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

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Abstract

Dissident violence inflicts direct harm on militaries and civilians. The longest-lasting consequences for civilians may be indirect, however, due to the government’s response. We explore how government engagement following dissident violence affects social welfare, specifically through budgetary shifts. We use new subnational violence and government budgeting data for Peru, allowing attacks on soldiers during the three-month national budget negotiation period to instrument for local health spending. Using data from 2008–2012, one soldier killed implies a shift of 1.1 percent out local health budgets, resulting in 74 predicted additional infant deaths two years later. We offer evidence in support of budgetary shifts that enable a coercive response rather than a hearts and minds response. We show that the effect on health budgeting operates through decreases in prenatal services and women’s use of health facilities. Our results identify a budgetary mechanism that translates dissident violence into a deterioration in social welfare.

Word Count: 9994
1 Introduction

At the conclusion of its 27 year civil war, Angola’s 2003 national budget allocated 78 percent of government resources to public services. Angola’s health infrastructure was decimated, due not only to the direct effects of violence but also to “meager resources allocated to the sector” throughout the war.\(^1\) Plans for 2003 included restoring health services that had been chronically under-provided: acquiring and distributing essential medicines, training health workers in rural areas, and upgrading training for nurses working in hospitals.\(^2\)

In Mali, in the midst of a violent insurgency, donors have sent targeted food and humanitarian aid, and some governments have provided military equipment and support.\(^3\) But general donor reluctance in the face of conflict has affected Mali’s budget. In 2012, the budget was cut 20 percent, such that ministries including health were “just ticking over...paying salaries and investing nothing.”\(^4\)

Both Angola and Mali belong to a set of states that have long faced excruciating decisions about how to allocate their limited resources in times of violence. These budget decisions are especially difficult because the governments in both states are constrained by constitutional balanced budget provisions. In this article, we demonstrate how shifting budget allocations in response to dissident violence can erode social welfare outcomes, as states rob civilian goods such as health in favor of other priorities. That civilians face indirect costs when violence siphons government resources away from social services compounds its tragedy.

Most research addressing the effects of violence on civilians examines its direct consequences, including the conditions under which governments or rebels directly target civilians during or around combat (see, for example, Azam & Hoeffler 2002, Kalyvas 2006, Eck & Hultman 2007, Downes 2008, Wood 2010). Broadly, much evidence demonstrates that civil-

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2 “Poor Condition of Health Infrastructures Hampers Sectors Growth.” All Africa, Comtex, Dow Jones. 30 December 2002.
4 “Not a Fragile State, Yet.” All Africa, Comtex, Dow Jones. 8 August 2012.
ians suffer dramatically at the hands of government and rebel forces.

Where scholars consider non-combat related effects, they typically emphasize cross-national correlations between violence and outcomes such as income, education, and health (see, for example, Collier 1999, Ghobarah, Huth & Russett 2003, Lai & Thyne 2007, Iqbal 2010). While this literature draws attention to some important implications of violence, it prompts attention to another potential source of negative welfare effects: the government’s response to violence itself. Specifically, we identify three key issues: (1) the particular welfare effects of government responses to violence, together with the mechanisms generating the effects, (2) a credible identification strategy to isolate an independent effect of government response on social welfare, and (3) sufficiently fine-grained data to carry out that identification strategy.

Governments can and do respond to acts of dissident violence through both combat and non-combat means. Governments may respond with inducement strategies and spend more on social services, in an attempt to win the hearts and minds of the people. In stark contrast, governments might respond to violence with coercive strategies, which have been observed and documented in contexts as diverse as the US, Europe, and many developing countries (Kalyvas 2004, Kalyvas 2006). Coercive strategies can require a resource-constrained government to cannibalize spending on social services in favor of other priorities, such as military activity. This process is sometimes referred to as moving resources from “butter” to “guns.” The resulting erosion of social services is particularly salient at the local level, where cuts to government spending are most proximate to the services provided to people in need. The government may even intend the reallocation of resources away from services to punish civilians that it perceives to be supporting the opposition. We focus on such coercive government responses to establish a budgetary means through which violence can indirectly translate into negative welfare outcomes. Crucially, government choices as to how to respond to violence

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5Compare, for example, the British government’s response after the 7/7 attacks, the Sri Lankan government’s response to Tamil Tiger violence, Israeli responses to Palestinian violence, Russian responses to Chechen violence, and the American reaction to 9/11.
shape its effects over the intermediate and long-term: shifts in budgets and spending can indirectly result in the loss of many lives.

To investigate a causal link between a government’s coercive response to dissident violence and welfare outcomes, we take advantage of recently collected World Bank data on budget allocations for local governments as well as actual spending in Peru (World Bank BOOST Data for Peru 2016) and couple it with subnational data on violence that one of us collected (AUTHOR 2016). Peru is a particularly useful developing country context in which to explore the effects of subnational budgeting shocks caused by dissident violence. In the recent period for which we have violence data (2008–2011), Peru remains the site of government-targeted dissident violence largely in the context of a transformed Shining Path’s drug activity. In this period, Peru faced 88 dissident attacks, which killed 86 soldiers spread across seven of its 24 departments (departments are most similar, though not identical, to provinces in other countries).

Crucially for our purposes, Peru has a highly centralized budgeting process, and, like Angola, Mali, and many other countries worldwide, Peru’s constitution requires the budget to be balanced (and this provision is followed) (Elkins 2016). As such, any attempt by the Peruvian government to increase coercive activities (or, alternatively, to win hearts and minds) would require boosting some sectoral budgets at the expense of others. These facts allow us to isolate how attacks influence the national government’s budget 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 as well as women’s health facility use. In short, we are able to connect dissident violence and poor longer-term health outcomes via the pathway of government budgeting. Peru’s status as a middle-income democracy suggests that our results may be useful in understanding the implications of budgeting for an important segment of the world.

To identify the budgeting pathway, we must confront vexing endogeneity issues. Dissi-
dents 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, preexisting social welfare conditions, or foreign aid may affect cycles of dissident
violence as well as government spending patterns. To address this, we introduce an instru-
mental variable for budget share: attacks that kill government soldiers (and not civilians)
during Peru’s clearly demarcated national budget discussion period (September–November).
The plausibly exogenous timing of the attacks, which we discuss and justify below, allows
us to rule out the effects of ex ante expectations of violence.

The character of dissident violence in present day Peru allows us to explore the budgetary
channel without having to contend simultaneously with direct effects of violence. Today,
Shining Path attacks target government facilities and military personnel, studiously avoiding
civilian casualties. Indeed, today the Shining Path’s dissident violence is not characterized
as “terrorist” in nature by the Global Terrorism Database, and even pro-government press
accounts in Peru refer to violence by the group as “subversive” rather than terrorist in
nature. Crucially, this allows us to carry out a two-stage regression exploring the budgetary
pathway without violating the exclusion restriction, as the health effects of dissident violence
for civilians is restricted to the budgetary channel.⁶

We demonstrate that Peru’s response to soldiers killed in the budget period, the time
when reallocation between sectoral budgets is possible, is to pursue coercive strategies by
slashing the health budget in the department where the violence took place, to the significant
detriment of infant health. In reduced form, using data from 2008 to 2012, one soldier killed
implies a shift of 1.1 percent out of the local health budget, resulting in a predicted 74
additional infant deaths two years later. Results are robust to a variety of specifications,
including placebo tests. We also show that reported usage of health services by women,
including prenatal care, decreases in the wake of budget shifts. Additionally, we demonstrate
that local budgets for culture and environment are similarly reduced when soldiers are killed

⁶We conduct additional tests to verify that the exclusion restriction is not violated through perceptions
of changing security.
What does the central government do with the resources it pulls from social services? We probe the budgetary and related survey data to shed light on this question, and we find some evidence in support of a guns versus butter tradeoff in which resources are moved from social services to defense spending, especially when violence is unexpected.

This paper contributes to the academic and policy literatures in several ways. First, it provides a theoretical argument and a causal identification strategy that capture endogenous government responses to anti-government dissident violence, thereby providing a more complete explanation of the welfare effects of those responses. Second, from a policy perspective, our argument highlights a role for international donors to supplement otherwise routine social spending, which is at risk when localities are in the midst of violent conflict. Third, by exploring the reasons for which the government reduces social service budgets and spending, we contribute to the debate on the relative success of dissident violence. In the Peruvian context under consideration, at least, dissidents face a government that reduces social service budgets, whether out of necessity to supplement defense spending or as a means of punishing civilians.

2 Literature

Violence, by definition, is costly and tragic. In its most escalated form, war, hundreds or thousands of people, including civilians, die in combat. We are interested in understanding the downstream consequences of violence for broader social welfare. We know that conflict can lead to deteriorations in public health (in interstate conflicts) (Iqbal 2010), including higher adult mortality (Li & Wen 2005), fewer (disability adjusted) life years due to infectious disease (Ghobarah, Huth & Russett 2003), increased infant mortality and worse access to potable water (Gates, Hegre, Nygard & Strand 2012), and negative public health

\[7\] In the Appendix, we probe implications for public opinion and voting behavior: citizens rally around the flag, and incumbent party vote share decreases in the wake of soldier casualties.
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).

The causal chain that explains correlations between violence and a variety of longer-term negative social welfare outcomes has, however, been under-theorized and largely untested. When a dissident group uses violence, a government must decide how to respond to the violence amid the broader set of governance activities in which a sovereign state engages. The government response to violence is critical in understanding the mechanism by which negative social welfare outcomes obtain, or whether they obtain at all. For example, a government could choose to ignore violence. Alternatively, a government could respond by investing more in social services to win the hearts and minds of the people, as the Colombian government has done in some regions in recent years to combat the FARC. Such responses should not necessarily generate worse long-term social welfare outcomes. Nonetheless, we frequently observe that governments respond to attacks on their forces through increased security and military measures which, either indirectly or deliberately, can impose suffering on local populations.

A point of departure for us is a point not identified in the provocation literature: the strength of a government response is conditioned on whether budgets are open to renegotiation. If budgets cannot be renegotiated, and sustained deficit spending in response to dissident campaigns is not possible, then the government will be limited to shuffling spending within an existing budget. When budgets can be renegotiated, however, a government is able to rob other sectoral budgets to support security and/or decrease social service budgets as a means of influence over civilians. This leads us to a causal mechanism that can explain correlations between violence against the government and downstream social welfare.8

8Some literature on terrorism in particular examines how governments choose their responses (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.

Outside of a budget period, a government that wants to punish civilians could choose not to spend the
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 international or national level (Mintz 1993, Powell 1993, Skaperdas & Syropoulos 2001, Iqbal 2010). At the international level, the tradeoff may vary based on regime type (Carter & Palmer 2015), the partisan orientation of the government (Whitten & Williams 2011), or the size of the economy (Palmer 1990). Limited scholarship on guns versus butter in middle-income countries parallels these findings on the presence of tradeoffs (e.g., Antonakis 1999). Beyond the guns versus butter tradeoff, a government facing violence may reallocate funds away from butter as a punishment mechanism, even without facing otherwise unfunded security priorities. The prospect of increased future funding can be a carrot to induce civilians to change their behavior and withdraw support for dissidents (Kalyvas 2006).

Because social welfare outcomes and, in particular, health outcomes are a product of many different factors ranging from environmental dynamics to human decisions, whether government spending has significant effects merits consideration. In a review of the literature in health economics, Farahani, Subramanian & Canning (2010) estimate the effects of cross-sectional, public health spending on mortality outcomes in India at the subnational (state) level, using a state’s fiscal deficit as an instrument for spending. They find that a 10 percent increase in state-level health spending decreases the probability of death in the state by 2 percent, with those effects applied primarily to women, youth, and the elderly. We posit that, if Farahani, Subramanian & Canning (2010) are correct that higher health spending leads to lower mortality, the opposite may also be true: lower health spending may be associated with higher mortality rates. Indeed, in the study of interstate conflict, Iqbal (2010) shows the plausibility of observing tradeoffs in favor of defense and to the detriment of public health.

Thus, a causal chain between violence, government response, and welfare outcomes is
plausible. Such a chain of factors can operate quite distinctly from a direct mechanism in which violence has a negative impact on civilians. For a compelling demonstration, we turn to an explicit theoretical narrative of the endogenous government response to dissident violence, several new high resolution data sets, and a novel identification strategy exploiting the timing of attacks and budget negotiations.

3 Theory

Governments with sticky military doctrines and standard operating procedures tend to respond to acts of violence in very similar ways over time, especially in asymmetric conflicts in which institutions are quite stable and learning is slow (Van Evera 2003). We expect that in a state where dissident violence is long-standing and the government has historically responded by returning violence or through other coercive strategies, dissident attacks on government forces likely generate a coercive response.

Resource constraints can reinforce a coercive response. If deficit spending is unavailable, as is true in many conflict-prone developing countries, a government that wants to increase defense spending must reshuffle from other budget sectors.\(^\text{10}\) Budget constraints bite further because raising extra-budgetary funds—via aid, borrowing, or taxation—is difficult. First, donors may exercise significant control over aid resources thereby preventing aid reallocation, especially to security spending (AUTHOR 2016). Second, a developing country government looking to borrow abroad faces sovereign bondholders that scrutinize policy choices and the intended purpose of bond issues, leaving little leeway to spend on risky ventures (Mosley 2003). Third, governments can be creative in raising money through more or less official special taxes, tapping domestic sources as well as foreign investors in their economy (AUTHOR 2015). Such tax increases come with their own knock-on costs,\(^\text{10}\)

\(^{10}\)Notably, 27 national constitutions include provisions requiring a balanced budget, with 22 of these in developing or middle-income countries, including Angola, Mali, and Peru (Elkins 2016). In reality, it is possible that at least some of these balanced budget provisions are not enforced, or that actual spending does not follow the budget. We demonstrate that, for Peru, the provision is binding and spending does follow the budget.
however, through further deterring economic activity in a state in which violent conflict has likely already battered the economy. Finally, even if a government without the ability to deficit spend could quickly collect extra-budgetary funds, it is unlikely that those funds would completely wash out budget constraints—or that they would not themselves be subject to debates about allocation between guns and butter. Moreover, even a government with the legal ability to deficit spend must eventually raise revenue or, ultimately, collapse. Thus, we posit that deficit spending or extra revenue sources do not eliminate the problem of budgetary tradeoffs, even if they can mask or defer tradeoffs for some time.

Our main point of leverage is the budget negotiation period. When budgets are under negotiation, an otherwise constrained government has the ability to make the kinds of budgetary shifts necessary to enable coercive responses to violence.\textsuperscript{11} We hypothesize that anti-government violence that occurs within the budget period will particularly motivate a coercive response. This is because the timing of attacks raises the political salience of a coercive response and enables politicians to immediately facilitate that coercive response. While violence outside of the budget period might also motivate a coercive government response, we posit that motivations for that response erode with an increase in the time between violence and the next budget negotiation.\textsuperscript{12} Moreover, when anti-government violence in the budget period is most surprising—when it follows periods of relative calm—the political expediency of a government response and resulting budgetary shifts may be the greatest.\textsuperscript{13} Thus, we leverage the timing of anti-government violence to isolate budgetary responses.

We compare the effects of anti-government violence during the budget period to the effects of anti-government violence outside the budget period (and not, say, to periods without violence or budget negotiations).

Note that the expectation that anti-government violence in the budget period motivates

\textsuperscript{11} Relative budgets for other sectors may decline, although absolute spending may not, if offset by overall budget growth.

\textsuperscript{12} In the Appendix, we use survey evidence to identify that in Peru, a popular rally around the flag response to dissident violence is time-delimited.

\textsuperscript{13} When violence is not surprising, perhaps because it happens regularly over time, one might expect new shifts in budgets to be muted.
politicians’ immediate responses via budget changes rests on a few priors. First, budget negotiations must be time-delimited. Second, dissident violence against the government must be exogenous to the timing of budget negotiations. Third, we must be able to account for any direct effects of anti-government violence on civilians. In our research design below, we discuss how the situation in Peru fits these criteria.

Because we are able to explore the downstream effects of violence on health, we center our expectations on this relationship. Since the provision of services is most salient at the local level, we examine the effects of violence against the government (and not civilians) on local health budgets. We hypothesize:

**Hypothesis 1** *Violence against the government during budget negotiations leads to decreases in health budgets and spending in those localities where violence occurred (relative to violence outside of budget negotiations).*

A government’s coercive response to dissident violence can have direct and indirect deleterious effects on local populations. We focus on how indirect effects can result from budget constraints. Cannibalizing social service budgets to augment defense, or withholding social service spending as a punishment in itself, makes social service provision suffer. Given that government social spending has at least some efficacy, the absence of it will hurt social welfare outcomes. We expect rapid reductions in health budgets to inflict harm on local populations, because citizens who are benefitting from those services are suddenly unable to do so any longer as clinics cut back services or close altogether. Tragically, Farahani, Subramanian & Canning (2010) show that infant health is particularly elastic to health spending. Indeed, Pumper & Neumayer (2006) find that women and children bear the largest costs of war, which implies that health budget decreases affect them directly. We thus link decreases in health budgets to expectations about infant mortality:

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14 Below, we also conduct some inquiries into the relationship between violence and environment and culture spending.

15 Even if the spending is not actually welfare-improving, it may still be politically expedient and thus cutting it would have deleterious effects on politicians’ fortunes. In our analysis, we establish that cutting social service funding in Peru, and specifically health funding, indeed has deleterious downstream effects.
Hypothesis 2 Decreases in local health budgets and spending should lead to higher local infant mortality (relative to localities in which health budgets and spending do not decrease).

Taken together, Hypotheses 1 and 2 establish the full causal chain under investigation: anti-government violence leads to budgetary reallocations away from social services and, in turn, those budgetary changes have real consequences for social welfare.

Hypothesis 3 Violence against the government during budget negotiations leads to higher infant mortality in those localities where violence occurred (relative to outcomes when violence occurs outside of budget negotiations).

4 Research Design

To evaluate these hypotheses, the analytical challenge is to show that anti-government violence translates into reduced health budgets, which has downstream deleterious effects on social welfare. In the first stage, we investigate the independent effect of anti-government violence on budgeting decisions. In the second stage, we estimate the longer-term implications of these budgeting decisions on downstream social welfare, particularly infant mortality. In the process, we establish that the Peruvian government is choosing a coercive response rather than than a hearts and minds approach.

4.1 Case Selection and Background

We choose to study subnational effects in Peru for a number of reasons. First, our causal mechanism should be clearest in the presence of hard budget constraints\(^{16}\) Usefully, Peru has a constitutional balanced budget provision. How credible is that budget constraint? In the period for which we have data (2008–2012), the budget constraint is hard; Peru averaged

\(^{16}\)The budget mechanism likely operates under extra-budgetary or deficit spending, though it may be masked or delayed.
a budget surplus of 0.96 percent of GDP.\textsuperscript{17} The budget surplus corresponds with high levels of GDP growth in the period; although growth fell to 1 percent in 2009, it averaged 7.5 percent in 2008 and 2010–2012 (\textit{World Bank World Development Indicators} 2016). Note that if GDP growth allowed Peru to increase all budgets, then it would be more difficult for us to find evidence of budgetary tradeoffs as hypothesized.

Although Peru is a unitary democracy, it has undergone decentralization and therefore shares some features of a federal democracy. There are 24 departments in Peru, as well as one special administrative unit, Callao.\textsuperscript{18} Hallerberg & Marier (2004) find that presidential, unified governments are more likely to have “substantial strategic powers for all parts of the budget process” and smaller budget deficits (578–579), whereas Wibbels (2000) finds that federalism can disrupt the center’s ability to impose fiscal discipline on subnational governments. Usefully for our purposes, Peru’s budgeting remains quite centralized.\textsuperscript{19} The national budget allocates resources to Peru’s departments, and most spending is implemented through the ministries in Lima and their regional offices in each department.\textsuperscript{20} This bureaucratic structure increases our confidence that the center does not treat budget allocations as fungible across departments. Still, it is possible that the defense budget is somewhat fungible, because the defense budget operates through opaque procedures within the military chain of command. Our data on departmental budgets make it easier to see cuts to departments’ access to social services in the wake of violence, but they do not necessarily elucidate changes in departments’ access to defense funding.\textsuperscript{21}

Our identification strategy relies on the fact that Peru has a time-constrained budget

\textsuperscript{17}Peru had a deficit only in 2009, of 1.14 percent of GDP, and a maximum surplus of 2.12 percent of GDP in 2008 (\textit{World Bank World Development Indicators} 2016).

\textsuperscript{18}Located just outside Lima, and only 56 miles in area, Callao has a departmental government that functions similarly to the other regions. We exclude Callao from analysis where the data do not include it.

\textsuperscript{19}The balanced budget provision in Peru’s constitution also constrains subnational departments’ ability to run deficits.

\textsuperscript{20}Some non-programmatic funds, for example related to mining, are transmitted directly to local governments.

\textsuperscript{21}Despite our best efforts, we are not able to link outcomes of military spending, like troop placement and movements, to changes in particular departments’ budgets. Such data are not available for public collection or use.
process. The key player in the budget process is the National Office for the Public Budget (DNPP) within the Ministry of Economics and Finance (MEF). The DNPP independently produces a draft budget between April and July each year. The Congressional budget committee was eliminated in 1993. Since then, Congress’s power has been limited to asking for line-item changes to the draft budget, which nonetheless gives them the ability to reallocate funds. Congressional review takes place during a strict window from September through November. It is in this window that members of Congress have the ability to reallocate resources to defense at the expense of social spending or simply away from social spending. The budget is required to be finalized by 30 November. At this point, there is nothing a member of Congress can do to reallocate budgets other than wait until the following year’s budget period. Thus, the September through November window is key to our identification strategy. The president signs the budget law in early December.22

Sadly, Peru has experienced persistent dissident violence, although, importantly, this violence has not targeted civilians in the period for which we have data (2008–2011). Peru has faced violence from Sendero Luminoso (Shining Path) since its founding in 1980 as a Communist, Mao-inspired militant group. The Shining Path once carried out terrorist attacks against civilians in addition to fighting the Peruvian military, police, and paramilitary units. However, 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

\footnote{The President does have the ability to independently appropriate funds outside of the formal budget through the use of “urgent decrees” (decretos de urgencia), which bypass Congress completely. Presidents typically use these for issues like generic economic stimulus through deficit spending as well as public emergencies and safety. If the president always used extra-budgetary decretos de urgencia to put more funds into defense in response to dissident violence, we would not see shifts in budget allocations and/or actual spending. Our findings demonstrate empirically that decretos de urgencia do not wash out budgetary tradeoffs.}
of coca production in Peru by motivating movement across the border, such that Peru is
now the largest producer and exporter of coca (United Nations Office on Drugs and Crime).
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 and drug
runners, with the expressed goal of eradicating what the government characterizes as a
“subversive” organization. This violence does not include civilian targets and thus does not
have a direct effect on civilian welfare. We exploit contemporary acts of violence by Shining
Path guerrillas against government soldiers, in particular, instances when government soldiers
are killed.

Also since the 2000s, Peru has experienced mining-sector related conflict in rural areas.
Some small, artisinal gold mining operations do take place in territory controlled by the
Shining Path. However, the anti-government violence of the Shining Path and unrest around
mining are distinct phenomena. When local communities clash with mining corporations, the
police sometimes become involved as clashes escalate, and the military has been deployed in
response to states of emergency in the mining sector. However, soldiers have not been killed
as a result, and violence around mining clashes has not targeted government forces. Thus,
mining clashes should not motivate government budgeting in the way we outline above. To
confirm this, we show in the Appendix that mining protests, whether in or out of the budget
period, do not affect our results.

In sum, balanced budget provisions, the time-constrained budget process, and anti-
government (not civilian) violence make Peru an optimal setting in which to examine evidence
of budget-driven social welfare consequences of dissident violence. Additionally, democratic
practices in Peru underpin the idea that elected officials have the ability to reallocate budgets.
4.2 Identification and Estimation

During the period for which we have violence data (2008–2011), there were 86 soldiers killed by Shining Path attacks, of which 35 casualties occurred during budget periods. Casualties per department-year range from 0 to 22, and casualties only in the budget period range from 0 to 12. Casualties took place in seven of Peru’s 24 departments. Our analysis leverages variation in casualties and budgeting over time in those seven departments, as well as the lack of variation in the remaining departments that did not experience casualties in the study period.

We intend for our approach to be internally valid and also provide results that apply to the active and inactive parts of Peru. Put differently, in a counterfactual world in which the Shining Path had a national campaign of violence against government forces, the average effects that we estimate would apply throughout the country. Thus, we examine whether there are systematic differences across the kinds of departments that did and did not experience soldier casualties. Table 1 notes several potentially important dimensions. Departments with casualties are substantially poorer (about 50%) in terms of GDP per capita, but they are otherwise generally similar to departments without casualties. Accordingly, we control for GDP per capita in all our regressions. We also note attendant limits to generalization—for example, a wealthy department might be able to generate private spending to offset the budget effects we identify.

To leverage soldier casualties, we must satisfy an important identifying assumption: dissidents in a given department do not strategically choose to kill soldiers based on the budget negotiation timeline. One way to test for this kind of strategic behavior is to look at the average number of dissident attacks that result in soldier fatalities by month and see whether there is a significant increase or decrease at the beginning (September) or end (November).

23Departments affected by Shining Path violence experienced on average 1 soldier fatality during the budget period (standard deviation of 2.4), and an average of 2.5 total casualties per year (standard deviation of 4.7). Casualties were recorded in Apurimac, Ayacucho, Cusco, Huancavelica, Huanuco, Junin and San Martin departments during the study period.
Table 1: Departments with soldier casualties are poorer but otherwise similar

<table>
<thead>
<tr>
<th>Department w/soldiers killed by Shining Path</th>
<th>GDP per Capita (ln) (1)</th>
<th>Population (100K) (2)</th>
<th>Defense Budget Share (3)</th>
<th>Health Budget Share (4)</th>
<th>Infant Mortality (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department w/soldiers killed by Shining Path</td>
<td>-.69*** (.18)</td>
<td>-.38 (.44)</td>
<td>-.91 (.69)</td>
<td>1.11 (1.16)</td>
<td>1.87 (5.18)</td>
</tr>
<tr>
<td>N</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
</tbody>
</table>

*** p<0.01

of the budget negotiations (See Figure 1). Importantly, there is no sorting along the budget negotiation process (that is, there are not clear discontinuities between months 8–9 and months 11–12). However, it appears that there may be a small increase in the average number of fatal attacks toward the end of the year, and soldiers killed during the budget period could be related to this trend. To guard against this confounding, we include a count of soldiers killed during the pre-budget period (January through August) as a covariate in our regressions. This covariate also helps us guard against the potential confounder that dissidents are strategically selecting in which years to carry out attacks during the budget period.

We use a two-way fixed effects specification that accounts for departments and years. This approach leverages variation from the mean in our independent and dependent variables within departments over time and across departments in a given year. Though we have a relatively small number of departments and a short panel, we are confident in our use of two-way fixed effects. First, Wooldridge (2010) establishes that fixed effects estimators are unbiased and consistent (with respect to the main parameter) for any number of fixed effects (303). Second, we acknowledge that at one time, a “rule of thumb” in time series analysis was that having more than one regressor per 10 observations would result in bias. Fortunately, Wooldridge (2010) establishes that fixed effects are merely nuisance parameters that could even be omitted by mean-centering rather than fitting the parameters in OLS.

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24 Our results are robust to using a dummy rather than a count.
Thus, we are confident that our conservative two-way fixed effects approach is unbiased and appropriate. One point of concern is that relatively small number of clusters (24) in our analysis could make clustered-robust standard errors insufficiently conservative. Therefore, as recommended by Angrist & Pischke (2008), we show in the Appendix that our results are maintained after using a bias-reduced linearization (BRL) (McCaffrey & Bell 2002).

For the first stage we estimate, using OLS:

\[
X_{it} = \gamma_1 Z_{it-1} + \gamma_2 W_{it-1} + \gamma_3 G_{it} + \gamma_4 D_i + \gamma_5 Year_t + \epsilon_{it}
\]

where \(X\) is the health budget share in department \(i\) in year \(t\), \(Z\) is the count of soldiers killed in the department in last year’s budget period (September to November), \(W\) is the count of soldiers killed in last year’s pre-budget period (January to August), \(G\) is the department’s GDP per capita, \(D\) is a vector of department dummies, \(Year\) is a vector of year dummies, and \(\epsilon\) is the error term.
We then fit the second stage, using OLS:

\[ Y_{it+1} = \beta_1 \hat{X}_{it} + \beta_2 W_{it-1} + \beta_3 G_{it} + \beta_4 D_i + \beta_5 Year_t + \epsilon_{it} \]

where \( Y \) is the infant mortality rate in department \( i \) in year \( t+1 \), and \( \hat{X} \) are the fitted values from the first stage.\(^{25}\)

Even if the first stage is well identified, in order for the two-stage estimates to be valid we must satisfy the exclusion restriction: the exogenous variable in the first stage cannot affect the outcome of the second stage through any channel other than the posited one. In our case, the identifying assumption is that dissident violence that kills government soldiers does not affect infant mortality in Peru via any mechanism besides government health spending. We substantiate this below by ruling out other possible channels, in particular, the potential that insecurity in a department could affect its residents' use of health facilities.

### 4.3 Data

Our violence and budget data cover 2008–2011, and our health outcome data cover 2009–2012. See Appendix Table 1 for summary statistics. To measure dissident violence, we introduce new data from Peru’s *Defensoría del Pueblo*, an independent government agency that, among other things, tracks social and political violence. Importantly, this includes not only open-source data but also data collected directly via local *Defensoría* offices in each of Peru’s departments. Since 2007, the *Defensoría* has released consistent monthly reports on social conflict in Peru, such as conflicts between communities and mining companies (AUTHOR 2016). Since 2010, these reports have also included incident descriptions on “subversive” violence by dissidents from the Shining Path. We code the number of soldiers killed in these incidents by department-month to form our key explanatory variable. Extreme violence that produces military casualties is most likely to cause shocks to the budgeting

\(^{25}\)In the Appendix, we report results using a hurdle model.
process. Examining violence against the military is also important because there are no
direct effects on civilians; thus any negative social welfare outcomes from violence occur
through the government’s response.\textsuperscript{26}

In addition to the Defensoria, the Peruvian National Police (PNP) and Peru’s National
Intelligence Directorate (DNI) collect and publish aggregate figures on terrorist violence,
which we use to further validate our data. We find that while the different agencies have
distinct definitions for what qualifies as a terrorist incident, the discrepancies are restricted
to non-violent events.\textsuperscript{27} Fortunately for our analysis, we are focused on violent events that
produce soldier casualties, which are the most heavily reported and least likely to be missed.
Even if there were to be measurement error in the Defensoria data we use, this would bias
our estimates toward zero; this would imply that the estimates we recover could in fact
underestimate the magnitude of the effect.

Data on government budgeting are from the World Bank’s Open Budgets Portal, which
provides access to subnational budget and spending data for a growing number of developing
countries (\textit{World Bank BOOST Data for Peru 2016}). These data are measured annually for
each of Peru’s departments, and they include both budget allocations and final spending
by sector, including health, defense, education, environment, transportation, and culture.
On average across the departments, 91 percent of health budget allocations (and 94 percent
of defense allocations) are actually spent.\textsuperscript{28} We divide each sectoral budget by the overall
departmental budget to compute the budget share dedicated to the sector.\textsuperscript{29}

\textsuperscript{26}The Global Terrorism Database (the only resource for Peru that codes violence against civilians) reports
just two incidents of terrorism against civilian targets during the time period under study, with zero reported
civilian casualties, thus precluding the possibility of direct effects of violence on social welfare outcomes.
Results are robust to including consideration of mining protests in the period that caused unrest. See
Appendix. Furthermore, a manual inspection of the reported terrorist incidents in our database indicates
that casualties that might otherwise be considered ‘civilian’ were in many cases regarded in government and
media reports as being Sendero members or affiliates.

\textsuperscript{27}For example, for non-violent incidents in 2008, the Defensoria reports 31, the DNI reports 247 and the
PNP 50.

\textsuperscript{28}We present results both using budget allocations and actual spending levels, which are useful for under-
standing predicted effects.

\textsuperscript{29}For 15 of the 100 department-year observations, there is no defense spending reported in the data. In
the main results we assume that this means there is zero defense spending in that department-year.
We use department-level infant mortality as our second-stage dependent variable. The data come from annual waves of USAID’s Demographic and Health Survey (DHS) in Peru (INEI 2009–2012). The DHS surveys use standard World Health Organization procedures for measuring infant mortality and for sampling, which makes estimates comparable across departments. We calculate the reported incidence of infant mortality per reported childbirths in each department-year. It is unfortunate, but statistically useful, that infant mortality rates are relatively high and varied across Peruvian departments as compared to other health indicators. This means that even with the small DHS survey samples per department, we can obtain reasonably precise estimates. We also use DHS surveys to test the mechanism that reductions in women’s use of health facilities and prenatal services lead to higher infant mortality. See Appendix for summary statistics.

5 Results

We begin by showing the first stage average effect of the count of soldiers killed in the budget period on health budgeting as well as health spending. Table 2 shows that the health budget share in the average department falls as more soldiers are killed in the budget period, with a coefficient of -0.13; the 95% confidence interval goes from -0.01 to -0.25. From a baseline of 12.3% average budget share for health, this translates into approximately a 1.1 percent decrease in the health budget share per soldier killed in the budget period. The results for health spending share are nearly identical, which makes sense given that on average 91% of health budgets are actually spent. Results are robust to either bivariate or full specifications.

Given the expected relationship between soldiers killed and health budgets and expenditures, we now consider both stages in order to explicitly capture the extended effects of decreases on health outcomes. We use soldiers killed in the budget period (t-1) as an instrument for health budget share (t). We expect a negative relationship between the instrumented health budget/expenditure and infant mortality in the following year (t+1). The

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30The INEI, or Instituto Nacional de Estadistica e Informatica, is Peru’s national statistics agency.
results in Table 3 show that for each 1 percentage point reduction in departmental health budget share, infant mortality increases by about 23 per 1,000 live births (90% confidence interval ranges from -2.9 to -43.0 per 1,000 live births). Effect sizes are on par for spending. These results are dramatic. Compare them, for example, to the world average infant mortality rate of 49.4 per 1,000 (United Nations). In our sample based on DHS data, the average infant mortality in a Peruvian department is 18.1 per 1,000. Thus, the reduction in the department’s health budget allocation resulting from one soldier killed implies 74 infant deaths two years after the violence; these deaths would not have otherwise occurred.
Table 3: Soldier casualties indirectly increase infant mortality

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Infant Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Instrumented) Health budget</td>
<td>-22.90* (12.17)</td>
</tr>
<tr>
<td>(Instrumented) Health spending</td>
<td>-20.18** (9.98)</td>
</tr>
</tbody>
</table>

N  72  72  
Departments  24  24  
First Stage F-stat  244.9  174.0  
First Stage F-stat (no FE)  9.8  8.5  
Controls  Yes  Yes  

Department and Year fixed effects, SE clustered by department.  
* p<0.1, ** p<0.05
5.1 Mechanisms: Access to Women’s Health Services

We turn to several mechanisms that elucidate how the relationship between soldiers killed and government budgeting affects infant mortality. First, we demonstrate that in the year in which reduced budgets go into effect, women’s usage of government health services, including postnatal services, declines. Second, in a two-stage regression we connect reduced women’s health access to increased infant mortality. In the Appendix, we show that poor women in particular suffer when reduced budgets are implemented. Taken together, these results show how decreased health budgets translate into increased infant mortality.

Table 4 shows the effect of a soldier killed in the budget period on the share of women who report visiting a healthcare facility the following year when the budget is implemented (DHS). We see that for each soldier killed, there is a 2.5% reduction in health facility visits overall. Additionally, the share of new mothers who report having postnatal care attended by a doctor or nurse goes down. The effect is statistically significant but more modest: a soldier killed causes a 0.4% reduction.

Table 4: Soldiers killed in the previous year’s budget period reduce women’s health services usage

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Health Facility (1)</th>
<th>Postnatal (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soldiers killed in budget period (count)</td>
<td>-.025** (.007)</td>
<td>-.004** (.001)</td>
</tr>
<tr>
<td>Department GDP per capita</td>
<td>.313 (.430)</td>
<td>.052 (.166)</td>
</tr>
<tr>
<td>Soldiers killed pre-budget period (count)</td>
<td>-.006 (.007)</td>
<td>.000 (.001)</td>
</tr>
</tbody>
</table>

Health Facility: Among all women, visit to health facility in past 12 months (DHS).
Postnatal: Postnatal visits to government health facilities attended by a licensed health officer (doctor, obstetrician, or nurse) for births in last 12 months (DHS).
Department and Year fixed effects, SE clustered by department.
** p<0.05.
Table 5 shows the implications of this lost access on infant mortality. The analysis here uses budget-period casualties (t-1) to predict women’s health visits (t) and the relationship with infant mortality (t+1, or approximately during the infant’s first year). We learn that for each percentage point of lost access, the infant mortality rate is estimated to increase by 19 per 1,000 — which would represent nearly a doubling of the national average in Peru. For attended postnatal care the effect sizes are again significant but smaller, with a one percentage point drop in access resulting in a 1.6 per 1,000 increase in infant mortality.\footnote{Note, however, that these are not entirely independent effects, as some of the women who are experiencing reduced access are indeed new mothers.}

Our estimates in the Appendix suggest that, among women, the burden of reduced budgeting for health is primarily borne by the poorest.

Table 5: Reductions in women’s health visits increase infant mortality over the following year

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Infant Mortality (t+1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td>(2)</td>
</tr>
<tr>
<td>(Instrumented) Health facility visits</td>
<td>-1943.39**</td>
</tr>
<tr>
<td></td>
<td>(1282.10)</td>
</tr>
<tr>
<td>(Instrumented) Postnatal visits</td>
<td>-156.92***</td>
</tr>
<tr>
<td></td>
<td>(43.99)</td>
</tr>
<tr>
<td>N</td>
<td>72</td>
</tr>
<tr>
<td>Departments</td>
<td>24</td>
</tr>
<tr>
<td>First Stage F-stat</td>
<td>17.6</td>
</tr>
<tr>
<td>Controls</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Among all women, visit to health facility in past 12 months (DHS). Postnatal visits to government health facilities attended by a licensed health officer (doctor, obstetrician, or nurse) for births in last 12 months (DHS). Department and Year fixed effects, SE clustered by department. ** p<0.05, *** p<0.01.
### 5.2 Insecurity as an Alternative Explanation?

Our goal has been to satisfy the exclusion restriction, such that any effect of soldier casualties on health outcomes operates through the budget and not through some other mechanism. One worry might be that soldier casualties auger an insecure environment, and it is because of that insecurity that women choose not to access health services at previous rates and infant mortality goes up. We address this concern with survey data from LAPOP, examining whether soldier casualties affect respondents’ perceptions of security. We find in Table 6 that soldiers killed in the budget period have no significant effects on respondents’ propensity to report that security, terrorism, or crime are problems in their daily lives. This finding is consistent with our expectation that, since Shining Path violence is directed against government and not civilian targets, it should not affect civilians’ average perceived security. This provides additional evidence that the effects we observe are operating through the budget pathway.

**Table 6: Evidence that soldiers killed does not affect citizens’ perceptions of security**

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>“Security is a problem”</th>
<th>“Terrorism is a problem”</th>
<th>“Crime is a problem”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soldiers killed in budget period (count)</td>
<td>.0025 ( (0.0015) )</td>
<td>-.002 ( (0.0013) )</td>
<td>-.004 ( (0.004) )</td>
</tr>
<tr>
<td>N</td>
<td>46</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>Departments</td>
<td>23</td>
<td>23</td>
<td>23</td>
</tr>
</tbody>
</table>

Department and Year fixed effects, SE clustered by department.
Controls: Pre-budget violence, GDP per capita

Further, we conduct placebo tests that support our argument, showing that soldiers killed in December do not affect budgets, and that health budgets do not explain infant mortality in the previous year (see Appendix).
5.3 Why Decrease Health Budgets?

Given the detrimental health effects of reduced budgets, can we explain why the Peruvian Congress and the Ministry of Finance respond to soldier casualties by reducing health budget shares and spending? We have discussed how coercive strategies can take two main forms. In the “guns versus butter” alternative, a department’s health budget is cut because the government seeks to reallocate additional resources to combat a perceived increase in security threats. As such, decreases in health budgets would be associated with increases in defense budgets. If, however, the civilian population is blamed for colluding with the dissidents, the government may punish a department with reduced social services appropriations regardless of whether the resources are purposively shifted for other causes.

Are there any observable implications that can provide evidence for or against each account? One point of leverage is how surprising soldier casualties in a department may be to the government. If a department has not had a recent history of casualties, soldier casualties in the budget period may lead politicians to perceive that defense in the department is underfunded. This suggests that the more unexpected soldier casualties are, the more the government will see a need for shifting butter to guns. In contrast, politicians budgeting defense spending for habitually violent departments may not (so dramatically) trade off butter for guns. Thus, to the extent that we see large shifts away from health and into defense following unexpected casualties, we can have more confidence in the guns versus butter account.

We examine this logic in Table 7. Here, we include covariates that count (1) soldiers killed in the budget period (September-November), and (2) soldiers killed in the pre-budget period (January-August). We then interact these covariates to get at results of interest. Note that, in these specifications, the direct effect of soldiers killed in the budget period is to increase defense budgets (column 1) and decrease health budgets (column 2). To understand the interactive effect, see Figure 2. When there were no attacks in the department earlier in the year, each soldier casualty during the budget period drives about a 1% increase in
defense spending and a nearly 2% decrease in health spending. These effects are consistent with a simultaneous shift from butter to guns. Where there were any casualties earlier in the year, however, these effects become indistinguishable from zero. Put differently, we cannot detect simultaneous shifts into guns and out of butter when casualties are less surprising. These tests establish some evidence consistent with the story that Peru’s budgeting decisions are motivated by guns versus butter tradeoffs.

Table 7: Soldiers killed in budget period increase defense spending when casualties are unanticipated

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Defense budget share (1)</th>
<th>Health budget share (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget (count)</td>
<td>.11**</td>
<td>-1.18***</td>
</tr>
<tr>
<td></td>
<td>(.05)</td>
<td>(.06)</td>
</tr>
<tr>
<td>Pre-budget (count)</td>
<td>-1.30</td>
<td>-.85</td>
</tr>
<tr>
<td></td>
<td>(.80)</td>
<td>(1.17)</td>
</tr>
<tr>
<td>Budget * Pre-budget</td>
<td>-.21*</td>
<td>.38**</td>
</tr>
<tr>
<td></td>
<td>(.11)</td>
<td>(.14)</td>
</tr>
<tr>
<td>Department GDP per capita</td>
<td>-5.17</td>
<td>6.50</td>
</tr>
<tr>
<td></td>
<td>(6.42)</td>
<td>(9.08)</td>
</tr>
</tbody>
</table>

N 96 96
Departments 24 24

Department and Year fixed effects, SE clustered by department.

** p<0.05

Nonetheless, even if guns versus butter tradeoffs sometimes shape Peru’s budgeting decisions in this period, reductions in social services may still be consistent with a punishment mechanism. Certainly, local populations may perceive them as such. For more evidence of the extent of the costs of budgetary allocations in the wake of violence, see Table 8. Here, we show that social spending cuts are not restricted to the health sector. Our data allow us to examine budget shares allocated to each department for the environment and culture. Like the health sector, budgeting and spending in these sectors is run via the relevant Ministry and its regional office in each department. Table 8 shows that budget-period casualties result

33The evidence even points to increases in health budgets, though the effect is not significant.
Figure 2: Marginal effects for soldiers killed, varying by pre-budget soldier casualties.
in significant cuts to environmental budgets, as well as substantive (though statistically insignificant) cuts to culture budgets. If we had downstream data on environment and culture 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 8: Soldiers killed in the budget period reduce other social service budget shares

<table>
<thead>
<tr>
<th>Dependent variable:</th>
<th>Environment budget share</th>
<th>Culture budget share</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Soldiers killed budget period (count)</td>
<td>-.04** (.02)</td>
<td>-.03 (.03)</td>
</tr>
<tr>
<td>Department GDP per capita</td>
<td>.15 (.22)</td>
<td>-.09 (.19)</td>
</tr>
<tr>
<td>Soldiers killed pre-budget period (count)</td>
<td>-1.94 (1.83)</td>
<td>-.85 (2.52)</td>
</tr>
</tbody>
</table>

N 96 96
Departments 24 24

Department and Year fixed effects, SE clustered by department.
** p<0.05

Finally, in the Appendix we provide evidence that soldier casualties carry electoral costs; that a rally around the flag effect follows recent soldier casualties; and that men’s health facility usage is not as sensitive as women’s.

6 Conclusion

We use evidence from Peru to show that short-term security concerns in the aftermath of dissident attacks that kill government soldiers can provoke budgetary realignments away from social services. These transfers have negative effects for downstream social welfare. On average, a single soldier casualty in a department results in cuts to the health budget that, in turn, generate around 74 additional infant deaths two years later. We provide evidence that the increase in infant mortality is correlated with a reduction in women’s reported utilization
of health services. Peru’s government might cut health budgets to punish local dissidents and the populations that support them, but we also find some evidence that the government moves resources from butter to guns.

In contrast to findings about the direct effects of violence on social welfare, we show here that the effects of violence may be indirect and depend critically on government decisions regarding how to react. This finding is important, because it suggests that deleterious social welfare effects are potentially avoidable. While our analysis therefore has implications for domestic governments, we also see a role for international actors. Ideally governments would internalize these indirect effects of budget cuts to social welfare. Even when political realities dictate that spending on security increase, emergency support to critical social spending could be re-packaged as a required corollary. But given the reality of social spending cuts in the wake of violence, international development assistance organizations and non-governmental providers may need to help fill in the gaps in otherwise standard budgetary areas instead of focusing solely on humanitarian assistance. Additionally, when domestic political realities incentivize the government to coerce civilians or discredit dissidents through targeted budget reductions, donor pressure might aid in pushing governments to recognize the long-term costs of such strategies.

To what extent are these results specific to Peru? We posit that similar effects are most likely to be uncovered in places where dissident violence against the government intersects with reasonably binding budget constraints. Angola and Mali fall in this category, as do other sub-Saharan African states including Burkina Faso, Ivory Coast, Mauritania, and Niger. In Latin America, El Salvador and Nicaragua are relevant. Morocco, Egypt, Gabon, Ghana, Serbia and Ukraine are other states with constitutional balanced budget provisions that may sometimes be binding, especially in the face of sudden security threats. Moreover, shifts in government priorities in response to violence likely affect non-security spending and downstream social welfare outcomes even in places without hard budget constraints, although those effects may be masked or delayed by deficit spending.
Ultimately, this paper draws attention to the pivotal role of governments in mediating the effects of violence on broader social welfare. Past literature has largely considered the immense toll that war takes on civilians, but has neglected this indirect pathway via budgeting. And yet this pathway is worth serious future investigation because it suggests that broader negative welfare effects are not inevitable. Indeed, governments or other international actors may play key roles in mitigating the long-term deleterious effects of violence.
References


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