violence and Government Response

Dissidents and governments face off over a variety of political incompatibilities including, most commonly, control of a government or control of territory. Private motives, such as drug trafficking or looting, can also underlie dissident or government violent behavior. For particularly weak dissident groups, violence can be a strategy to provoke a harsh response from the government that, in turn, pushes the civilian population to support the dissidents (Lake 2002, Kydd & Walter 2006).

Given dissident violence, governments must choose a response. As noted, they may respond with violence as part of a war of attrition strategy, or alternatively increase spending on social services in order to win the hearts and minds of the population (Findley & Young 2007). Military doctrines and operating procedures are often sticky, especially in asymmetric conflicts in which institutions do not change much and learning is slow (Van Evera 2003, Findley & Edwards 2007), meaning that governments tend to respond in very similar ways over time. Thus, we would expect that in societies where governments have historically responded to dissident violence by returning violence, that the strategy of provoking the government would succeed in generating a military response.

A government's ability to respond to dissident violence depends on which government operations can be altered. Assume that a government faces hard budget constraints. If the government budget is not under discussion, a government can only reallocate within the security sector, not across sectors. Governments could boost their response in consequential ways, but other sectors would continue to operate given that their budgets remain intact. Thus, while dissidents could be successful at provoking a government response, indirect effects on social welfare outcomes would

be minimal. These expectations are reinforced if we relax the hard budget constraint assumption, and the government can use deficit spending to increase security spending. While relative spending on other sectors may decline, the absolute value of that spending need not.

If the budget is under discussion when attacks occur, however, governments can immediately renegotiate and draw from other sectors in order to boost security. Importantly, governments need not resort to deficit spending to do so. This is relevant as many countries have sharp budget constraints, including balanced budget requirements, which means that absent very high growth rates, governments must decrease spending in one sector in order to increase in another. For example, 27 national constitutions include provisions requiring a balanced budget, with 22 of these in developing or middle-income countries, including Peru (see Elkins 2016). Under budget constraints, responding to dissident violence with increased security spending requires that other sector(s) suffer.

Even if deficit spending is not a possibility, governments might be able to raise extra-budgetary funds in other ways: by reallocating fungible foreign assistance, through sovereign borrowing, or by collecting a special tax. We point out, however, that none of these are easy. With regard to foreign aid, donors may exercise significant control over aid resources thereby preventing aid reallocation, especially to security spending (Findley, Harris, Milner & Nielson 2016). Sovereign bondholders scrutinize developing countries' policy choices and the intended purpose of bond issues, leaving governments little leeway to spend on risky ventures (Mosley 2003). Governments can be creative in raising money through more or less official special taxes.[3] But even if a government could collect extra-budgetary funds quickly, it is

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[3] For example, Wellhausen (2015) demonstrates that governments can raise significant amounts of money by expropriating multinational corporations operating in their country.

unlikely that such new funds would completely wash out hard budget constraints —
or that they would not themselves be subject to debates about allocation between
"guns" versus "butter."

Thus, we take seriously the time-inconsistency problem the government faces when
it responds to dissident violence during a period when the budget is under discussion.
The government needs to provide services for the benefit of its citizens, but it also
faces immediate threats to which it feels a need to respond. The government faces
this dilemma because security concerns can generate costs for politicians. In the
developed country context, evidence suggest that in the face of insecurity, casualty-
sensitive voters may punish elected officials at the polls (Gelpi, Feaver & Reifler
2006, Berinsky 2009). Developing country contexts in which meaningful elections are
held may exhibit similar patterns. Incumbents may fear that continuing to spend
on longer-term service provision may be politically fatal as security concerns rule the
day. While there may be a punishment for not responding to security, citizens are
unlikely to punish elected officials for robbing social service budgets as reductions in
social services are less politically salient, not to mention less noticeable. Further, if
citizens punish the government for equivocation on security, they may also rally in
support of the government to encourage it to provide protection from an existential
threat. Thus, not only can inaction be unpopular among citizens, but a proactive
response can be politically popular. The immediacy and political salience of security
concerns may therefore push a government to pull funds out of service provision and
put it into security spending.

For analytical tractability, we operationalize service provision by focusing on
health spending (and we discuss this decision more below). Based on these expecta-
tions, we hypothesize:

Hypothesis 1 *Violence during national budget discussions should lead to increases in security spending and decreases in health spending (relative to violence outside of the budget discussions).*

Changes in government budgeting and spending may have consequences for social welfare outcomes, to which we turn now. We emphasize that in the process of pulling funds out of service provision in favor of security, the government is trading off local budget allocations in favor of allocations to the much more centralized, national security apparatus.

3.2   Government Budgeting and Social Welfare Outcomes

While social welfare outcomes may be the product of a variety of factors, the government is the primary actor responsible for attempting to provide public goods aimed at improving social welfare. In the absence of security threats, governments may invest in a variety of sectors such as health and education, with hopes that spending in these areas will improve social welfare. Even if the spending is not actually welfare improving, it may still be politically expedient.

We are primarily interested in understanding what happens when spending on social services drops or disappears. Whether or not spending improves social outcomes appreciably, rapid reductions may inflict harm on local populations. When large drops occur, citizens who are benefitting from social services are suddenly unable to do so any longer.

When dissident violence motivates budget reallocation toward security, the government needs to decide from which services to shift spending. Suppose the government is guided by a norm to maintain the ex ante status quo relative distribution of resources across localities. In that case, the government will pull funding from localities

marked by violence, as those are the localities to which additional security spending will be targeted. This leaves localities where violence has occurred both inadequately serviced and insecure. With fewer services and a heightened government reaction that likely includes substantial violence, citizens will have fewer options and less access to the services that are available given the security situation.

The scenario outlined above, in which the government replaces local social spending in insecure localities with security efforts, is not the government's only option. We posit, however, that it is both plausible and observable. In particular, this scenario is likely in countries where the government's anti-dissident strategy does not involve spending to win local "hearts and minds." In fact, a government that is not motivated by a "hearts and minds" strategy may pull local funding in an effort to punish dissidents and to inflict costs on the local population for supporting dissidents.

As noted above, for purposes of this paper, we primarily consider health spending. Governments are particularly likely to pull money from the local health sector and move it to security, because this both accomplishes the need to reallocate funds and can serve as a potentially visible and tangible punishment to areas in which violence occurs. Depriving local populations of health benefits is consistent with a harsh security response in that it both attempts to hurt dissidents and to convince local populations not to support anti-government behavior. Although we have reason to believe the health sector should be particularly affected, our theory implies that other social services should also suffer. In the empirical analysis, we focus primarily on health, but also conduct some initial inquiry into other sectors.

With fewer health resources, and a greater security presence that can include a violent government reaction, health effects should be evident especially for women and children who bear the largest costs of war (Pumper & Neumayer 2006). We thus hypothesize:

Hypothesis 2 *Decreases in local health budgets and spending should lead to higher infant mortality (relative to areas in which health spending does not decrease).*

3.3 Combining Violence, Budgeting, and Outcomes

Taken together, the two components of this causal process yield the following hypothesis:

Hypothesis 3 *Dissident violence during national budget discussions should lead to higher infant mortality in areas with violence (relative to dissident violence outside of the budget discussions).*

To evaluate these hypotheses, the analytical challenge is to show that violence translates into worse health outcomes through the government budgeting process — manifest as reductions in the health budget, and increases in the security budget. This requires, among other tasks, that we demonstrate that violence outside of the budget process is not associated with worse outcomes. It also requires that we identify additional observable implications of the causal mechanisms discussed above. We now detail a research design that attempts to model the causal process carefully and to provide a set of additional tests of various observable implications.

4 Research Design

In this study we are interested in estimating two stages of effects. In the first stage, we want to know the independent effect of anti-government dissident violence on "guns versus butter" budgeting decisions. In the second stage, we want to investigate the longer term implications of these budgeting choices, namely how the decision to pull

funding away from health and social services in favor of security considerations affects downstream social welfare outcomes.

4.1 Case Selection and Background

We choose to study Peru for a number of reasons. First and foremost, Peru's Constitutional balanced budget provision means that there is a relatively strong binding constraint that forces "guns versus butter" tradeoffs when making spending revisions towards security. In a review of developing and middle-income countries like Peru, 22 have a constitutional balanced budget requirement, though they may have varying levels of adherance to the constraint (Elkins 2016). Indeed, Peru's status as a middle-income democracy means that the results we show here may be useful in understanding the implications of "guns versus butter" debates for an important segment of the world. Second, Peru's time-constrained Congressional review of the national budget gives us plausibly exogeonous variation in the salience of dissident attacks in the local departments. From September to November, members of Congress have a small but central role in the budget approval process, which allows members to lobby for increases to security at the expense of social spending. However, the budget is required to be finalized by 30 November. At this point, there is nothing a member of Congress can do to increase security other than wait until the following budget period.

Peru is an important setting to study both because of its budgeting process as well as the persistence of violence in the country. Peru has experienced anti-government violence at the hands of the Shining Path organization for over thirty years. Founded in 1980 as a Communist, Mao-inspired militant group, the *Sendero Luminoso (Shining Path)* waged a guerrilla campaign against the government of Peru for more than

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a decade. In the past, the group employed terrorist attacks against civilians, including in Lima, in addition to fighting the Peruvian military, police, and paramilitary units supported by the government. When the leader of the Shining Path, Abimael Guzman, was captured in 1992, the organization lost a great deal of its political and military strength. Hunted down by police and military units through the 1990s, Guzman's successor Oscar Ramirez was captured in 1999.

Since the early 2000s the Shining Path has morphed from a Communist insurgency to a much smaller cocaine production and smuggling organization, albeit one that continues to espouse Marxist-Leninist political rhetoric. The US and Colombia's joint "Plan Colombia" military and coca eradication efforts in the early 2000s contributed to the growth of coca production in Peru. Coca cultivation has moved over the border, making Peru now the largest producer and exporter of coca. Shining Path elements operate primarily in rural coca producing parts of Peru, where they rely on a symbiotic economic relationship with the local population that benefits from the earnings of the coca trade. Government military forces continue to engage armed Shining Path guerrillas, with the expressed goal of eradicating what the government characterizes as a "subversive" organization. And, Shining Path guerrillas continue to target and kill government soldiers, acts of violence that we exploit in our causal identification strategy.

Today, Peru must make decisions about where to allocate scarce security resources in the face of the smaller, but persistent threat of Shining Path guerrillas and drug runners. Importantly for our purposes, security operations are under central control. Peru does allocate security budgets to the 24 departments, under the categories of police, military, and other defense spending. But, operations against the Shining Path are directed through the central military chain of command. This implies that the effects of security budgeting may in fact be fungible across departments. It is

not clear, for example, that troop deployments correlate with changes in particular departments' budgets.

In stark contrast, the rest of the public budget is implemented through the Ministries in Lima, via Ministry actors in regional offices in each department.[4] In other words, the central budget allocates funds for health services in a particular department, and the national Ministry administers these funds through its department-level office. As a result, funds for social services like health are much less fungible across departments. Thanks to World Bank collection efforts, we have data on budget allocations as well as actual spending levels over time for Peru's 24 departments, across a variety of substantive areas (*World Bank BOOST Data for Peru* 2016).

4.2 Data

To measure dissident violence against government military targets we introduce new data from Peru's *Defensoria del Pueblo*, an independent government agency that, among other things, tracks social and political violence in the country. Since 2007, the *Defensoria* has released consistent monthly reports on social conflict in Peru, such as conflicts between communities and mining companies (Sexton 2016). Since 2010, these reports have also included "subversive violence by dissidents from the Shining Path. It is important to use the *Defensoria* data rather than, say, media reports of violence, because the *Defensoria* includes open-source data as well as data collected directly via local offices in each of Peru's 24 departments.

The independent variables of interest in this paper are measures of dissident attacks in which government targets are killed. We focus on these severe incidents of violence, because attacks that result in the death of soldiers receive much greater

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[4]The only exceptions are some non-programmatic funds, such as transfers that are specific to extractive industries, that are transmitted directly to departments or lower levels of administration.

attention from the media and populace than attacks that do not produce casualties, thereby providing a basis for government action. This extreme violence should be most likely to cause shocks to the budgeting process. In order to identify these fatal attacks, we code incident descriptions from *Defensoria* to count the number of soldier fatalities. For the purposes of identifying plausibly exogenous shocks to the budget process, we focus on dissident attacks that killed soldiers from 1 September through 30 November, which is the period in which the budget is under debate in Congress. We have data for the years 2010 through 2015. During the budget period in these years, the number of soldiers killed in dissident attacks ranges from 0 to 12. It could be that deaths during the budget period are related to a trend of violence that occurred over recent months in each department. Therefore, we also calculate a de-trended measure, which subtracts soldiers killed in a given department in the three months preceding the budget period (1 June – August 31) from the soldiers killed in the budget period. Finally, we also conduct robustness analyses based on the number of incidents rather than casualty counts.

Data on government budgeting are sourced from the World Bank's BOOST program (*World Bank BOOST Data for Peru* 2016). The BOOST data include annual observations for each of Peru's 24 departments, and are divided by both budget allocation and final spending in specific sectors, including health, defense, education, environment, transportation, and culture. We divide each sectoral budget by the overall departmental budget to compute the budget share dedicated to the sector. We do the same for data on actual spending levels, which are useful not only for robustness checks but to understand "real life" predicted effects. These data are available for 1999 to 2011.

We use infant mortality as our second-stage dependent variable. Infant mortality is known to respond relatively rapidly to changes in pre-natal care access, which

we hypothesize that shocks to the health sector budget will affect. Additionally, and unfortunately, mortality rates are relatively high and varied across departments as compared to other health indicators, which means that even with small survey samples per department we can obtain reasonably precise estimates. The data come from five waves of USAID's Demographic and Health Survey (DHS) in Peru, from 2008 to 2012. The DHS surveys use the standard WHO procedures for measuring infant mortality and sample so as to make estimates comparable across departments. We calculate the reported incidence of infant mortality per reported childbirths, in each of Peru's 24 departments in each year.

Two Peruvian national elections overlap with years for which we have data. We use data from the Constituency-Level Elections Archive (CLEA) to collect the department level vote shares for candidates of each party for the Peruvian Congress in these two elections. Several parties changed names between the elections, but we track those changes and account for them when computing incumbent vote shares.

Finally, we are able to use public opinion data to investigate observable implications, including the link between public opinion and government budgeting, and how women are accessing health services. Those data come from the Latin America Public Opinion Project (LAPOP). For our purposes, relevant LAPOP surveys were conducted in Peru in 2008, 2010, and 2012. We use questions that were included on all three of these surveys. It is important to note that these surveys are conducted in January, which means that respondents are surveyed shortly after the budget has been set (30 November of the previous year). We leverage this timing in interpreting our findings.

Table 1 describes key summary statistics.

Table 1: Summary Statistics

Variable	Obs	Mean	Std. Dev.
Infant Mortality (per 1,000 live births)	96	17.9	26.2
Health Budget Share	100	12.6	5.6
Defense Budet Share	85	2.2	3.5
Health Spending Share	100	12.0	4.8
Defense Spending Share	85	0.02	0.03
Soldiers killed in Budget Period	104	0.3	1.5
Soldiers killed in December	104	0.3	0.2
Soldiers killed in Budget Period (de-trended)	104	0.22	1.45
Women's Health Access	46	0.6	0.2
Incumbent vote change 2006 to 2011	24	-0.1	0.1

4.3 Identification Strategy

Annual government budgeting decisions and dissident violence have a complex relationship: dissidents may respond to government spending at the same time that the government responds to dissident behavior. Similarly, underlying factors such as economic growth, opposition politics, social welfare conditions, or international aid may affect cycles of dissident violence as well as government spending patterns. This endogeneity requires us to work creatively to isolate a plausible source of exogenous variation in violence relative to budgeting decisions.

In Peru we are fortunate to be able to take advantage of the idiosyncratic timing of the Congressional review of the national budget, which allows us to isolate exogenous variation in Shining Path attacks that kill soldiers. In contrast with some democracies, such as the United States, the Peruvian Congress has a circumscribed role in the annual budgeting process. With the bulk of power focused in the Ministry of Economy and Finance (MEF) and the President's office, appropriations in Peru are led almost entirely by the executive branch. Since constitutional reform in the early 1990s, Congress does not have an appropriations committee and cannot directly propose budgetary measures or changes. The MEF, under the direction of

the President, drafts the budget during the early portion of the year, with little to no input from Congress. Then, during a ten-week review period from early September to 15 November, Congress reviews the budget and provides feedback to the MEF. Finally, during the last two weeks of November, the Congress formally debates and then approves the Budget Law, in which the MEF typically incorporates some of the recommendations from Congress. The balanced budget provision in the Peruvian Constitution means that Congress cannot approve a budget that includes a deficit. The deadline for budget approval is 30 November.

Now, the President can independently appropriate funds outside of the formal budget through the use of "urgent decrees" (*decretos de urgencia*), which bypass Congress completely. In principle, *decretos de urgencia* should only be used for emergencies and issues of public safety, but Presidents typically use them for a range of issues, including generic economic stimulus through deficit spending. If the President always used extra-budgetary *decretos de urgencia* to put more funds into defense in response to dissident violence, we would not expect to see shifts in budget allocations. We demonstrate empirically that this is not the case.

We consider two time cut-offs to be reasonably exogenous to the relationships of interest. First, the 30 November deadline for the passage of the budget gives a hard end to the period in which Congress can affect the next year's budget. Second, the somewhat softer 1 September start date for budgetary debate in the Congress period allows us to isolate the incidents of dissident violence that allow interested members of Congress to put pressure on the MEF to shift from "butter" to "guns" in their department in the face of dissident violence. We theorize that it is the extra pressure of Congressional members that would push the MEF to shift funds more than it would otherwise. Additionally, we test the observable implication that budget shifts should be more likely in departments where Congressional members are pursuing re-election.

Figure 1: Attacks that kill soldiers, by month
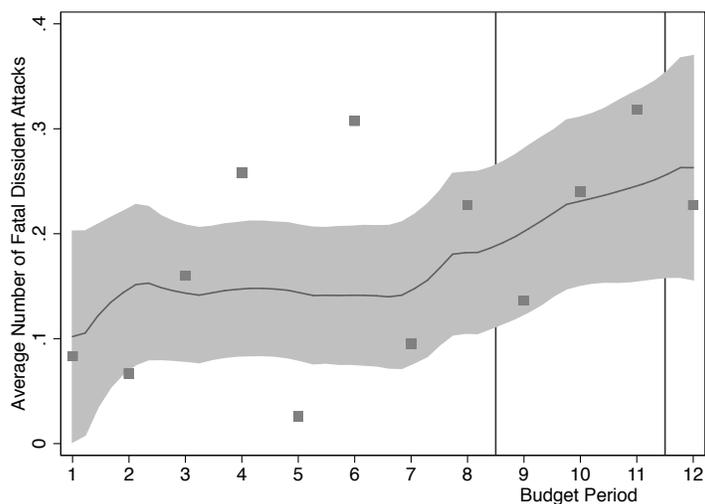
The key identifying assumption here is that dissidents in a given department do not strategically time their attacks to coincide with the budgeting process. One way to test for this kind of strategic behavior is to look at the number of fatal attacks by dissidents by month and see if there is a significant increase or decrease around the beginning and end of the congressional budget debate period. Figure 1 shows the average number of attacks by dissidents which resulted in soldier(s) death, by month. While there is variation over the months of the year, there is a small increase in attacks toward the end of the year. Importantly, there is no sorting along the budget review process (that is, there are not clear discontinuities between months 8–9 and months 11–12). However, as mentioned above, we account for possible annual trends by de-trending our measure of violence in the budget period, subtracting violence in months 6–8 from violence in months 9–11.

Even if the first stage is well identified, we must defend the second identifying assumption for an instrumental variables approach: dissident attacks that kill soldiers must only affect social welfare outcomes through changes in government budgeting

and spending, and not through any other channel. We substantiate this below by ruling out other possible channels. Additionally, to attend to additional sources of confounding, we include department and year fixed effects.[5]

4.4   Estimation

Our empirical approach employs a fixed-effects estimation strategy, with all variables measured in levels.[6] The first stage independent variable of interest is constructed in two ways: the count of soldiers killed during the budget period in a given department-year, and a de-trended count that subtracts earlier deaths (June-August) from budget period deaths (September-November). For the first stage we estimate, using OLS:

$$X_{it} = \gamma_1 Z_{it-1} + \gamma_2 D_i + \gamma_3 Y_t + \epsilon_{it}$$

where X is the health budget share in department i in year t, Z is the number of soldiers killed, D is a vector of department indicators, Y is a vector of year dummies, and ϵ is the error term.

We then fit the second stage, using OLS:

$$Y_{it+1} = \beta_1 X_{it} + \beta_2 D_i + \beta_3 Y_t + \epsilon_{it}$$

where Y is the infant mortality rate in department i in year t, and X are the fitted values from the first stage.

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[5]Due to data constraints outlined above, the years under examination vary by model.

[6]See the Appendix for robustness analyses, including results from a first differences estimator and from fixed effects with lagged dependent variable.

5   Results

5.1   Main Results

We first show the reduced form average effect of soldier fatalities in the budget period on health and defense budgeting. Table 2 shows that health budget share in the average department falls with more soldiers killed in the budget period, with a coefficient of about 0.2. This translates into about a 1.5 percent decrease in the budget share per soldier death in the budget period. These results are consistent whether or not we de-trend the count of soldier deaths.

Table 2: Soldiers killed during budget period reduce health share

	(1) FE	(2) FD	(3) FE	(4) FE	(5) FD	(6) FE
Number of Soldiers Killed	-.13+	-.18*	-.21+	-.19**	-.25**	-.28**
	(.07)	(.08)	(.11)	(.06)	(.08)	(.09)
De-trended?	No	No	No	Yes	Yes	Yes
Lag DV?	No	No	Yes	No	No	Yes
N	100	75	100	100	75	100
Clusters	25	25	25	25	25	25

+ p<0.1 * p<0.05 **p<0.01, Dept & Year fixed effects, SE clustered by dept .
Coefficients in percentage point changes in following year's budget.

Table 3 shows the reduced form relationship between soldier fatalities and the average department's defense share of the budget. Coefficients are positive as expected but not significant across specifications.

However, it should follow that departments in which defense budgets are already high vary in non-systematic ways from other departments. Therefore, we include a covariate that equals 1 if last year's defense budget was above the department mean and 0 otherwise. By doing so, we find statistically significant effects for both health

Table 3: Soldiers killed during budget period and defense share

	(1) FE	(2) FD	(3) FE	(4) FE	(5) FD	(6) FE
Number of Soldiers Killed	.04	.08	.15	.05	.08	.17
	(.10)	(.06)	(.14)	(.10)	(.06)	(.14)
De-trended?	No	No	No	Yes	Yes	Yes
Lag DV?	No	No	Yes	No	No	Yes
N	100	75	100	100	75	100
Clusters	25	25	25	25	25	25

Dept & Year fixed effects, SE clustered by dept. Coefficients in percentage point changes in following year's budget.

share (negative) and defense share (positive). See Table 4. Effects are sizable and significant with both regular and de-trended data. This gives us prima facie evidence that soldier deaths during the budget period are indeed related to Congressional decisions about how to allocate both "butter" and "guns" in the departments.

Table 4: Soldiers killed during budget period reduce health budget share, increase defense share

	Health		Defense	
	(1)	(2)	(3)	(4)
Number of Soldiers Killed	-.15*	-.22**	.12*	.12*
	(.06)	(.06)	(.05)	(.05)
High Defense Budget (t-1)	-.59	-.58	-.26	-.26
	(.54)	(.54)	(.67)	(.67)
De-trended?	No	Yes	No	Yes
N	100	100	85	85
Clusters	25	25	25	25

* $p<0.05$, Dept & Year fixed effects, SE clustered by dept .
Coefficients in percentage point changes in following year's budget.

In Table 5, we replicate Table 4 by using the actual amount of Peruvian Soles spent in each budget sector, rather than only the amount allocated. Results are

consistent. When more soldiers are killed during the budget period, spending is significantly reduced in the health sector, but spending is increased in the defense sector. Additionally, in these estimations, last year's defense budget becomes a significant negative predictor of health sector spending. In other words, those departments that were already budgeting above average amounts for defense are spending less on health.

Table 5: Soldiers killed during budget period reduce health spending, increase defense spending

	Health		Defense	
	(1)	(2)	(3)	(4)
Number of Soldiers Killed	-1.53+	-1.90+	2.95+	2.96+
	(.91)	(1.02)	(1.64)	(1.64)
High Defense Budget (t-1)	-22.83*	-22.64*	-10.81	-10.94
	(10.06)	(10.07)	(24.83)	(24.95)
De-trended?	No	Yes	No	Yes
N	100	100	85	85
Clusters	25	25	25	25

+ $p<0.1$ * $p<0.05$, Dept & Year fixed effects, SE clustered by dept .

Coefficients in millions of Peruvian Soles in following year's budget.

We now explore the extended effects of these changes in budgetary allocation and spending. We use soldier deaths in dissident attacks in the previous year's budget period as an instrument for health budget share. There are negative implications for infant mortality in the following year, that is, in the year that reduced health budgets take effect. In Table 6 we show that for each 1 percentage point reduction in departmental health budget share, infant mortality increases by between 13 and 24 per 1,000 live births. This is a dramatic increase. According to the United Nations, the world average infant mortality rate is 49.4 per 1,000, while in our sample the average in Peru is 18.1 per 1,000.[7]

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[7]The CIA estimates that for 2014, Peru's infant mortality rate is slightly higher: 19.6 per 1,000. https://www.cia.gov/library/publications/resources/the-world-factbook/geos/pe.html

Table 6: Decreased health budgets increase infant mortality

	Budget		Actual Spending	
	(1)	(2)	(3)	(4)
(Instrumented) Health Share	-23.65*	-13.76	-21.35*	-12.84
	(12.35)	(11.96)	(10.39)	(10.98)
De-trended?	No	Yes	No	Yes
N	72	72	72	72
Clusters	24	24	24	24
First Stage F-stat	237.3	155.0	168.6	106.8

* p<0.05, Dept & Year fixed effects, SE clustered by dept.

Effects are infant mortality per health budget share percentage.

We combine these results by considering a dissident attack in a department that kills one soldier in the budgetary debate period. We estimate that the department's health budget share decreases by about 1.5 percent (while the department's defense budget share increases). This seemingly small reduction in the health budget share then results in an increase in infant mortality in the subsequent year by 3.8 per 1,000 live births. The birth rate in Peru is estimated to be 18.3 per 1,000 people, which in the average Peruvian department of population of 1.07 million means about 19,581 live births per year.[8] Thus, the reduced health budget allocation and spending resulting from the soldier death implies 75 infant deaths two years later that would not have otherwise occurred.

5.2 Mechanisms

In this section we explore four mechanisms that further explain the relationship between dissident violence, government budgeting and infant mortality in Peru. First, we demonstrate that in the year following soldier death(s) in the budget period, re-

[8]https://www.cia.gov/library/publications/the-world-factbook/fields/2054.html

ported usage of government health services declines, particularly for women. Second, we show that in surveys soon after a dissident attack kills soldier(s), there is a substantial but short-lived "rally around the flag" effect for survey respondents in the department. Third, we report evidence of a significant electoral cost of soldier deaths at the hands of dissidents to members of Congress: in the following election, voters appear to penalize incumbents when there are soldier deaths in the department. This cost does not extend to health budgeting and spending, however; there does not appear to be a direct relationship between the health budget and electoral fortunes. Lastly, we show that, for our data in Peru, health is not the only non-defense sector to be cut in the "guns versus butter" tradeoff. Environment, education, and culture each sustain small but meaningful cuts at the same time that health does.

First, Table 7 examines the determinants of LAPOP survey respondents' reported use of government health facilities. We have already found a relationship between soldier death(s) in the budget period in year t and health budget shares in year $t + 1$. Now, we look at the effect of soldier death(s) in the budget period in year t on reported health facility usage in $t + 1$. A significant, negative effect would underscore the relevance of the health budget share to health outcomes, and it would help illustrate the reduced care that could lead to poor infant health. Indeed, we find that female respondents' reported use of health facilities is reduced by 3 percentage points per soldier killed. In contrast, there is no effect on health access for men, a finding consistent with the literature that finds particularly adverse effects of conflict on women and children (Pumper & Neumayer 2006).[9] We might speculate that the reductions in coverage from budget cuts might be focused more on outreach services, including pre-natal care, and less on acute services, such as emergency care.

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[9] In general men report using health facilities less often (54 percent of men, as compared to 63 percent of women).

Table 7: Soldier deaths in the budget period reduce women's use of government health facilities

	Women		Men	
	(1)	(2)	(3)	(4)
Number of Soldiers Killed	-.03*	-.03*	-.002	-.002
	(.01)	(.01)	-.002	-.002
De-trended?	No	Yes	No	Yes
N	46	46	46	46
Clusters	23	23	23	23

* p<0.05, Dept & Year fixed effects, SE clustered by dept.

Effects are percent reporting health center usage.

Second, it appears that the "guns versus butter" trade-offs that members of Congress make when soldier deaths occur during the budget period have a strong basis in the local public's immediate reactions to violence. Recall that the budget period runs from September–November, and LAPOP surveys are administered in January. Respondents that experienced soldier death(s) in their department in the preceding budget period are significantly more likely to express the highest level of "national pride" available on the survey.[10] See Table 8. For each soldier killed, the percentage choosing the highest on a seven-point scale of pride increases by about 6 percentage points. Once we roll the timeframe back three more months, however, the effects disappear. This suggests that the "rally around the flag" effect of soldier death(s) is both powerful and ephemeral. This evidence increases our confidence in our identification strategy that focuses on popularly salient shocks that occur at exactly the time that members of Congress have the ability to respond.

Third, we provide more evidence as to the political mechanism hypothesized in the paper: members of Congress trade off "butter" for "guns" in accordance with

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[10]With this data, we are able to compare attacks in the budget period in 2008, 2010, and 2012 to LAPOP survey results in 2009, 2011, and 2013.

Table 8: Soldier deaths in the budget period increase national pride, briefly

	Budget period before survey		4-6 months before survey
	(1)	(2)	(3)
Number of Soldiers Killed	.06**	.07*	-.02
	(.02)	(.03)	(.03)
De-trended?	No	Yes	No
N	69	69	69
Clusters	23	23	23

* p<0.05, Dept & Year fixed effects, SE clustered by dept.

public opinion and with their own political prospects in mind. Table 9 illustrates the electoral costs to attacks that occur within a member of Congress's department. Here, our data concern dissident attacks and soldier death(s) before the 2011 election in Peru. For each soldier killed in a department in the six months before the 2011 election, incumbents in that department paid a 3 to 4 percentage point cost in vote share (Columns 1 and 2 of Table 9). Like the "rally around the flag" finding in Table 8, however, this effect is ephemeral. The relationship becomes insignificant when soldier death(s) occurred more than six months before the 2011 election (Columns 3 and 4). In Columns 5 and 6 of Table 9, we show that there is not a significant relationship between the size of a department's health budget in 2010 and incumbent party vote share in 2011. In other words, there is no evidence that incumbents paid a penalty for having relatively low health budgets. These results are all robust to controlling for the GDP per capita in the department.[11] Unfortunately, because we have data available around only one election, our inferences here are made with a single cross-section. Nonetheless, Table 9 provides evidence that savvy incumbent politicians would understand that there is an electoral penalty to inaction on short-

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[11]Our use of department fixed effects in previous analyses allow us to avoid controlling for GDP per capita which, in many of our specifications, would introduce post-treatment bias.

term, salient security concerns, but no particular electoral penalty when it comes to health budgeting.

Table 9: Only recent soldier deaths reduce incumbent vote share (2011 election)

	Within six months of election		More than six months before election		Health Budget Share in year before election	
	(1)	(2)	(3)	(4)	(5)	(6)
Number of Soldiers Killed	-.04*	-.03+	-.01	-.01		
	(.02)	(.02)	(.02)	(.02)		
Health Budget Share					.00	.00
					(.01)	(.01)
GDP per capita		.01		.01		.01
(in 10,000 Soles)		(.01)		(.01)		(.01)
N	24	21	24	21	24	21
Clusters	21	21	21	21	21	21

* $p < 0.05$, Heteroskedasticity robust SE. Coefficients in incumbent party voting percentage .

Fourth, and finally, we show that "guns versus butter" trade-offs are not restricted to the health sector. In our theory above, we made a case for why a government, particularly one not using a "hearts and minds" strategy to fight dissident violence, might sacrifice local health budgets both for expediency and as a means of punishing a local population for supporting dissident groups. It may be equally or even more expedient, however, to pull funding from other non-defense sectors in response to acute violence. Our data allow us to examine budget shares allocated for education, culture, and environment in Peru's departments. Like the health sector, budgeting and spending in these sectors is run via the relevant Ministry and its regional office in each department.

Our approach here is the same as in Table 4. It is possible that departments that already have high defense budget shares face different constraints when reallocating funds in the face of soldier death(s). Thus, we control for whether a department's

defense budget was over or under the mean in the previous year. In Table 10, we see that next year's budget shares for education, culture, and environment are all reduced when soldier death(s) occur in the budget period. This suggests that whether or not there is a punishment aspect to the government's reallocation of funds away from health and toward defense, hard budget constraints in Peru result in reallocation away from other non-acute, social service sectors as well. If we had downstream data on education, culture, and environment outcomes at the department level, and we could estimate the length of time it would take for the effects of reduced budgets to take hold, we would expect to find similar, detrimental effects on these social welfare outcomes in a second-stage estimation.

Table 10: Soldier deaths in the budget period reduce other non-defense sector budget shares

	Education		Culture		Environment	
	(1)	(2)	(3)	(4)	(5)	(6)
Number of Soldiers Killed	-.06	-.15+	-.03+	-.02	-.07***	-.08***
	(.10)	(.08)	(.02)	(.02)	(.02)	(.01)
High Defense Budget (t-1)	-.50	-.50	-.42*	-.41*	-.15	-.14
	(.93)	(.93)	(.19)	(.18)	(.17)	(.17)
De-trended?	No	Yes	No	Yes	No	Yes
N	75	75	75	75	75	75
Clusters	25	25	25	25	25	25

* $p<0.05$, Dept & Year fixed effects, SE clustered by dept.

Coefficients in percentage point changes in following year's budget.

5.3 Placebo Tests

Here, we conduct two placebo tests to help ensure that the effects we observe above are in fact reflecting the true results (Imai, King & Stuart 2008). First, if the budget must be passed by 30 November, then attacks and soldier death(s) occurring in December cannot significantly affect the budget. Thus, to test the accuracy of our identification strategy, we regress health budget shares on soldier death(s) in December. See Table 11. Column 1 reports a bivariate model, and Columns 2 and 3 include our measure that focuses on death(s) in the budget period. We continue to have significant effects on death(s) in the budget period, and December death(s) have no effect.

Table 11: Placebo: December death(s) have no effect on health budget share

	(1)	(2)	(3)
Number of Soldiers Killed in December	-.08	.40	.79
	(.28)	(.33)	(.45)
Number of Soldiers Killed during budget period		-.14*	-.22*
		(.07)	(.08)
De-trended?	No	No	Yes
N	100	100	100
Clusters	25	25	25

Dept & Year fixed effects, SE clustered by dept.
Effects are health budget share.

Second, we conduct a placebo test that takes into account the full two stages of our theory. As before, we instrument health budget share in $t + 1$ with soldier death(s) in the budget period in year t. We test whether our instrumented health budget share can explain infant mortality in year t. If our identifying assumptions hold, this exercise should lead to null results. In Table 12, we find null results whether

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we regress the health budget share or actual spending on the instrumented health share measure. In sum, these placebo tests provide additional evidence in favor of the estimates.

Table 12: Placebo: The health budget does not affect last year's infant mortality

	Budget (1)	Actual Spending (2)
(Instrumented) Health Share	2.83	2.93
	(9.56)	(9.78)
N	72	72
Clusters	24	24

Dept & Year fixed effects, SE clustered by dept.

Effects are infant mortality per 1,000 live births.

6   Conclusion

In this manuscript, we have shown evidence from Peru that short term national security concerns in the aftermath of fatal dissident attacks can provoke budgetary realignments from social services to defense. Motivated in part by electoral concerns on the part of members of Congress and the popularity of security spending in the wake of attacks, these "butter to guns" transfers have negative implications for social outcomes. On average, the health sector budget cuts resulting from a single soldier fatality results in around 75 additional infant fatalities in the year following the budget reduction.We show that the increase in infant mortality is correlated with a reduction in reported health services utilization on the part of women.

These results have important implications for how we think about dissident violence, democracy, and development goals. To begin with, all the evidence suggests that members of the legislature are reflecting the (short run) preferences of their

constituents when they vote in favor of increased security spending, even though it is to the detriment of social services. Electoral returns and public opinion surveys corroborate that citizens are acutely concerned with security after attacks take place, something that cuts across nations. It turns out, however, that the salience of security concerns after an attack fade rather swiftly, while the implications of social spending cuts do not fade. A year or more after attacks during the budget period the reduced access to services, which we assume to prominently include pre-natal care, manifest in quite serious ways. The upshot is that it is democratic practice that facilitates the conversion of time-inconsistent preferences of voters into sub-optimal budgeting decisions, with real impacts on the health of the next generation.

What does this mean in practice? Knowing the electoral constraints of legislators, we might suggest that international development assistance organizations and non-governmental providers help to fill in the gaps in care that occur when "butter to guns" transfers take place. Similarly, during political debates about the appropriate strategy for tackling dissident violence, these indirect effects on social outcomes should be internalized. Even where political realities dictate the spending be increased on security, emergency support to critical social outcomes can be re-packaged as part of the defense budget lines.

In considering where the results shown in this paper may be relevant outside the specific context of Peru, we would focus on places where dissident violence intersects with reasonably binding budget constraints, and with a special emphasis on countries with democratic practices. In the Latin American region El Salvador and Nicaragua best fit the bill, while in sub-Saharan Africa there is Angola, Burkina Faso, Ivory Coast, Mali, Mauritania and Niger. Morocco, Egypt, Gabon, Ghana, Serbia and Ukraine are other places that have a constitutional balanced budget provision that may sometimes be binding in the face of sudden security threats.

Lastly, we urge scholars and policy makers to further develop this line of inquiry, examining the indirect effects of policies to combat dissident violence. While there are obvious costs to violence, we hope that future policies can reduce the secondary social costs to communities already negatively impacted by conflict.

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