State Capacity and Armed Civil Conflict:

Evidence from the decade-long Civil War in Nepal

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Abstract

Utilizing the Civil War in Nepal which lasted from 1996 to 2006, this paper addresses two issues: First, civil conflicts predominantly occur in weak states, which are states that lack state capacity, however, it is unclear why not all weak states experience civil conflict. Second, political stability and unequal distribution of resources are opposing forces that are unlikely to coexist together. Nevertheless, cross-country literature on civil conflict finds little relationship between conflict and the unequal distribution of resources. I use an exogenous shock—the massacre of the King and ten other members of the royal family in 2001 in Nepal—to identify the variation in conflict before and after 2001. Whereas the conflict in Nepal was isolated and sparse in the pre-2001 period, it immediately escalated and became more pervasive in the aftermath of the massacre. Employing a difference-in-differences framework, by comparing the Maoist insurgency in Nepal with that in India, I find a six-fold increase in conflict outcomes in the period after the massacre relative to the period before. While the massacre provided the opportunity for conflict, mass armed conflict would have been unlikely without a motive. In the post-massacre period, I find that conflict outcomes at least doubled in districts with unequal distribution of land relative to more equal districts.

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1 Introduction

There were 14,982 deaths during the recently concluded (1996-2006) Civil War in Nepal. Whereas in the five-and-half years before June 1^{st}, 2001, the conflict was both isolated and sparse, in the five-and-half years after, the conflict became both pervasive and high voltage.[1] The reason for this increase in the intensity of conflict was the massacre of the King and ten members of the royal family. This exogenous shock decreased state capacity and in particular legitimacy. Loss of legitimacy provided the opportunity for the increased violence. This accident was responsible for a 6-fold increase in both conflict intensity and frequency. In the period with high voltage conflict, I also find that economically unequal districts had twice as much conflict relative to more equal districts.

There is some consensus in the literature that certain types of states are prone to conflict relative to others. On the other hand, the literature is undecided on the role of the distribution of economic resources on conflict. I add to the literature by providing empirical evidence towards both using the recently concluded Civil War in Nepal. In the case of the former, I agree with the literature and add to it by providing evidence that *legitimacy*—a dimension of state capacity—is an important factor towards the opportunity or dis-opportunity for conflict. Legitimacy is one reason why not all economically weak states are constantly in conflict. For the case of economic distribution and conflict, I argue that the use of state-specific institutional history and the design of the empirical study could aid in generating more consistent results. Using the exogenous shock, I find that the distribution of economic resources, and not the level of economic outcome, was important for explaining the conflict outcomes of the Civil War in Nepal.

In what follows, I will first make the case for institutions and state capacity as being of central importance for studies related to conflict; second, I will discuss the important findings in literate on armed civil conflicts; and third, I'll relate these concepts and findings to frame the empirical study of the civil conflict in Nepal.

[1] Only 12 percent of the total deaths during the 1996-2006 civil war occurred in the period before June 1st, 2001. This period can be seen as an *insurgency* as opposed to a full-scale conflict. Fearon and Laitin (2003) describe insurgency as "a technology of military conflict characterized by small, lightly armed bands practicing guerrilla warfare from rural base areas."

1.1 Institutions, State Capacity, and Conflicts

State capacity and legitimacy are functions of institutions in any society (see Williamson 2000 for various levels of institutional economics and how they are co-related). "Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction" (North 1990). Institutions reduce uncertainty in the environment, and importantly, this is achieved by the "intentionality of the players" (North 2005). That is to say, the environment imposes uncertainties—which can be, among other things, risks of violence, lack of information, transaction costs, coordination problems, monitoring and enforcement costs, and protection of property rights; institutions are chosen to mitigate these perceived risks.

Institutions help facilitate social interactions, and with it, social cohesion and stability; that is, they preserve social order and reduce conflict within a society. If institutions are an important source of social stability, then any analysis that deals with instability within a state ought to make the study of institutions its central thesis.

Conflicts can be seen as a mode of change from one institution to another, or from one set of socio-political equilibria to another. The nature and scale of this change are dependent on how *adaptive* the underlying institutions are. Institutions that can easily adapt through feedback from its organizations and players, change incrementally, and avoid high-voltage conflict. On the other hand, institutions that do not easily adapt can bring about abrupt and violent changes.

Whereas institutions provide the rules for the game, the state provides the "play" or the contracts that align governance with transactions.[2] The state, according to Weber (1918), is a "human community that (successfully) claims the monopoly of the legitimate use of physical force within a given territory."

The discussion on civil conflict has revolved around the notion that a "weak state" – that is, a state that cannot monopolize violence – is an antecedent of mass violence. In the economic literature, a weak state is considered as a state that lacks resources to tax its citizens (fiscal capacity) or police its boundary (military capacity). A broader definition of the strength and weakness of the state by Skocpol (1985) provides four dimensions that can be used to quantify the capacity of the state: (i) *extractive capacity*, the capacity to mobilize financial resources; (ii) *steering capacity*, the capacity to guide national socio-economic development;

[2]Williamson (2000) defines four levels of institutional economics including institutions in level II and governance in level III and the interaction between them.

(iii) *legitimate capacity*, the capacity to dominate by using symbols and creating consensus; and (iv) *coercive capacity*, the capacity to dominate by the use or threat of force.[3] Weak states are defined as a function of (or lack thereof) the above-listed state capacities.

Coercive and extractive capacities are more responsive to short-term financial investments; that is, they can be enhanced using these monetary tools (see Besley and Persson 2010; Cárdenas and Tuzemen 2010). On the other hand, legitimacy requires relatively longer-term investment and is influenced by social, cultural, political, as well as economic aspects. Legitimacy perhaps can be thought of as exogenous in the short-term. It is also important to note that while the former depends on the wealth of nations, the latter necessarily need not. Perhaps, it is precisely this reason that we do not observe violent civil conflict in all economically underdeveloped states – that is states which lack fiscal and military capacities. Since a majority of civil conflicts occur in economically underdeveloped states, it is important to distinguish nations that have civil conflict and are economically underdeveloped from those that do not have civil conflict but are also economically underdeveloped. Among other things, the broader definition of state capacity aides this purpose.

1.2 Armed Civil Conflict

It is important to stop here to provide a formal definition of conflict. A "high-voltage" conflict has the following features: first, there exists fighting between two or more groups within the political boundaries of the state; second, there are at least 1,000 deaths directly related to the conflict in the overall period of conflict with a minimum of 100 annual deaths; and third, at least 100 individuals are killed on all sides of conflicting groups.[4] In what follows, I've used intra-state conflict, civil war, civil conflict, conflict, and violence interchangeably. Unless otherwise noted they refer broadly to the definition outlined here.

[3]Additionally, Skocpol (1979) discusses the important role of geopolitics in the nature and capacity of states. There is enough evidence to suggest that international geopolitics, and especially the political outcomes in India, has affected politics in Nepal in the past and continues to do so in the present. For instance, 1947 independence from British in India brought about the fall of the Rana regime in Nepal; the 1990 breakup of the soviet bloc brought about pro-democratic changes in Nepal. For the discussions here, however, I have assumed that these geopolitical influences for Nepal did not drastically change over the civil war period. This is discussed in detail in Yonzan (2020). See also Whelpton (2005). Like Skocpol, Rice and Patrick (2008) relate state capacity to four government responsibilities: "fostering an environment conducive to sustainable and equitable economic growth; establishing and maintaining legitimate, transparent, and accountable political institutions; securing their populations from violent conflict and controlling their territory; and meeting the basic human needs of their population." On the other hand, Besley and Persson (2011) limit their idea of state capacity to fiscal (collection of taxes) and legal (protection of private property) roles.

[4]This definition is derived from, among others, Small and Singer (1982), Fearon and Laitin (2003)., and Collier and Hoeffler (2004). The third point rules out genocides.

The negative correlation between a country's level of economic development and civil conflict is anchored in observations made by Collier and Hoeffler (1998), Collier and Hoeffler (2004), and Fearon and Laitin (2003). The latter study finds that "$1,000 less per capita income is associated with 41% greater annual odds of civil war onset."[5] Two related strands of literature have followed: (a) civil conflicts due to weak institutions, and (b) civil conflicts due to the opportunity for violence.[6]

The first line of thought argues that countries with *weak institutions* are ill-equipped—both due to a lack of fiscal and military resources—to govern their territories well leading to an increased probability of conflict. Besley and Persson (2008) show that, relative to states with no civil wars, states with civil wars make smaller investments in fiscal capacity in the aftermath of the conflict. However, civil wars generally cause a negative shock on the nation's infrastructure, which in turn surely influences their short-term spending capabilities. On this precise note, Rodrik (1999) argues that a country's involvement in a civil war is a reason for the country's lack of persistent positive economic growth. While there is a strong and positive correlation between economically underdeveloped states and intra-state conflict, the direction of this relationship is not clear, nor is it clear why some weak states have conflicts and others do not.

The *opportunity cost* hypothesis suggests that relative changes in prices can create opportunities for armed civil conflicts. Relative price ratios can change in response to structural changes – such as movement from agricultural to an industrial economy, or other shocks – such as changes in rainfall or rise and fall of commodity prices. These negative price shocks provide the opportunity for conflict. Miguel, Satyanath, and Sergenti (2004) use rainfall variations across 41 different countries in Sub-Saharan Africa as an instrument for economic growth shock. They find that a five-percentage point negative growth shock increases the likelihood of conflict in the following year by nearly half. The rainfall shock negatively impacts agriculture and the displaced agricultural workers provide the recruits for the militia. They conclude that a short-term decline in the opportunity cost of violence significantly increases the likelihood of conflict.

Dube and Vargas (2013) study the effect of international price shocks on the conflict in

[5] See Ray and Esteban (2017) and Blattman and Miguel (2010) for further discussion on the impact of the level of economic development on conflict. Further, these authors also provide discussions on why cross cross-country civil conflict studies are plagued by endogeneity issues. In this regard, Blattman and Miguel (2010) consider if perhaps "cross-country literature has been exhausted."

[6] Both hypotheses rely on the changes in the relative cost-benefit ratio of the opportunity of a rebellion. However, what distinguishes them is that whereas the former relies on political explanations, the latter relies purely on economic incentives.

Colombia. They observe that conflict increased in coffee-producing provinces in Colombia when there was a negative shock on international coffee prices. This is in line with the labor displacement argument used by the former study. Interestingly, they also find that conflict increased in oil-rich regions when there were positive shocks in international oil prices. In this latter study, the costs of violence decreased, due to labor displacement, and there was also a positive resource shock that increased the rewards of violence.

However, we also see relative stability in regions with an abundant supply of financially lucrative resources despite periods of price shocks – as in Saudi Arabia or Russia. Furthermore, we also observe civil conflicts in regions with no productive resources. A large share of the poorer countries remains poor perhaps due to this resource constraint in the first place.

Relative price changes could potentially follow abrupt changes in leadership. Jones and Olken (2009) study the effect of the successful assassination of leaders on conflicts. They find a 33 percentage points increase in the intensity of wars when a leader is assassinated compared to when there is a failed attempt on their lives. These shocks, however, be it instigated by citizens or foreigners are almost always endogenous to the war itself. Although consistent internally, their study does not provide causal evidence for conflicts due to the lowering of state capacity.

Whereas weak states and relative price shocks provide the space for conflict, mass civil conflict still requires a solution to the collective action problem, that of organizing armed groups. In essence, conflicts also require a motive. The literature is strife with suggestions on the distribution of resources as a motive for conflict (for instance see Sen 1973; Brubaker and Laitin 1998; Mitra and Ray 2014).[7] Yet, there is little empirical support for this notion. On the contrary, empirical studies have found that inequality does not explain conflicts (among others, see Fearon and Laitin 2003; Collier and Hoeffler 2004; Acharya 2009).[8] Ray and Esteban (2017) suggest that the null findings might be due to measurement issues. Inter-class

[7]More generally the need for an economic resource to be at the heart of the conflict is a position held by the *instrumentalists*. This school of thought believes that resource plays an underlying fundamental role in explaining conflicts. On the other hand, the *primordial* school of thought believes that conflicts are driven by intrinsic underlying hatred between groups. They argue that groups are fractured along ethnic, religious, or territorial lines. These groups are linked by the perception of strong "biological features" or "territorial location" making them coherent within and contrasting between. This forms the source of the struggles between the groups. This current work follows closely with the instrumentalist position. For further discussions on the primordialist position, see Horowitz (1985) and Huntington (1996).

[8]In the context of the Nepali Civil War, Acharya (2009) and Do and Iyer (2010) find geography as the most important explanation for conflict outcomes while Macours (2010) finds that inequality was important. In particular, the latter author finds that rebel recruiting, through abduction of young people, was higher in districts that had higher change in inequality between the landed and the landless at different points during the Civil War.

conflict, they assert, may be of "lower voltage", like strikes and demonstrations, and not reflected in the literature dealing with the number of deaths during the civil war.

1.3 Institutions, State-building, and Conflict in Nepal

The modern history of the Kingdom of Nepal begins with Prithivi Narayan Shah's victory over the Malla kings of Kathmandu valley in 1769. The tools of institution-building were (a) the control of land, and (b) cultural and religious assimilation – referred to as *Sanskritization*.[9]

As the primary economic resource, the land was used as a tool to not only extract revenue but also to maintain order and to reward (or punish) segments of society.[10] One particular way land was used was through the *jagir* system (Regmi 1976). *Jagirs* were appanages granted to soldiers in lieu of payment, and importantly, they weren't hereditary. Hence, there was little chance that a strong decentralized feudal system would develop as it had done in parts of Europe. Even with the disbursement of land through systems like jagir or tax-farming, the central government, of which the King was the head, always controlled the resource.[11]

Religion was another tool used for social disciplining. *Sanskritization*, which is a system of religious and lingual consolidation, became the primary tool towards this end (Bista 1991). Sanskritization created a Hindu state (Hindu religious texts were traditionally only written in Sanskrit) with Nepali (a derivative of the Sanskrit language) the lingua-franca of the state. The idea of one nation, one religion, one language, and one identity were embodied in the monarch himself (Whelpton 2005).

Once institutions are setup, there was a natural tendency among the elites to reinforce the political and economic institutions to consolidate their resources. Acemoglu, Johnson, and Robinson (2005) define this commitment problem as follows: "Individuals who have political power cannot commit not to use it in their best interests, and this commitment problem creates an inseparability between efficiency and distribution because credible compensating transfers and side-payments cannot be made to offset the distributional consequences of any particular set of economic institutions." In other words, there is a tendency for institutions

[9] Here, I provide a brief account of the institutional history of Nepal. See, among others, Whelpton (2005) and Yonzan (2020) for a detailed exposition of the country's institutional history.

[10] North, Wallis, and Weingast (2009) argue that in natural states–a political organization with elite personal relationships, ruled by a dominant coalition, and in which the organizations and privileges are inaccessible to the members outside this coalition–order is maintained by distributing resources among the elites. In this sense, the Kingdom of Nepal can be seen as a natural state.

[11] *Jagir* is very similar to land disbursement systems used in various political organization, such as the *timar* in Ottoman Empire and the *pomest'ia* in the 16th-century Muscovite state.

to perpetuate, or of path dependence. This path dependence can lead to an equilibrium that does not necessarily maximize social benefits.

In this way, the economic and socio-political organizations reinforced each other in the Kingdom of Nepal. All the while building on institutions that relied on the legitimacy of the monarch. Legitimacy provided the legal authority for the rule and in effect was the source of political order. The institutions weren't readily adaptive to the organizations and players in society. The unequal distribution of land created antipathy within society, which was subdued in the presence of a legitimate monarch. The massacre abruptly changed the social structure and provided the *opportunity* for an escalation of the conflict.

For Nepal, the path from initiation of the state to the escalation of mass violence can be traced as follows: formation of state –> formation of institutions –> formation of norms which reinforced these sub-optimal institutions and created path dependence –> negative exogenous shock to the institutions –> mass armed social violence.

The rest of the paper is sturctured as follows: Section 2 explains the events of the massacre and its importance for the identification; Section 3 outlines the data, variables, and the methodology; Section 4 presents the results; and Section 5 provides concluding remarks.

2 The Royal Massacre and Identification

The Royal Massacre (or Massacre) took place on the night of June 1^{st}, 2001. The King and members of the royal family had met at the palace for a routine dinner. The official report of the Massacre suggests that there had been some friction between the Queen and the Crown Prince, Dipendra, regarding the choice of his bride. Citing various witnesses, the report claims that Dipendra had been drinking and smoking hashish that night. Then at some point during the evening, Dipendra, geared in military fatigue and armed with semi-automatic rifles, gunned down ten members of the royal family, including his father, in addition to taking his own life.[12] There are various alternate theories that oppose the official report of the Massacre.[13] However, as one scholar of the history of Nepal suggests, these conspiracy theories leave more things unexplained than the official story (Whelpton 2005). Moreover, in

[12]Dipendra shot himself and remained in comatose until he succumbed to his injuries on June 4^{th}, 2001. As Birendra's successor, Dipendra was declared King after his father's death. As there was no other surviving heir to Dipendra or Birendra, so Gyanendra, the Birendra's brother, took over the throne.

[13]Some of them argue that security agencies in the United States and/or India is responsible for the Massacre. Others argue that it could be an internal power play within the royal family.

the light of gun violence and mental health issues that have come to prominence recently, it is not far-fetched that such an incident could have occurred.

If the Massacre did suddenly change the socio-political order and with it the nature of the conflict, we must be sure that the conflict itself, or social, economic, and political factors did not change before the Massacre. Yonzan (2020) provides further evidence that key political and economic factors remained unchanged in the period leading up to June 1^{st}, 2001. For instance, Figure 1 reports the *polity score* available from the Center for Systemic Peace. Polity score uses a twenty-point scale (ranging between positive and negative 10) that measures the democratic (positive) or autocratic tendency of the polity. A polity with a score of +6 or above is considered democratic, with +10 considered as being "strongly democratic"; on the other hand, a polity with a score of -6 and below is considered autocratic, with -10 considered as being "strongly autocratic". What is interesting to note is that in 1999, Nepal moved from a polity score of +5 to +6 indicating a movement towards a more democratic state. The expectation would have been of greater socio-political stability as opposed to the mass conflict that followed.[14] Additionally, factors that have been traditionally linked with the weakening of states, such as negative economic shocks, were also absent in the period before the Massacre.[15]

[Insert Figure 1 about here]

Another piece of corroborating evidence comes from The Worldwide Governance Indicators (WGI) project (**?**). The WGI provides six indices that proxy the perception of governance for a particular country. The index is constructed by utilizing surveys of the public, private enterprises, and non-government sectors. It also includes the perceptions of experts worldwide. The six governance dimensions include Voice and Accountability, Political Stability and the Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and the Control of Corruption. Each of these six indices is scaled for each country such that they range from -2.5 (worst) to +2.5 (best). The index can be used to compare the relative position of a country vis-à-vis other countries in a particular year and the changes in the country's relative position over time. These indices are available for over 200 countries starting in 1996. For the period of interest, these measures are available for Nepal for the

[14] Polity scores are available from the Center for Systemic Peace, Integrated Network for Societal Conflict Research http://www.systemicpeace.org/inscrdata.html.

[15] See Figure A.1 for the trends in important economic aggregates. Note that all significant economic indicators were either stable or improving in the period before June 1^{st}, 2001. Yonzan (2020) also provides evidence that the general elections, the last of which was held in 1999, showed no signs of a decline in state capacity. On the contrary, there was an increase in political participation, which generally is associated with political stability.

years 1996, 1998, 2000, and 2002-2006.

Figure 2 shows the trends in these six indices for Nepal during the period of the Civil War. The figure also provides a 95% confidence interval signifying the statistical uncertainty around these estimates. It is interesting to note that only two indices—Voice and Accountability (labeled Accountability in Figure 2) and Political Stability and the Absence of Violence/Terrorism (labeled Political violence in Figure 2)—declined in the period after the 2001 Massacre relative to before. All other indices show very little if any, negative change in the country relative to other nations in the sample. While the increase in political violence is not surprising, it is reassuring to know that Accountability (which I have referred to as legitimacy) was the only governance indicator that significantly declined in the immediate aftermath of the Massacre. One thing to note is that the WGI indicators are based on the perception of the public and experts, and hence, they should be read with further behavioral uncertainty in addition to the statistical uncertainty. Nevertheless, the WGI indices provide us with additional evidence of a decline in the legitimacy of the government while there was some stability around other governance measures.

[Insert Figure 2 about here]

The Massacre was a unique exogenous accident unrelated to any internal or external political event. This led to a collapse of the two-hundred-forty-year-old socio-political structure that de-legitimized and weakened the state. The underlying motives for conflict — the unequal distribution of land — was already present, however, it was subdued due to the legitimacy of the monarch. The absence of legitimacy provided the opportunity for mass "high-voltage" conflict.

3 Data and Methodology

3.1 Data and Variables

This study uses two sources of data. First, to study the effect of the loss of legitimacy on conflict outcomes, I will use PRIO Battle Deaths Dataset, v3.1 (Lacina and Gleditsch, 2005) (henceforth PRIO).[16] PRIO reports annual conflict-related deaths, which includes both the number of soldiers and civilians killed in combat, in state-based armed conflicts for the period 1946-2008. In particular, I will use Communist Party of Nepal-Maoist (CPN-Maoist)

[16]PRIO database can be accessed here: https://www.prio.org/Data/Armed-Conflict/Battle-Deaths/.

conflict-related deaths for the period 1996-2006 in Nepal. Additionally, I will use *Naxalite* insurgency-related conflict deaths in India as a counterfactual series to control for the secular time trends. Naxalites refer to the loose network of communist insurgency in India that has been ongoing since the 1960s. The insurgents in India share the same ideology and are fighting for similar causes as were the CPN-Maoists in Nepal.[17] For the latter group, I use conflict-related deaths due to four communists groups: Naxalites, Communist Party of India - Maoists (CPI-M), Maoist Communist Center of India (MCC), and Peoples War Group (PWG). These groups are broadly referred to as Naxalites in this study.[18]

PRIO uses several sources to report a *high*, *best*, and *low* estimate of the total number of annual deaths. Table 1 reports these annual death estimates. For the period of interest, PRIO's best estimate of the total number of deaths in Nepal is 12,129, PRIO's high estimate is 14,169 and their low estimate is 8,502. The total number of deaths attributed to the Naxalite conflict in India ranges between 1,376 (low estimate) to 6,315 (high estimate). Whereas for the Naxalite conflict, the only discrepancy between the best estimate and the high estimate is 10 deaths in 2006, the discrepancy between the best and high estimates for the CPN-Maoist conflict in Nepal is 2,040 deaths spread across the entire 1996-2006 period. One of the reasons for this discrepancy is that PRIO partly derives its' data from reports in media outlets. Hence, a well-reported conflict, as the one in India, will have estimates with lower uncertainty (for example, the best and high estimate for Naxalite conflict). This is also a reason why the best and high estimates for conflict-deaths in Nepal are closer for the period after the Massacre when there was more media scrutiny than before it. There are measurement concerns for PRIO's low estimate in the series for both conflicts. Hence, this latter estimate is the least preferred series.

[Insert Table 1 about here]

Second, to supplement the cross-country study, I use *Individual-Level Data on the Victims of Nepal's Civil War, 1996-2006: A New Dataset* (Joshi and Pyakurel, 2015) (JP2015 henceforth) for the intra-Nepal study. JP2015 records incidents by district (the second administrative tier in the country) for the entire civil war period from 1996 to 2006 in Nepal. Conflict outcomes are defined as *deaths*, *disappearances*, and *injuries*. A variable that aggregates all three is referred to as *total incidents*. In addition to the spatial distribution of conflict outcomes, JP2015 also allows for a more granular temporal study of the conflict.

[17] See Iyer (2009), Hoelscher, Miklian, and Vadlamannati (2012), Gomes (2015) for a detailed analysis on the Maoists conflict in India. Iyer (2009) describes it as: "in practice, land redistribution appears to be one of the main goals".

[18] There is no other communist group-related violence reported for India in PRIO. These four communist groups are active in the eastern, central, and southern states of India, also known as the *Red Corridor*.

Table 2 reports total deaths, disappearances, injuries, and incidents over six-month intervals for the period of the conflict.[19] Period 12 is the first period following the Massacre. There are 14,982 incidents reported in the dataset of which 88 percent are deaths, 5 percent are disappearances, and the remaining 7 percent are injuries.[20] Note that only 13 percent of all conflict-related deaths and 11 percent of injuries and disappearances happened in the period before the Royal Massacre. There are a total of 13,984 deaths and disappearances reported in JP2015. Compared to the deaths reported in the PRIO database, JP2015 has 185 fewer deaths relative to the *high estimate* reported in PRIO, and 1,855 more deaths relative to the *best estimate* reported in PRIO. Additionally, the annual *high estimate* of death from PRIO most closely matches the conflict deaths reported in JP2015. For this reason, I have used the high estimate from PRIO as the preferred estimate for the empirical study. Although I also present the main results using both the best and low estimates from PRIO.

[Insert Table 2 about here]

JP2015 also geo-references each incident to one of seventy-five districts in Nepal.[21] The geo-spatial location of each incident, in particular, is important as it allows us to relate the number and frequency of conflict-related incidents to the socio-economic characteristics of each district. The latter will become important when studying the effect of the distribution of land on conflict.

Figure 3 reports each district's share of total incidents using JP2015. Panel A reports each district's share of incidents for the period before the Massacre, that is from January 1^{st}, 1996 to May 30^{th}, 2001; panel B reports the same for the period after the Massacre, that is from June 1^{st}, 2001 to December 31^{st}, 2006. There were a total of 1,999 conflict-related incidents before the Massacre. Conflict, in the pre-Massacre period, was restricted to the western districts of Rukum and Rolpa. These districts were the traditional stronghold of the Communist Party of Nepal-Maoists (CPN-M). Indeed, 30% of the all pre-Massacre conflict

[19] The period of the civil conflict is divided into twenty-two six-month intervals. Since the Royal Massacre occurred in June 1^{st} 2001, the calendar year 2001 is divided into two periods: a period before the Massacre consisting of five months, and a period after the Massacre consisting of the last seven months of that year. All other calendar years are divided into two equal six-month periods. It is also important to note that the first and fourth periods after the Massacre had three and six months respectively of an official bilateral ceasefire between the conflicting parties.

[20] This dataset primarily records fatalities directly related to the conflict. Informal Sector Service Center (INSEC) compiled the dataset to provide financial support to those directly affected by the civil war. Hence, while JP2015 includes all known deaths and disappearances related to conflict, it only reports individuals deemed sufficiently injured for compensation. This is the reason for the disproportionate amount of deaths in the dataset.

[21] Districts became the second tier administrative zones in Nepal starting in 1950. It remained so for the period of our study. JP2015 also reports a list of demographic, economic, and ethnolinguistic characteristics of the victim.

incidents occurred in these two districts alone, and a further 18% in the neighboring districts of Jajarkot and Kalikot. Extreme poverty and mountainous terrain make these districts ideally suited for insurgency type conflicts. This is very much in line with the conflict and adverse geography hypothesis.[22] Whereas the period before the Massacre accounted for only 13.3% of the total incidents in the entire period of the Civil War, the period after accounted for 12,983 incidents, amounting to 86.7% of the total incidents during the Civil War. Not only was the intensity of conflict higher after the Massacre, but the conflict was also more pervasive. Contrary to the adverse geography hypothesis, conflict in the post-Massacre period spread to all parts of the country. Rukum and Rolpa in the post-Massacre period account for only 6.5% of the incidents in this period.

[Insert Figure 3 about here]

A different way to judge the pervasiveness of violence and also account for the immediate impact of the Massacre is to look at the number of districts that were affected by conflict across time. To that end, Figure 4 reports the number of districts that were affected by violence in each six-month interval between 1996 and 2006.[23] The dashed vertical line represents the Massacre. An affected district is defined as a district with at least five deaths in a six-month interval. Only two districts in the first three periods spanning 1996 and 1997 had five or more deaths, and there were three districts affected by the conflict in the last period of 1997. In the next seven periods—spanning the three-and-a-half years before the Massacre—on average, 10 out of a total of 75 districts were affected by violence. That, however, changed drastically starting the first period after the Massacre In this period, 35 districts, or 47 percent of the districts, were affected. In the first four years after the Massacre, the only periods with less than 80 percent of the districts affected were periods 1 and 4, both of which had a bilateral cease-fire between the conflicting parties. Even in these periods, the number of districts affected was at least three-fold higher compared to the average for the last 3 years before the Massacre.

[Insert Figure 4 about here]

The main explanatory variable is a measure of the distribution of land which proxies inequality. To calculate the inequality in the distribution of land in each district, I use the *Gini index*

[22] See Do and Iyer (2010) for more on details on adverse geograhpy and conflict.

[23] Since the Massacre occurred on the 1^{st} of June in 2001, hence, 2001 is divided into 5 months before the Massacre (period zero), and the 7 months after the Massacre (period 1). It is, however, unlikely that this classification significantly affects the number of districts involved in violence in the first period after the Massacre. This is because, of the two bilateral cease-fires during the entire Civil War period, the first spanned the first period after the Massacre (from August 3^{rd}, 2001 to November 23^{rd}, 2001). The second cease-fire lasted from January 29^{th}, 2003 to August 26^{th}, 2003 (spanning almost the entire period 4).

of ownership of farmland. This measure is calculated using the Agricultural Census tables for the year 1991/92 (CBS 1993), which is the last census before the start of the conflict.[24] Each holding of farmland is defined as the economic unit of agricultural production under single management. Any holding with crop production of less than 8 *dhurs* (or 0.014 hector area) in the flatlands or 4 *anas* (or 0.013 hector area) in the mountains and hills are coded as holdings with no farmland.[25] Table 3 reports descriptive statistics. The Gini index ranges from 0.33 to 0.68. To make this more relevant, consider that these Gini indices are equivalent to comparing the income inequality in Switzerland, which in terms of income is one of the world's most equal countries, and South Africa, one of the world's most unequal country.[26]

The vector of control variables includes measures identified in the literature as being important factors for civil conflicts. These variables capture the following concepts: regional income level and socio-economic development, adverse geography, ethnolinguistic diversity, political factors, and population. In particular, they include each district's *GDP per capita*, proxying the average family income in each district; *Slopes*, the average percent of incline of terrain in the district; and a measure of infrastructure in each district such as *Roads*—total kilometers of road per 100 square kilometers, *Banks*—the number of banks per capita, and *Post Office*—the number of post office buildings per capita. The vector also includes an index for overall socio-economic welfare in the district, measured by the *Human Development Index (HDI)*. Furthermore, two measures are added to capture the ethnolinguistic diversity in each district: a measure that captures linguistic variation—*Nepsppc*, the percent Nepali language speakers—and a measure that captures the ethnic variation—*CHHEpc*, the percent of Hill Brahmans and Chettri castes in the district.[27] In addition to these variables, I add a political variable, *UPF*, which is a spatial dummy matrix that identifies districts (and their neighboring districts) that were won by the United People's Front in the 1991 election. The majority of this political group later formed the CPN-Maoists.[28]

[Insert Table 3 about here]

[24] I have used the Gini index calculated using the 1991/92 census so that it is not endogenous to the conflict itself. I also provide a robustness check using Gini calculated from the 2001/02 census. Further, in the robustness section, I have also provided alternate definitions of inequality: *Top 10% Share*, the share of land owned by the top decile of landowners; and *Avg FarmSize*, the average size of landholding in each district.

[25] Nepal is divided into three ecological regions. These regions divide the country into three bands extending from east-to-west: mountains in the north, hills in the middle, and Tarai (or flatland) in the south.

[26] Switzerland had an income Gini index of 33.86 in 1992 and South Africa had a consumption Gini index of 59.33 in 1993. Source: PovcalNet, http://iresearch.worldbank.org/PovcalNet/povOnDemand.aspx.

[27] The definition of these variables are provided with their sources in Table A.2.

[28] See Acharya (2009) for further discussion on the UPF variable.

3.2 Methodology

3.2.1 Legitimacy and Conflict

To test the hypothesis that a negative shock to legitimacy increased conflict, I use a quasi-experimental design to parse out the changes in communist related conflict in Nepal relative to that of the Naxalite related conflict in India. To that end, I use a difference-in-differences (DD) framework to estimate the causal relationship of (loss of) legitimacy on conflict.[29] The identification comes from the fact that Nepal experienced a loss of legitimacy while India did not. The DD regression specification is as follows:

$$ln(Y_{gt}) = \delta\ (\mathbb{T} \times \mathbb{G}) + \beta\mathbb{T} + \alpha\mathbb{G} + \gamma Year_t + \varepsilon_{gt} \tag{1}$$

where Y_{gt} is the aggregate conflict deaths for each group $g \in \{CPN-M, Naxalites\}$ in year $t \in [1996, 2006]$. $\mathbb{G}$ is a group-dummy variable which equals one if Nepal and zero if India and $\mathbb{T}$ is a treatment-dummy variable with $\mathbb{T} = 1$ if $t \geq 2001$ and zero otherwise. The coefficient of interest, δ, captures the difference in the level of violence in the post-Massacre period in Nepal relative to the period before the Massacre, and relative to the Naxalite conflict-related deaths in India.

Moulton (1990) shows that the standard error of a standard DD coefficient has a large downward bias when there are correlations between the individuals within a group (commonly referred to as within-group clusters). These within-group correlations are especially problematic when there are a small number of groups, as is the case here with just two groups in the above DD regression. This can be problematic for inference as it significantly lowers the standard errors and in turn, increases the size of the t-statistics. A standard way to account for the within-group clusters is to structure the error term in equation (1) with group-level clusters. The regression model here does not have enough degrees of freedom to follow this approach.

Donald and Lang (2007) propose a different approach. Using their framework, we can modify equation (1) into the following three specifications to account for the within group clusters. The first specification, $DL1$, takes the difference of the outcome variable between the two groups in each period, that is $\Delta(\ln y_t) = \ln(Y_{CPN-M,t}) - \ln(Y_{Naxalite,t})$. We then run a regression of this difference in outcomes on a treatment dummy, $\mathbb{T}$. As with the regular DD in equation (1), $\mathbb{T} = 1$ if $t \geq 2001$ and zero otherwise. Here, we assume that the population

[29] See Angrist and Pischke (2008) for further detail on the difference-in-differences framework.

distribution of the differences in the outcomes are independent and identically distributed (iid) normal. $DL1$ can be specified as follows:

$$\Delta(\ln y_t) = \alpha + \delta^{DL1}\ \mathbb{T}_t + \nu_t. \tag{2}$$

In the second specification, $DL2$, we further difference the series of first difference, from $DL1$, with respect to the last period: that is $\Big\{\Delta(\ln y_t) - \Delta(\ln y_{t-1})\Big\}$.[30] We then run a regression of this group-and-time differenced outcome on an indicator which equals one if it is the first period after the intervention and zero otherwise. With this specification we are interested in the change in conflict in the first period after the Massacre. $DL2$ allows us to assume iid without the normality assumption. $DL2$ can be specified as follows:

$$\Big\{\Delta(\ln y_t) - \Delta(\ln y_{t-1})\Big\} = \alpha + \delta^{DL2}\ \mathbb{I}(t = 2001) + \eta_t \tag{3}$$

where $\mathbb{I}(t = 2001) = 1$ if $t = 2001$ or zero otherwise.

Whereas δ^{DL1} gives the average treatment effect for the entire period after the intervention relative to the average in the entire period before the intervention, δ^{DL2}, gives the treatment effect of the Massacre in the period immediately following the Massacre relative to the last period before. If the trends of the two groups are the same, then we should expect the intercept in DL2 to be zero. Hence, we add a third specification which modifies equation (3) by excluding the intercept. This third regression specification is referred to as $DL3$.

3.2.2 Distribution and Conflict

To test the impact of the distribution of economic resources on conflict, I use the JP2015 dataset that reports the number of conflict outcomes for each district within Nepal. There are a total of 74 districts indexed by $i = 1, 2, ..., 74$. Further, for the entire 1996-2006 period, each district is divided into six-month intervals, s.[31] There are a total of twenty-two ($s = 1, 2, ..., 22$) such intervals, with $s = 12$ the first period after the Royal Massacre.

The outcome variable, y, is calculated in four different ways for each district: *the total number of incidents* (TI), *the total number of deaths or killed* (TK), *the total number of days*

[30] The first difference of equation 2 over time is actually similar to equation 3 with additional assumption on the error term: $\Big\{\Delta(\ln y_t) - \Delta(\ln y_{t-1})\Big\} = \delta(\mathbb{T}_t - \mathbb{T}_{t-1}) + (\nu_{gt} - \nu_{g,t-1})$.

[31] Since the Royal Massacre occurred in June 1^{st} 2001, the calendar year 2001 is divided into two periods: a period before the Massacre consisting of five months, and a period after the Massacre consisting of the last seven months of that year. All other calendar years are divided into two equal six-month periods.

of conflict (TD), and *the total number of months of conflict* (TM). TI includes all—killed, injured, or missing—geo-identifiable observations in JP2015. TK is a subset of TI, which includes all observations that are identified as killed in the incident. While TI and TK capture the intensity of violence, the latter two outcomes—TD and TM—capture the frequency, or the persistence, of violence. The total number of days (months) of conflict is calculated by tallying the number of days (months) in each district with at least one recorded incident aggregated over each s. For instance, if a district had at least one incident every month in time interval $s = 3$, then this district would get a value of $TM_{i,s=3} = 6$.[32]

The baseline specification is a multivariate framework one that has been widely used in the literature:

$$\ln(y_{is}) = \alpha_i + \delta^{OLS}\ Gini_i + \Gamma X_i + \gamma_s + \theta Region_i + \varepsilon_{is}. \tag{4}$$

where y_{is} aggregates outcome for district i over period s. δ^{OLS} captures the effect of inequality in land distribution, *Gini*, on conflict outcomes. X_i is a vector of district-specific control variables summarized in Table 3. Note that the regressors do not vary over time. Besides, I add a $Region_i$ dummy.[33] The coefficient of interest, δ^{OLS}, captures the effect of the distribution of land on conflict outcomes.

Equation 4 does not account for the loss of legitimacy. To incorporate the effect of the Massacre, I add a treatment indicator, $\mathbb{T}$, to the above specification which "turns on" post Massacre; that is, $\mathbb{T}_s = 1$ for $s \geq 12$ and zero otherwise. $\mathbb{T}$ is interacted with the main explanatory variable *Gini* to capture the changes in outcome due to *Gini* after the Massacre compared to the conflict outcomes before the Massacre. The specification is as follows:

$$\ln(y_{is}) = \alpha_i + \delta_1 Gini_i + \delta_2 \Big\{ Gini_i \times \mathbb{T}_s \Big\} + \varepsilon_{is}. \tag{5}$$

In this specification, the effect of *Gini* on conflict outcomes is captured by $\dfrac{\partial \ln(y_{is})}{\partial Gini_i} = \delta_1 + \delta_2 \mathbb{T}_s$. In particular, δ_2 captures the effect of the loss of legitimacy. The effect of the distribution of land on conflict outcomes in the post Massacre period is captured by $\delta^{OLS \times T} = \delta_1 + \delta_2$. As in equation (4), we can update this model with the list of control variables, and time and region fixed-effects.

[32] Figure A.3 presents the trends in conflict outcomes for each of the outcome measures by s.

[33] Nepal can be geographically divided into three main ecological regions: High Himalayas, Churia Hills, and Plains. The *Region* dummy categorizes each district into one of the three ecological regions.

Whereas Equation 5 captures the change in conflict outcomes due to variation in the Gini index before and after the Massacre, it, however, does not account for the secular time trends within each district or, indeed, any other unmeasurable. To account for this, I split the districts into two groups: $j \in \{J_H, J_L\}$, with $j = J_H$ if district i has "high" inequality and $j = J_L$ if the "low" inequality. Then, using these groups, I run a DD model similar to equation 1. Assuming that the two groups have parallel trends in the pre-Massacre period, the parameter on the interaction of group and treatment dummy captures the causal effect of the Massacre on changes in conflict outcomes for the unequal group compared with the relatively equal group.[34] If indeed inequality was propagated by institutional factors and was the motive for conflict, then we should expect that the set of high inequality districts to have more "bite" to the collapse of legitimacy.

4 Empirical Results

4.1 The impact of the loss of legitimacy on conflict

For a consistent estimate, we need the PRIO series for the CPN-Maoist related conflict in Nepal and Naxalite conflict in India to follow a "parallel" trend before the intervention. Figure 5 reports the annual trends of deaths in panel A and the log trends in panel B for CPN-Maoist related deaths in Nepal (solid line) and Naxalite related deaths in India (dashed line) for the period 1996 to 2006.[35] Note that the trends in deaths due to both conflicts in the 1996-2000 period are relatively parallel. Additionally, in the period before the Massacre, Naxalite related conflict deaths are higher than CPN-Maoist related conflict deaths. However, CPN-Maoist conflict-related deaths escalated beginning 2001, while Naxalite related conflict deaths stayed fairly stable. Post-Massacre, CPN-Maoist conflict-related deaths far surpassed those related to the Naxalite conflict and stayed at this higher-level until the end of the CPN-Maoist conflict in 2006.

[Insert Figure 5 about here]

Formally, a DD estimate can be calculated using the specification outlined in equation (1). Table 4 reports these estimates using the high estimate of total deaths in panel A, best estimate in panel B, and low estimate in panel C. Columns (1) - (3) report DD estimates

[34] See Appendix B for a test of parallel trends.

[35] The series reported in Figure 5 uses the high estimate from PRIO. Figure A.4 presents the series using the best estimate from PRIO.

with no controls, and columns (4) - (6) add year fixed-effects. Since PRIO only reports annual estimates of death, we are unable to separate the pre and post-Massacre period within 2001. Hence, in columns (7) and (8) of Table 4 I report estimates on a sample that excludes 2001.[36]

While having more than a one-time dimension improves inference over a simple two-group-two-period model in a classical DD framework, the use of time dimension does bring up another problem— like that of serial correlation. Bertrand, Duflo, and Mullainathan (2004) note that the use of time dimension makes the standard errors downward biased if the errors in equation (1) are serially correlated.[37] To that end, columns (2), (3), (5), and (6) report standard errors corrected for auto-correlation using Newey and West (1987) type standard errors.

Using the full sample, I find that the annual deaths increased between 1.712 log points to 2.073 log points. Excluding 2001, the estimates suggest an increase in the annual deaths between 1.849 and 2.249 log points. All estimates are significant at the 5% level. The estimates for the full sample suggest that, in the post-Massacre period in Nepal, CPN-Maoist related deaths increased by between 5.5 and 7.9 folds over the pre-Massacre deaths in Nepal and relative to the Naxalites conflict related deaths in India.[38] The lower bound of 5.5 folds increase suggests that the annual conflict deaths, which was on average 258 before the Massacre, increased to 1,419 after it. The findings are robust across all specifications and all death estimates from PRIO.

[Insert Table 4 about here]

It is probable that had the Royal Massacre not happened in Nepal, conflict outcomes in the post-2001 period in Nepal would not have been much different than the relative trends in India. Considering that both conflicts were peasant uprisings, mostly directed against the

[36] In this sample, 2002 is the first period after the Massacre, while 2000 is the last period before the Massacre.

[37] The preferred method for Bertrand, Duflo, and Mullainathan (2004) when working with a small number of groups is to collapse the data into two time periods—before and after treatment—and to run regression (1) using this collapsed dataset. With only two groups, however, there are not enough degrees of freedom for inference using this specification.

[38] The estimated effect is calculated using the regression coefficient as follows:

$$\left\{ \ln(Y^{T=1}_{CPN-M}) - \ln(Y^{T=0}_{CPN-M}) \right\} - \left\{ \ln(Y^{T=1}_{Naxalite}) - \ln(Y^{T=0}_{Naxalite}) \right\} = 1.812$$

$$\Rightarrow \ln \left[\frac{Y^{T=1}_{CPN-M}/Y^{T=0}_{CPN-M}}{Y^{T=1}_{Naxalite}/Y^{T=0}_{Naxalite}} \right] = 1.812$$

$$\Rightarrow \frac{Y^{T=1}_{CPN-M}/Y^{T=0}_{CPN-M}}{Y^{T=1}_{Naxalite}/Y^{T=0}_{Naxalite}} = \exp^{1.812} \approx 6.123.$$

This suggests that a coefficient of 1.812 is about a 6.1 folds increase in conflict in the post-Massacre period.

landed elite, geographically isolated within each country, and the mutual relation between the two governments and the two militant communist factions of the two countries, it is safe to assume that any external influence would have affected both conflicts fairly equally. What transpired in Nepal seems to be entirely driven by the unique events within the country. The sudden and drastic increase in conflict and the absence of external influence suggests that the Royal Massacre played a major role in changing the nature of the conflict. The Massacre at the very least instantaneously transformed a geographically limited insurgency into a full-fledged civil war in Nepal.

4.2 Robustness Checks for Legitimacy and Conflict

4.2.1 Donald and Lang (2007) Specifications

I report the estimates and standard errors from the three specifications described in Donald and Lang (2007) in Table 5. Columns (1) and (2) of this table report the estimate $\hat{\delta}^{DL1}$ from regression equation (2); columns (3) and (4) report the estimates $\hat{\delta}^{DL2}$ from equation (3); and column (5) reports estimate from the $DL3$ specification. Further, standard errors in columns (2) and (4) account for serial-correlation as in Table 4. Also similar to Table 4, I report estimates using all measures from PRIO: high, best, and low death counts in panels A, B, and C respectively.

It is interesting to note that with just 7 months of treatment in 2001, which included a 3-month-long cease-fire, both $DL2$ and $DL3$ estimates using the high death count suggest a significantly positive impact of the Massacre. Moreover, the magnitude of the effect is not very different compared to the overall effect reported in column (1) of the same table. While the overall effect suggests an increase of 6.1 folds in the conflict in the aftermath of the Massacre, conflict effectively increased between 4.6 and 5.2 folds in the first period after the Massacre. The estimates and standard errors for the $DL1$ regression in columns (1) and (2) are equivalent to those reported in columns (4) and (5) of Table 4. Considering the high and best estimate, the estimated effect in the first period after the Massacre ranges between 2.0 and 5.2 fold increase in CPN-Maoist related conflict deaths in Nepal relative to Naxalite related conflict deaths in India.

[Insert Table 5 about here]

4.2.2 Placebo Massacres

While the estimates reported above for 2001 capture the effect of the Massacre, we can also test for the null effect in the years where legitimacy didn't change (or when there was no massacre). Since there was no massacre before 2001, we should expect to find no effect on conflict-related deaths in the years before the Massacre. Figure 6 reports the DD estimates calculated for all years treating *as-if* there was a massacre in the prior year. The estimate of each year is calculated using a regression similar to that in equation (3) with the time indicator, $\mathbb{I}$, equal to one in the first year after the placebo massacre. The estimates report the difference in conflict deaths across the two groups, relative to the previous year.

The effect for 2001 is reported in column (5) in panel A of Table 5. This effect is calculated as the increase in conflict-related deaths in 2001 relative to 2000, which is equal to 4.6 fold. I also report a 95% confidence interval for all the estimates. In all the years before the actual Massacre, I find no effect which is significantly different from zero at the 5% significance level. Indeed, it seems that conflict did not change at all in the years leading up to 2001. This provides additional evidence towards our hypothesis that the loss of legitimacy significantly changed the conflict outcomes in Nepal.

[Insert Figure 6 about here]

4.3 The effect of unequal distribution on conflict

The unequal distribution hypothesis suggests that as inequality increases so does grievance, which in turn increases the likelihood of violence. Table 6 reports results from specifications using equations (4). These specifications do not account for the Massacre and so the entire period of conflict is assumed to have a constant state capacity. This is the type of regression reported in the literature. Column (1) of this table reports results using the Gini index as the only regressor; column (2) adds period fixed-effects; column (3) adds the vector of control variables to column (1); column (4) adds both period fixed-effect and control variables to the specification in column (1). The outcome variable in panel A is total incidents, in panel B is total deaths, in panel C is the number of months of conflict, and panel D is the number of days of the conflict. It is interesting to see that in columns (1) through (4) the estimate of the effect of land distribution on all conflict measures is negative. This is contrary to our hypothesis. The direction of the estimates suggests that conflict outcomes are lower in regions where ownership of land is more unequal. However, in almost all specifications the estimate is statistically not different from zero. Columns (5) and (6) updates columns (3)

and (4) respectively controlling for ecological region fixed-effects. Column (7) reports results with clustered standard errors at the district level for specification in (6). It is interesting to note that while the coefficients are still not statistically significantly different from zero, they are in the same direction as suggested by the hypothesis in specifications (5) through (7). However, the results of these regressions are very inconclusive. Table 6 gives us an idea of why the literature on conflict has found such varying results of the effect of inequality on civil conflict.

[Insert Table 6 about here]

Without a clear identifying strategy it is difficult to find a consistent estimate. The discrepancy between the estimates in Table 6 suggests that the estimates calculated using the simple OLS regression are not consistent. To account for the Massacre and the change in state capacity, Table 7 provides estimates from equation (5). In this regression, the *Gini* interacts with a treatment dummy, $\mathbb{T}$, which equals one in the post-Massacre period and zero otherwise. The estimates measure the percentage change in outcome in the post-Massacre period due to a unit change in Gini, relative to the pre-Massacre period. As in Table 6, the specifications in the various columns of Table 7 varies by the controls.

First, it is interesting to note that the only specification with an opposite sign than what is suggested by the hypothesis is the specification in column (2). However, the effect of the Gini when controlling for just the period fixed-effects is not statistically significantly different from zero. In all other specifications, besides when the standard errors are clustered, the estimates are at least statistically significant at the 5% significance level. Moreover as expected, the estimates are positive, suggesting an increase in conflict outcomes due to change in the Gini, using a wide range of controls. Total deaths in panel B is the only statistically significant (at the 10% significance level) estimate in column (7). It is, however, unclear whether clustering the standard errors is necessary for this regression.[39]

The effect sizes are calculated using the regression coefficients δ^{OLS_T} from equation (5). For example, the effect size for the estimate of 0.370 in column (1) of panel A of Table 7 is calculated as follows:

$$\Big\{ \ln(y_1^{T=1}) - \ln(y_1^{T=0}) \Big\} - \Big\{ \ln(y_0^{T=1}) - \ln(y_0^{T=0}) \Big\} = 0.370$$

[39] Abadie et al. (2017) argue that "clustering is in essence a design problem, either a sampling design or an experimental design issue." They show that clustering standard errors are not ideal when working with the whole population, as it is the case in the current work.

$$\Rightarrow \ln\left[\frac{y_1^{T=1}/y_1^{T=0}}{y_0^{T=1}/y_0^{T=0}}\right] = 0.370$$

$$\Rightarrow \frac{y_1^{T=1}/y_1^{T=0}}{y_0^{T=1}/y_0^{T=0}} = \exp^{0.370} \approx 1.448.$$

This estimated effect suggests an increase in conflict incidents of 1.5 folds in the period after the Massacre compared to the period before. Overall, the estimated effects in panel A suggest an increase in the total incidents in the post-Massacre period between 0.5 and 5.3 folds over the pre-Massacre period. Likewise, deaths, reported in panel B, increase between 0.5 to 5.5 folds; the number of months of violence, reported in panel C, increases between 0.7 to 2.7 folds; and the number of days of violence, reported in panel D, increased between 0.7 and 5.0 folds. If we were to assume that all controls are necessary for these regressions, then the preferred effect of the loss of legitimacy, reported in column (7), suggests an increase in conflict-related deaths by 1.7 folds and an increase in the number of days of conflict by 1.6 folds. To make it more relative, the latter result suggests that if a district had at least one death in 50 days of a six-month spell before the Massacre, after the Massacre the same district had on average 80 days with at least one death in a six-month spell.

As the regressors do not vary over time, we may run the above regression by aggregating the data over the two-time intervals: before and after the Massacre. This would help negate the effect of serial correlation present due to the time dimension in the previous specification. Column (8) of Table 7 presents results from the specification with just two periods. The estimates from this specification are significantly larger than those reported in column (7). For the number of deaths, this specification suggests that compared to the overall period before the Massacre, the entire period after the Massacre had 12.3 folds more conflict-related deaths.

[Insert Table 7 about here]

Next, to account for the secular variation across time, I run a DD specification as the one outlined in equation (1). It is important to note that the DD assumes parallel trends in the pretreatment period. A formal test for the parallel trend is presented in Appendix B. Whereas the regressions presented above-reported results using individual districts as observations, the specifications presented below are based on group-level data. More precisely, each district is grouped into two bins according to their level of inequality. A unit of observation here is a group in a six-month interval. Groups are divided into high-inequality (that is, those districts with above-median Gini index) or low-inequality (all other districts) categories. The group-dummy equals 1 if the district is in the high-inequality group and zero otherwise.

Columns (1)-(4) of Table 8 report results from the DD regression utilizing various controls. Adding the period fixed-effects (column 2) changes the precision over not including them (column 1), however, it does not affect the magnitude nor the significance of the estimates. An effect size of 6.8 implies a more than 6 folds increase in conflict incidents for the high-inequality group relative to the low-inequality group in the post-Massacre period. Adding the list of control variables in column (3) and further adjusting for serial correlation in column (4) affects the magnitude, and, for the number of days of conflict, also the precision of the estimate. The effect size for total incidents decreases from 6.8 in specifications (1) and (2) to 2.9 in specifications (3) and (4). Likewise, the estimated effect size for total killed and total days of conflict both decrease from 7.1 to 3.2 folds and from 4.2 to 1.9 folds respectively. These are nevertheless significantly large increases in conflict measures in the post-Massacre period using all outcome measures.

The last three columns of Table 8 present estimates using the Donald and Lang (2007) specifications outlined in equations (2) and (3). $DL3$ does not include an intercept relative to the specification for $DL2$. The magnitude of the estimates of $DL1$ are the same as that of the DD with control for period fixed-effects (column 2). Whereas the estimates for DD and $DL1$ capture the change in the entire post-Massacre period, the estimates for $DL2$ and $DL3$ capture the change in the period immediately following the Massacre—that is for 2001. The estimates for these two latter specifications are much smaller but still in the expected direction. Despite a three-month-long cease-fire in the first period immediately following the Massacre, it is interesting to see that the estimates for $DL2$ are significantly positive. While the magnitude is larger in $DL3$, it is more imprecisely estimated relative to the former. The latter two specifications suggest that, for the high-inequality group, there were between 1.6 and 1.9 folds more incidents, 1.5 and 1.8 folds more deaths, and 1.2 and 1.3 folds more days of violence in the first period after the Massacre relative to the last period and over the trends for the low-inequality group.

[Insert Table 8 about here]

4.4 Robustness Checks for Distribution and Conflict

4.4.1 Income level and conflict

Since the level of economic development is the most consistent correlate of civil wars in cross-country studies, I present results using the district's per capita GDP as the main regressor instead of the measure of inequality. Figure 7 compares the effect size of the

estimates for the regressions using the district's Gini index and per capita GDP. It reports the estimates of total conflict incidents (TI), total conflict deaths (TK), and total days of conflict (TD) with a 95% confidence interval using estimated effects from column (3) of Tables 8 and A.4. These specifications account for the list of control variables and period fixed-effect. The horizontal dashed line at the estimated effect size equal to one represents the case when conflict outcomes in the post-Massacre period are equal to those in the pre-Massacre period. An effect size above this line suggests is an increase in conflict outcomes in the post-Massacre period by n folds over the pre-Massacre outcomes. For instance, the estimated effect of total deaths is 3.2 using the Gini as the predictor and 0.9 using the GDP as the predictor. This implies that in the post-Massacre period, there was a 300 percent increase in conflict-related deaths relative to the pre-Massacre levels for more unequal regions compared to equal regions; on the other hand, there was a 10 percent decline in conflict-related deaths in regions with higher income relative to regions with lower income. While all the estimated outcomes for the inequality measures are in the expected direction and significantly large, the estimates for per capita GDP explains nothing of the variation in conflict across time. Moreover, per capita GDP estimates are equally likely to have both positive and negative effects.

[Insert Figure 7 about here]

4.4.2 The first and fourth quartile groups

The groups used for the regressions of Table 8 categorize high and low-inequality districts arbitrarily using the median. Another way to classify the groups would be to compare the districts that are above the 75^{th} percentile (or those in the 4^{th} quartile) of the distribution of Gini indices to the districts that are below the 25^{th} percentile (or those in the 1^{st} quartile) of the distribution of Gini indices. The former in Table A.3 is the high-inequality group and the latter the low-inequality group. It is reassuring to see that the size and significance of the estimates in Table A.3 are larger here than those in Table 8. The increase in total deaths (panel B) ranges from 5.6 to 7.0 folds if one looks at the entire post-Massacre period, or between 2.4 and 2.8 folds in the first period after the Massacre. Similarly, total incidents range from 5.2 to 6.6 folds for the entire period after the Massacre and between 2.8 and 3.2 folds in the first period after the Massacre; the total number of days of conflict increased between 3.7 and 4.6 folds in the entire period, and between 1.4 and 1.7 folds in the first period after the Massacre. The effect sizes using the bottom and top quartile groups are all larger in magnitude than when comparing the above and median groups. The latter also sheds more evidence that the higher-inequality groups had more "bite" to the loss of legitimacy.

All specifications reported in Table A.3 suggest that there was a significant increase in conflict in the districts with higher inequality relative to those with lower inequality in the period after the Massacre. Consistent with the hypothesis, this evidence shows the importance of accounting for variations in institutional factors, such as legitimacy (or state capacity more broadly), to identify the relationship between inequality and conflict.

[Insert Table A.3 about here]

4.4.3 Residents only subsample

It is possible that most of the fighting was between individuals who did not reside in the district (or "foreign" militia). If indeed conflict was only between non-residents, this would cast doubt as to whether grievance played a role in the conflict. So, Table 9 presents results using both the full sample of data (baseline results) and a sample that contains individuals who were both residents and involved in the event that took place in their home district (or residents). About 60% of the events are involving residents.

The results are presented using various specifications in the various panels for the number of deaths (TK) and the number of days of conflict (TD). Results using total incidents are very similar to results with TK. Almost all results are robust to the resident only sample. Interestingly, the effect sizes using the resident only sample is larger than the baseline estimate. For instance, total death employing the DD methodology (panel C) increases from 7.1 fold in the aftermath of the Massacre at baseline to 9.7 fold using the sample involving only the residents. Likewise, the total number of days employing the *DL2* methodology (panel D) increases from 1.2 fold in the first period after the Massacre at baseline to 1.3 fold using the resident sample.

[Insert Table 9 about here]

4.4.4 Low-intensity conflict

It is possible that during the conflict there were episodes of high-intensity conflict on particular days and low or no conflict on others. The outcome of the conflict will certainly be influenced by these large outliers. For instance, so far the regressions do not distinguish between two districts with 100 people killed in one day or 100 people killed in 100 days. It is more probable that the latter district had more underlying motive for the sustained period of violence. The former could very well be an outlier in an otherwise relatively peaceful district. Indeed, there

were a few major clashed between
the military and the guerrillas with high casualties. One way to mitigate the influence of these outliers is to restrict the number of outcomes per event; in other words, this would give more weight to the events as opposed to the number of killed or injured to the events. To that end, I have created three subsamples of the data, namely (a) those events with less than 25 deaths per event, (b) those events with less than 50 deaths per event, and (c) those events with less than 100 deaths per event. Thereby, the first sample excludes any event in which there were more than 25 deaths and so on. Gini index from the 1991/92 census is the measure of inequality for these regressions.

The specifications in Table 10 correspond to equation (1) in columns (1)-(4) and equation (3) in columns (5)-(8). The baseline specification includes all incidents; columns (1) and (5) replicate results from columns (2) and (6) of Table 8 respectively. Results for the intensity of violence (that is TI and TK) are similar across the various samples. For instance, the total number of deaths increases in the post-Massacre period by between 7.1 and 7.8 fold with the various subsamples compared to 7.1 fold at the baseline. Similarly, the number of deaths in the first period after the Massacre is 1.5 fold higher using the baseline sample compared with between 1.3 and 1.4 fold higher using the various subsamples. The significance of the number of days of conflict in the first period after the Massacre is affected by using the subsamples. The estimates for TD is not significant using any of the smaller samples. However, the direction of change is similar to the baseline. In addition, the estimates for the average number of days of conflict in the overall period after the Massacre (between 4.2 and 4.3 fold) is comparable to the baseline estimate (4.2 fold).

[Insert Table 10 about here]

4.4.5 Sensitivity of the inequality measure

This section presents results using various measures of inequality to check the sensitivity of the estimated effect of inequality on conflict. Table 11 reports results using alternate inequality measures such as *Gini2001* (the Gini index using 2001/02 census), *Avg FarmSize* (average farm size in each district), and *Top 10 Share* (the share of farmland held by the richest decile in each district). The groups used are classified by those above and below the median inequality measure.[40] The estimates in columns (1)-(4) are calculated using the DD regression as the one presented in equation (1), while the estimates in columns (5)-(8) are

[40]Table A.5 reports the results using the first and fourth quartile groups. The results are consistent with those presented here.

calculated using the $DL2$ regression as the one presented in equation (3). The previous set of specifications estimates the change in conflict in the entire period after the Massacre, and the latter specifications estimate the effect in the first period after the Massacre. *Gini1991* in columns (1) and (5) of Table 11 present baseline regression results from columns (2) and (6) of Table 8 respectively.

The estimated effect size in panel A of Table 11 suggests an increase between 5.6 and 6.8 folds for the entire period after the Massacre and between 1.1 and 3.2 folds in the first period after the Massacre. The deaths increased between 5.9 and 7.1 for the entire post-Massacre period, and between 1.0 and 2.9 folds in the period immediately following the Massacre. Similarly, the number of days of conflict increased between 3.9 and 4.1 folds in the entire period, and 1.1 and 1.2 folds in the first period after the Massacre. All results suggesting a similar increase in conflict outcomes as in the baseline results.

[Insert Table 11 about here]

5 Conclusion

Institutions are created by societies to facilitate interactions. However, these institutions need not be socially optimal. Even sub-optimal institutions persist due to the tendency of institutions for path dependence. Institutions that are sub-optimal and do not adapt to the feedback from its organizations and players are prone to collapse. Conflict can be defined as a medium of change from one set of institutions to another. Institutions that do not easily adapt bring about disruptive changes, which could lead to high-voltage conflict.

This was exactly what happened in Nepal. Institutions were created by a historical accident when the Shah dynasty took over the governance of the state in the mid-18^{th} century. State-building was carried out using land and Sanskritization—a process of socio-cultural assimilation—as the primary tools. This created a highly unequal and stratified society. However, these sub-optimal institutions persisted due to the legitimacy of the monarchs. The capacity of the state collapsed on June 1^{st}, 2001 due to the Royal Massacre. This created the opportunity for conflict. The unequal distribution of land presented the motive for mass armed civil conflict.

Whereas in the period before the Royal Massacre the insurgency was isolated and sparse, in the period after, the conflict escalated and spread to all parts of the country. I find that conflict spread to as many as three-folds more districts in the period immediately following

the Massacre relative to the period before the Massacre. Using a difference-in-differences framework, I find that conflict in the aftermath of the Massacre increased by six-folds compared to before the Massacre. In this period with high voltage conflict, I also find that the distribution of land was important in explaining the conflict outcomes. I find at least a two-fold increase in conflict outcomes in unequal districts relative to more equal districts. These estimates are robust to various regression specifications and subsamples of the data.

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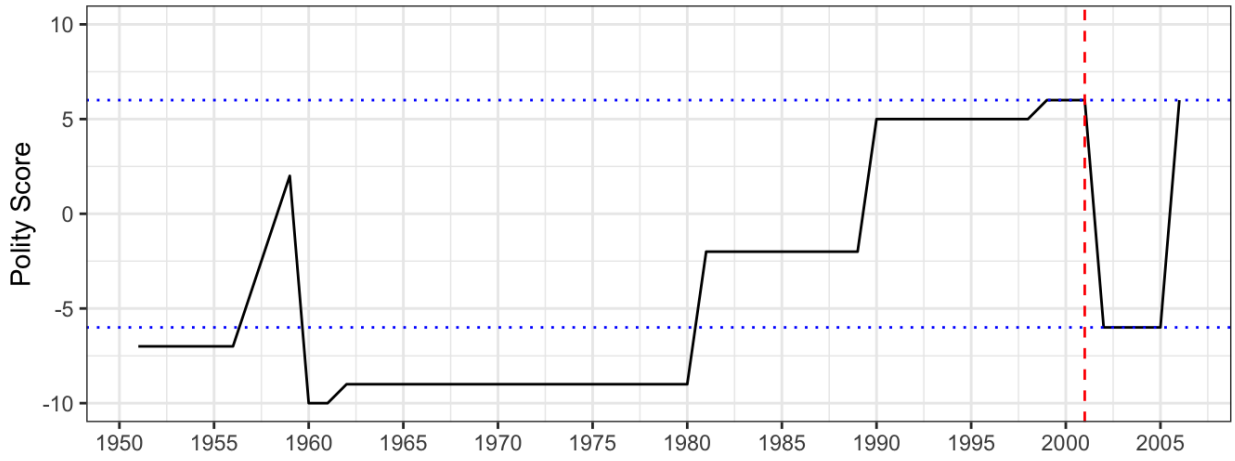


Figure 1: Trends in Polity Score, 1951-2006

Source: Center for Systemic Peace, http://www.systemicpeace.org/inscrdata.html.
Notes: Polity score uses a twenty-point scale (ranging between positive and negative 10) that measures democratic (positive) or autocratic tendency of the polity. A polity with a score of above +6 is considered democratic, with +10 considered as being "strongly democratic"; on the other hand, a polity with a score below -6 is considered autocratic, with -10 considered as being "strongly autocratic". Solid line reports the score for Nepal. The dashed vertical line represents the Royal Massacre in 2001.

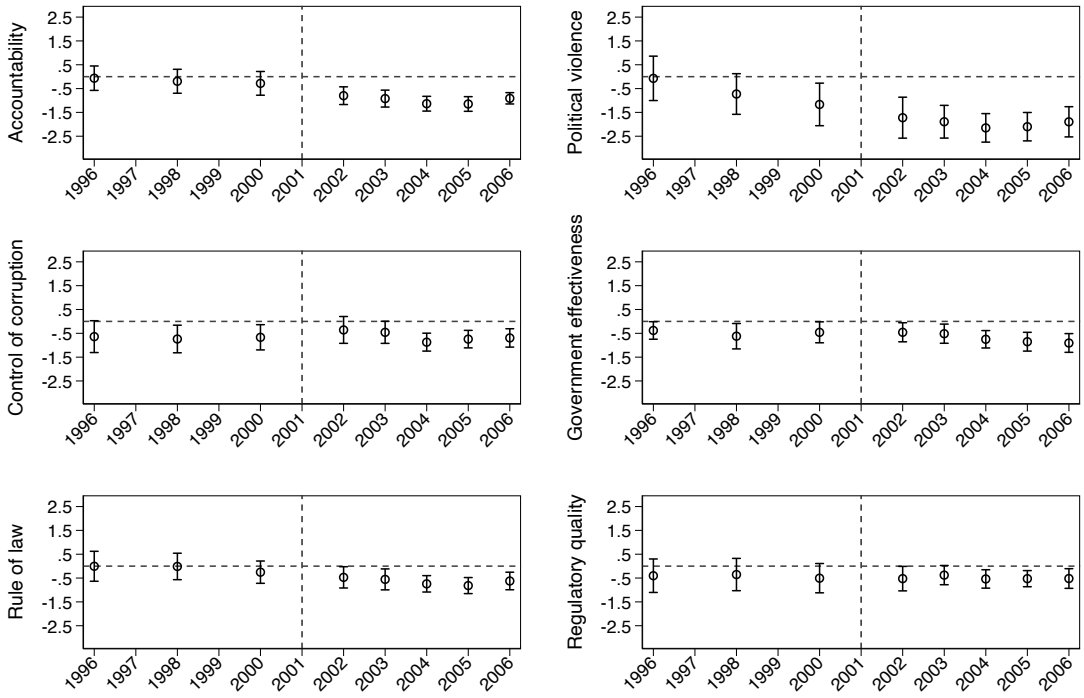
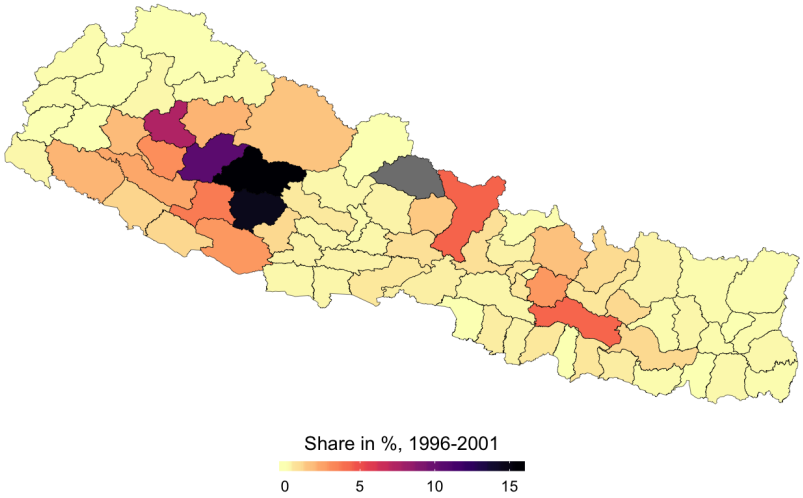
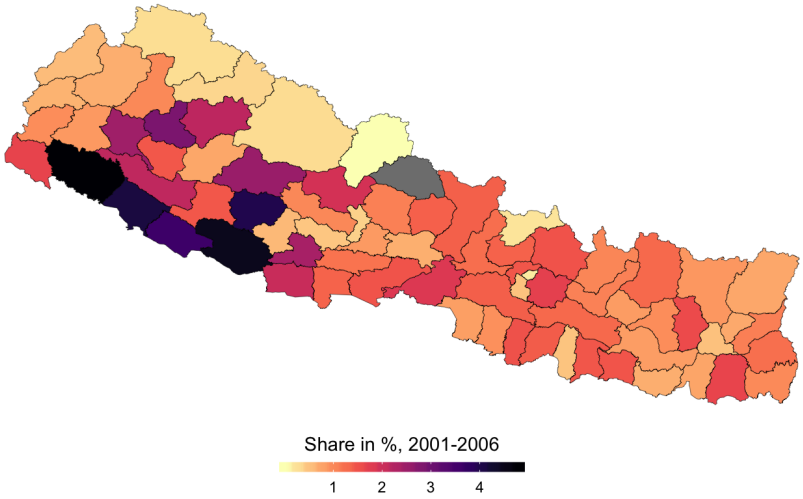


Figure 2: Trend in World Governance Indicators

Notes: The figure shows the trends in six World Governance Indicators with their 95% confidence interval for the period of the Civil War. The dashed horizontal line at 2001 represents the Massacre. Each indicator (Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption) is based on several hundred variables obtained from 31 different data sources, capturing governance perceptions as reported by survey respondents, non-governmental organizations, commercial business information providers, and public sector organizations worldwide.
Source: Worldwide Governance Indicators (Kaufmann et al., 2010).



Panel A: Before June 1^{st}, 2001



Panel B: After June 1^{st}, 2001

Figure 3: District's Share of Incidents Pre and Post Massacre

Source: See Table 2.
Notes: Panel A reports each district's share of total incidents for the period January 1^{st}, 1996 to May 31^{st} 2001. Panel B reports each district's share of total incidents aggregated for the period June 1^{st}, 2001 to December 31^{st} 2006. Total incidents includes deaths, disappearances, and injuries. There were a total of 14,982 incidents in the entire period of interest, of which 1,999 incidents occurred in the period before the Massacre, and 12,983 incidents in the period after the Massacre. Data is available for 74 of 75 districts. Data is missing for one district (Manang), which is shaded gray in the map.

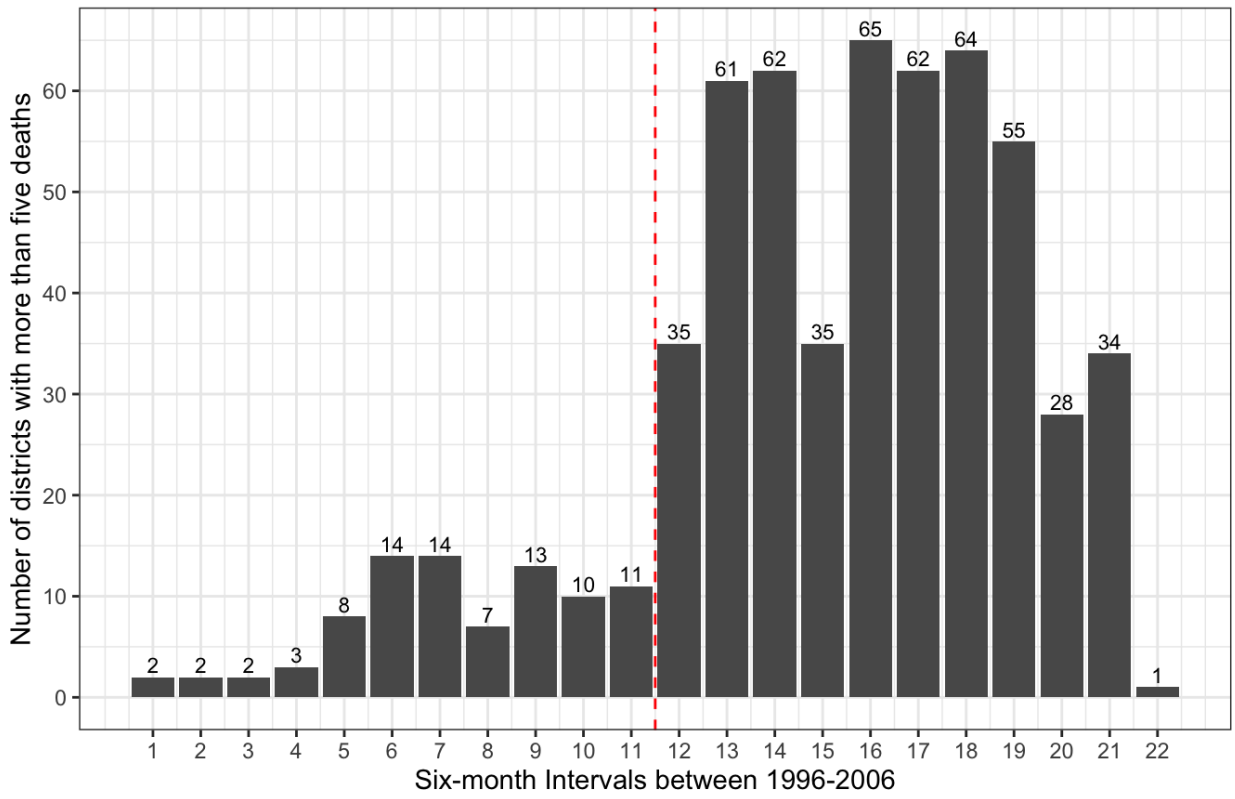
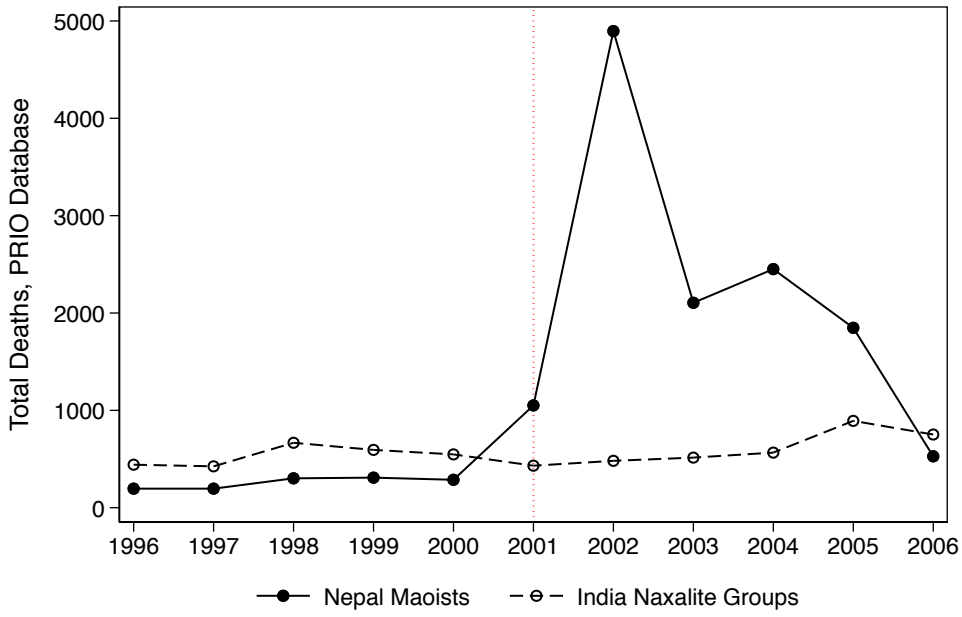
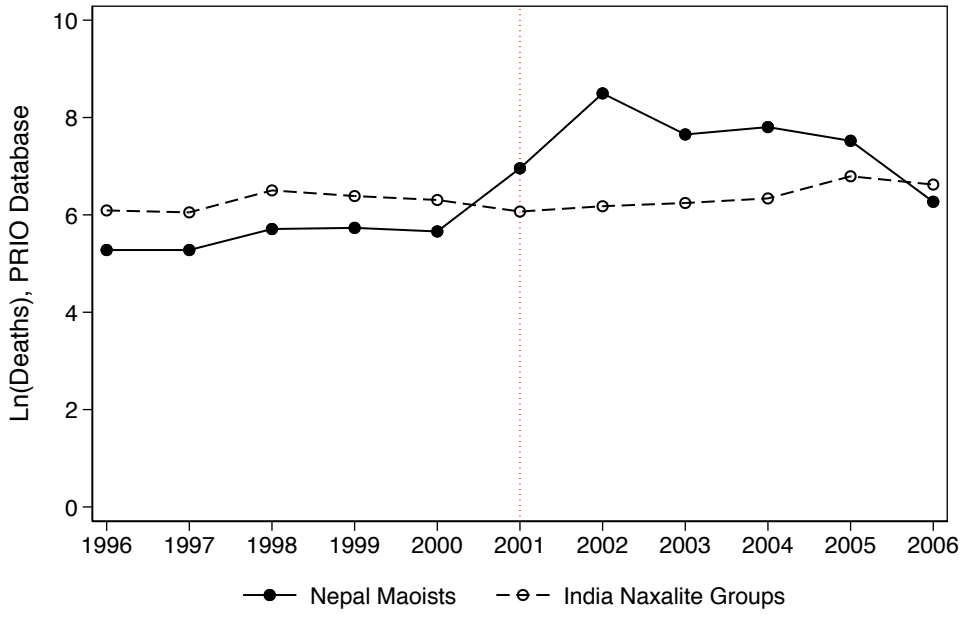


Figure 4: Temporal Distribution of the Number of Districts Affected by Conflict

Source: Author's calculation using Joshi and Pyakurel (2015).
Notes: Each bar reports the total number of districts with more than five deaths in each six-month interval. The dashed vertical line represents the Massacre, June 1^{st}, 2001. Period 12 aggregates conflict outcomes for the last seven-months after the Massacre (June - December 2001), while period 11 aggregates over the first five-months before the Massacre (January - May 2001). All other periods on the horizontal axis represent six-month intervals between 1996 and 2006. There were two cease-fires between the government and the CPN-M during the period of conflict: first from August 3^{rd}, 2001 to November 23^{rd}, 2001 (spanning period 12), and second from January 29^{th}, 2003 to August 26^{th}, 2003 (spanning almost entire period 15).



Panel A: Total Number of Deaths



Panel B: Log of Total Deaths

Figure 5: Annual Trends in Conflict Related Deaths

Source: See Table 1.
Notes: Panel A reports the trends in PRIO's high estimate of the total number of annual deaths due to Maoist related incidents in Nepal and Naxalite related incidents in India. Panel B reports the logged series of the same. Indian Naxalite groups used to calculate total deaths in India are Communist Party of India—Naxalites, Maoist (CPI-M), the MCC, and Peoples War Group (PWG).

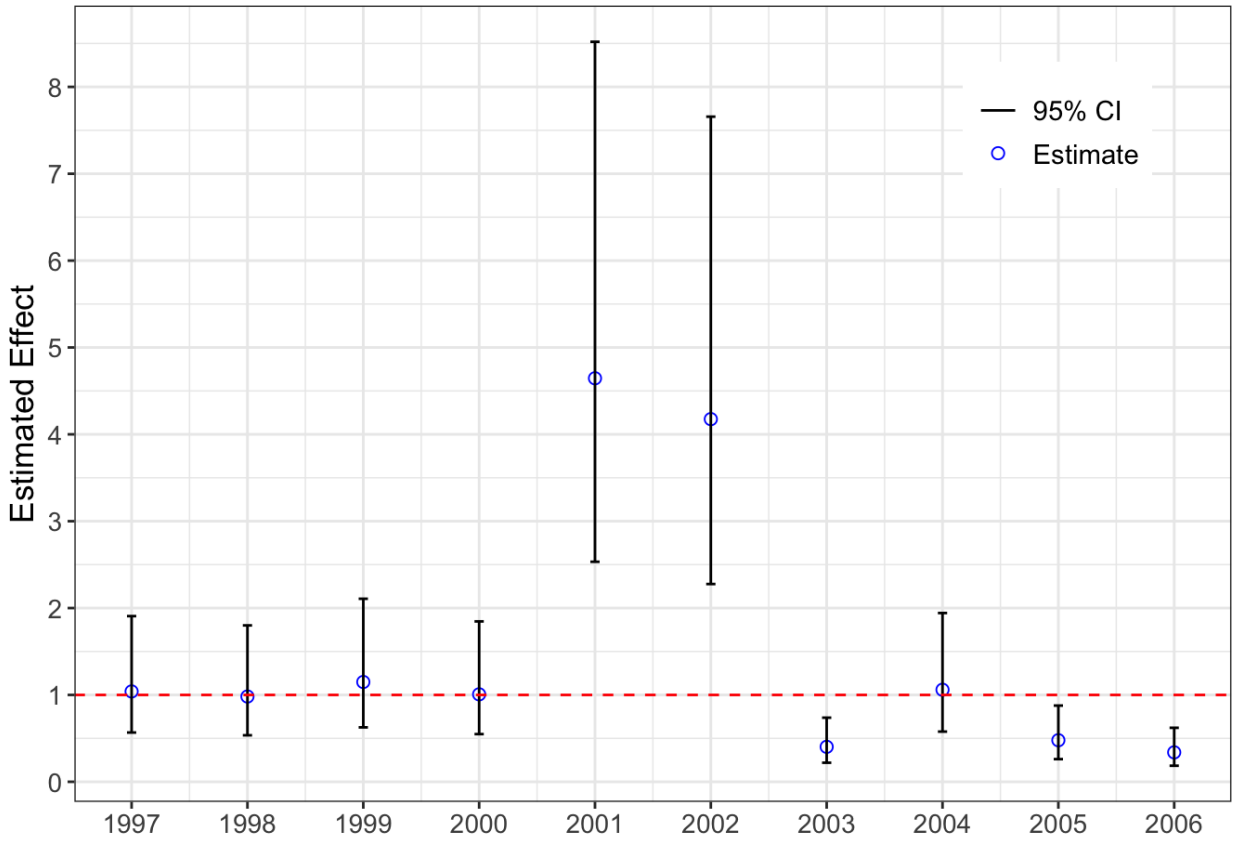


Figure 6: Comparison of Placebo Effects

Source: Author's calculation using PRIO Battle Deaths Dataset, v3.1 (Lacina and Gleditsch, 2005).
Notes: This figure reports difference-in-differences estimates for each year as-if the treatment had occurred at the end of the previous year. These estimates are differences of logged deaths across the two groups in each year, and the consequent difference of these group-differences from the previous year. These estimates are equivalent to the $DL2$ specification. For 2001, the estimate is the actual effect reported in column (5) panel A of Table 5.

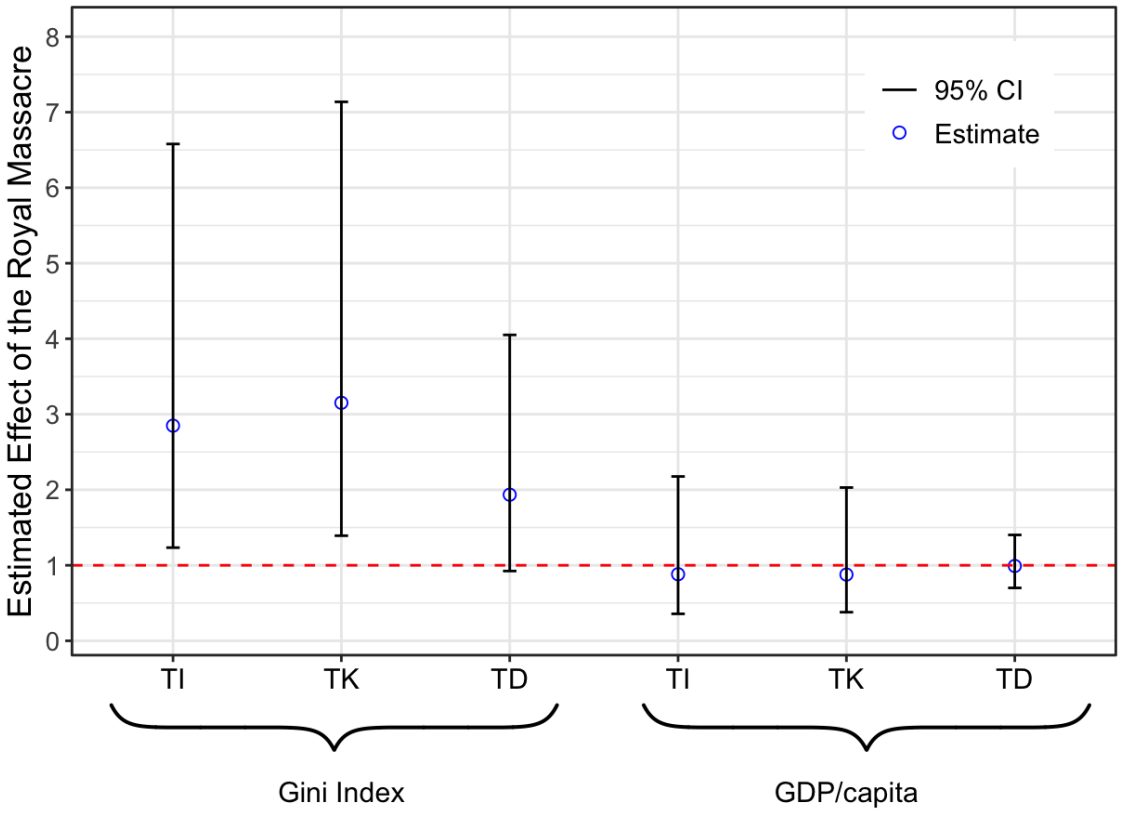


Figure 7: Comparing the Effect of District's Land Inequality and Income Level on Conflict Deaths

Source: Author's calculation using estimates and standard errors from column (3) of Tables 8 and A.4.
Notes: TThis figure reports the effect sizes for Total Incidents (TI), Total Deaths (TK), and Total Days of Conflict (TD) for both the Gini index of farmland ownership and the per capita GDP. All reported estimates control for period fixed-effect and the list of control variables specified in Table 3. *Estimated Effect* calculates the magnitude of each outcome in the post-Massacre period ($T = 0$) relative to the pre-Massacre period ($T = 1$). i.e. $Effect = \frac{Outcome_{T=1}}{Outcome_{T=0}}$. The horizontal dashed line, at Effect size = 1, represents an equivalent effect size in the pre and post-Massacre periods.

List of Tables

Table 1: PRIO Total Annual Death Estimates

	Indian Naxalite			Nepali Maoists		
Year	Low Estimate	Best Estimate	High Estimate	Low Estimate	Best Estimate	High Estimate
1996	138	442	442	44	100	196
1997	43	425	425	40	100	196
1998	25	667	667	118	250	302
1999	125	594	594	150	159	309
2000	50	548	548	175	260	287
2001	100	432	432	380	429	1,051
2002	100	482	482	2,780	3,947	4,896
2003	99	515	515	1,800	2,105	2,105
2004	71	566	566	1,431	2,451	2,451
2005	199	892	892	1,104	1,848	1,848
2006	426	742	752	480	480	528
Total	1,376	6,305	6,315	8,502	12,129	14,169

Source: PRIO Battle Deaths Dataset, v3.1 (Lacina and Gleditsch, 2005).
Notes: This table reports the total annual death estimates from PRIO database. Indian Naxalites includes conflict related deaths due to: Naxalites, Communist Party of India - Maoists (CPI-M), Maoist Communist Center of India (MCC), and Peoples War Group (PWG). Nepali Maoists reports conflict related death estimates attributed to Communist Party of Nepal - Maoist (CPN-M).

Table 2: Aggregate Conflict Outcomes over Six-Month Intervals

Period	Deaths	Disappearances	Injuries	Total Incidents
1	55	1	0	56
2	44	1	0	45
3	41	5	0	46
4	54	1	2	57
5	126	5	9	140
6	284	9	27	320
7	279	7	47	333
8	206	9	7	222
9	278	22	7	307
10	177	6	7	190
11	247	25	7	279
12	640	43	66	749
13	2,038	93	303	2,434
14	1,629	93	159	1,881
15	449	49	48	546
16	1,494	72	129	1,695
17	1,501	82	60	1,643
18	1,192	55	52	1,299
19	1,340	79	29	1,448
20	449	31	17	498
21	635	80	20	735
22	52	5	2	59
Total	13,210	773	998	14,982

Source: Author's calculation using Joshi and Pyakurel (2015).
Notes: This table reports estimates of conflict outcomes (deaths, disappearances, and injuries) between 1996 and 2006. Total incident is the sum of deaths, disappearances, and injuries. Period 12, the first period after the Royal Massacre, aggregates conflict outcomes for the first seven-months after the Massacre (i.e. June 1^{st}, 2001 - December 31^{st}, 2001), while period 11 aggregates over the last five-months before the Massacre (i.e. January 1^{st}, 2001 - May 31^{st}, 2001). All other periods represent six-month intervals between 1996 and 2006. There were two cease-fires during the Civil War period: first from August 3^{rd}, 2001 to November 23^{rd}, 2001 (spanning part of period 12), and second from January 29^{th}, 2003 to August 26^{th}, 2003 (spanning almost all of period 15).

Table 3: Descriptive Statistics

	(1) Mean	(2) SD	(3) Min	(4) Max	(5) 25th perc.	(6) Median	(7) 75th perc.
Explanatory variables							
Gini1991	0.46	0.07	0.33	0.68	0.40	0.44	0.51
Gini2001	0.48	0.06	0.38	0.70	0.43	0.47	0.53
Top 10% Share	33.39	6.23	24.76	61.07	28.85	31.97	37.91
Average Farm Size	0.88	0.35	0.28	1.76	0.64	0.82	1.12
Control variables							
Log GDPpc	5.36	0.29	4.83	6.45	5.16	5.34	5.49
Slopes	50.93	25.46	0.00	91.87	33.78	56.35	71.12
Banks	0.03	0.04	0.00	0.27	0.02	0.02	0.03
Roads	6.94	14.62	0.00	93.78	0.00	4.34	7.44
Post Office	0.22	0.08	0.10	0.46	0.17	0.20	0.25
HDI	0.45	0.07	0.30	0.65	0.41	0.46	0.49
Nepsppc	0.60	0.29	0.05	1.00	0.39	0.59	0.89
CHHEpc	0.34	0.18	0.02	0.79	0.25	0.33	0.46
UPFn	0.89	1.41	0.00	7.00	0.00	0.00	1.00
Log Population	12.40	0.79	9.61	13.89	12.02	12.50	12.88

Acronyms: HDI - Human Development Index; UPF - United Peoples Front; Nepsppc - percent of Nepali speakers; CHHEpc - percent of Chettri and Hill Brahmins ethnic groups.
Notes: This table reports the summary statistics of each variable used in the study. *Gini1991* captures Gini index for distribution of farmland calculated using the 1991/92 Agricultural Census. This is the main regressor of interest. *Gini2001*, *Top 10% Share*, and *Avg FarmSize* are alternate measures of inequality used as a robustness check for the main regressor. For a detailed definition of the variables and sources see Table A.2.

Table 4: Effect of Loss of Legitimacy on Conflict Related Deaths

	(1)	(2)	(3)	(4)	(5)	(6)	(7) wt 2001	(8) w/o 2001
Panel A: High Estimate								
$\hat{\delta}$ High	1.812***	1.812***	1.812***	1.812***	1.812***	1.812***	1.866***	1.849***
	(0.360)	(0.366)	(0.337)	(0.370)	(0.401)	(0.375)	(0.436)	(0.447)
Effect Size	6.123	6.123	6.123	6.123	6.123	6.123	6.462	6.353
R-squared	0.740			0.857			0.849	0.854
Panel B: Best Estimate								
$\hat{\delta}$ Best	2.073***	2.073***	2.073***	2.073***	2.073***	2.073***	2.246***	2.249***
	(0.453)	(0.460)	(0.408)	(0.422)	(0.437)	(0.360)	(0.443)	(0.454)
Effect Size	7.949	7.949	7.949	7.949	7.949	7.949	9.450	9.478
R-squared	0.699			0.863			0.888	0.888
Panel C: Low Estimate								
$\hat{\delta}$ Low	1.712**	1.712**	1.712***	1.712**	1.712**	1.712**	1.855**	1.858**
	(0.612)	(0.642)	(0.548)	(0.698)	(0.739)	(0.630)	(0.751)	(0.764)
Effect Size	5.540	5.540	5.540	5.540	5.540	5.540	6.392	6.411
R-squared	0.749			0.833			0.842	0.838
N	22	22	22	22	22	22	22	20
Year FE				x	x	x	x	x
NW lags		(1)	(3)		(1)	(3)		

Standard errors in parenthesis; *p<0.10, **p<0.05, ***p<0.01

Notes: This table reports the DD estimate, $\hat{\delta}^{DD}$, from regression equation (1). Panel A uses high estimate of death from PRIO, Panel B uses best estimate, and Panel C uses low estimate. In columns (1)-(6), 2001-2006 are treatment years; in column (7), 2001 is adjusted as 7/12 treated; and column (8) drops 2001. Standard errors in columns (1), (4), (7) and (8) are heteroskedasticity consistent; the other columns account for serial correlation using Newey-West type standard errors with 1-year and 3-year lags. *Effect Size* is calculated from $\hat{\delta}^{DD}$ as follows:

$$\left\{\ln(Y^{T=1}_{CPN-M})-\ln(Y^{T=0}_{CPN-M})\right\}-\left\{\ln(Y^{T=1}_{Naxalite})-\ln(Y^{T=0}_{Naxalite})\right\}=1.812\Rightarrow\ln\left[\frac{Y^{T=1}_{CPN-M}/Y^{T=0}_{CPN-M}}{Y^{T=1}_{Naxalite}/Y^{T=0}_{Naxalite}}\right]=1.812\Rightarrow\frac{Y^{T=1}_{CPN-M}/Y^{T=0}_{CPN-M}}{Y^{T=1}_{Naxalite}/Y^{T=0}_{Naxalite}}=e^{1.812}\approx 6.123.$$

Table 5: Estimates using Alternate Specifications

	(1) DL1	(2) DL1	(3) DL2	(4) DL2	(5) DL3
Panel A: High Estimate					
$\hat{\delta}$ High	1.812***	1.812***	1.655***	1.655***	1.536*
	(0.370)	(0.401)	(0.263)	(0.238)	(0.716)
Effect Size	6.123	6.123	5.233	5.233	4.646
R-squared	0.69		0.355		0.338
Panel B: Best Estimate					
$\hat{\delta}$ Best	2.073***	2.073***	0.704*	0.704*	0.739
	(0.422)	(0.437)	(0.340)	(0.317)	(0.913)
Effect Size	7.949	7.949	2.022	2.022	2.094
R-squared	0.698		0.056		0.068
Panel A: Low Estimate					
$\hat{\delta}$ Low	1.712**	1.712**	-0.049	-0.049	0.082
	(0.698)	(0.739)	(0.481)	(0.469)	(1.298)
Effect Size	5.540	5.540	0.961	0.961	1.085
R-squared	0.394		0.000		0.000
N	11	11	10	10	10
NW lags		(1)		(1)	

Standard errors in parenthesis; *p<0.10, **p<0.05, ***p<0.01

Notes: Columns (1) and (2) of this table report estimates for δ from equation (2); columns (3) and (4) report estimates for δ from equation (3); and column (5) reports estimates from regression specification $DL3$. Panel A uses high estimate of death from PRIO, panel B uses best estimate, and panel C uses low estimate. Columns (2) and (4) account for serial correlation using Newey-West type standard errors with 1-year lags. See Table 4 for the calculation of *effect size*.

Table 6: Effect of Unequal Distribution on Conflict (δ^{OLS}), not accounting for the loss of legitimacy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Total Incidents							
Gini ($\hat{\delta}^{OLS}$)	-0.582	-0.582*	-0.362	-0.362	0.189	0.189	0.189
	(0.471)	(0.316)	(0.682)	(0.388)	(0.753)	(0.448)	(0.962)
R-squared	0.001	0.547	0.091	0.637	0.098	0.644	0.644
Panel A: Total Killed							
Gini ($\hat{\delta}^{OLS}$)	-0.547	-0.547*	-0.412	-0.412	0.272	0.272	0.272
	(0.463)	(0.318)	(0.673)	(0.396)	(0.744)	(0.460)	(0.947)
R-squared	0.001	0.536	0.093	0.629	0.100	0.635	0.635
Panel C: Number of Months with Conflict							
Gini ($\hat{\delta}^{OLS}$)	-0.345	-0.345**	-0.182	-0.182	0.097	0.097	0.097
	(0.274)	(0.173)	(0.405)	(0.214)	(0.454)	(0.251)	(0.486)
R-squared	0.001	0.575	0.089	0.663	0.094	0.668	0.668
Panel D: Number of Days with Conflict							
Gini ($\hat{\delta}^{OLS}$)	-0.372	-0.372	-0.216	-0.216	0.288	0.288	0.288
	(0.408)	(0.266)	(0.588)	(0.314)	(0.650)	(0.368)	(0.828)
R-squared	0.001	0.575	0.096	0.670	0.103	0.678	0.678
N	1628	1628	1628	1628	1628	1628	1628
Period FE		x		x		x	x
Control vars			x	x	x	x	x
Ecological Region FE					x	x	x
Clustered SE							x

Standard errors in parenthesis; *p<0.10, **p<0.05, ***p<0.01

Notes: This table reports estimates for δ^{OLS} from equation (4). Gini index measures the distribution of land holdings for each district from the 1991/92 Agricultural Census. Each panel represents a measure of outcome variable: the number of reported incidents (deaths, missing, and injured) is reported in panel A, and the number killed directly related to the civil war is reported in panel B. The last two outcomes measure the frequency of incidents. For each district, outcomes in panel C and D tallies the number of days (months) with conflict in each six-month interval. There are 74 districts and 22 periods in the sample. Ecological Region are three geographic regions in Nepal: high-mountain, middle hills, and flatlands. Standard errors are clustered at the district level in column (7). Robust standard errors are reported for all other specification.

Table 7: Effect of Unequal Distribution on Conflict ($\delta^{OLS\times T}$), accounting for the loss of legitimacy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Total Incidents								
Gini x T ($\hat{\delta_2}$)	3.120***	-0.056	3.394***	0.570***	3.393***	0.566***	0.566	5.938***
	(0.114)	(0.169)	(0.103)	(0.165)	(0.102)	(0.162)	(0.366)	(2.020)
Gini ($\hat{\delta_1}$)	-2.757***	-0.543*	-2.066***	-0.648	-1.714***	-0.128	-0.128	-3.896**
	(0.412)	(0.321)	(0.490)	(0.394)	(0.549)	(0.451)	(0.933)	(1.940)
$\hat{\delta} = \hat{\delta_1} + \hat{\delta_2}$	0.370	-0.590	1.334	-0.070	1.683	0.446	0.446	2.048
Effect Size	1.448	0.554	3.796	0.932	5.382	1.562	1.562	7.752
R-squared	0.293	0.547	0.428	0.640	0.435	0.647	0.647	0.770
Panel B: Total Killed								
Gini x T ($\hat{\delta_2}$)	3.019***	-0.013	3.287***	0.609***	3.285***	0.600***	0.600*	6.473***
	(0.111)	(0.159)	(0.101)	(0.158)	(0.100)	(0.155)	(0.356)	(2.046)
Gini ($\hat{\delta_1}$)	-2.650***	-0.538*	-2.063***	-0.718*	-1.570***	-0.064	-0.064	-3.968**
	(0.409)	(0.321)	(0.504)	(0.403)	(0.568)	(0.464)	(0.912)	(1.946)
$\hat{\delta} = \hat{\delta_1} + \hat{\delta_2}$	0.369	-0.540	1.227	-0.101	1.715	0.540	0.540	2.513
Effect Size	1.446	0.583	3.411	0.904	5.557	1.716	1.716	12.342
R-squared	0.288	0.536	0.426	0.632	0.432	0.639	0.639	0.781
Panel C: Number of Months with Conflict								
Gini x T ($\hat{\delta_2}$)	1.850***	-0.094	2.010***	0.264**	2.010***	0.261**	0.261	3.519*
	(0.066)	(0.115)	(0.058)	(0.110)	(0.057)	(0.109)	(0.237)	(1.766)
Gini ($\hat{\delta_1}$)	-1.635***	-0.280	-1.192***	-0.315	-1.030***	-0.049	-0.049	-1.976
	(0.238)	(0.184)	(0.270)	(0.220)	(0.306)	(0.256)	(0.496)	(1.458)
$\hat{\delta} = \hat{\delta_1} + \hat{\delta_2}$	0.220	-0.370	0.820	-0.046	0.980	0.221	0.221	1.549
Effect Size	1.246	0.691	2.270	0.955	2.664	1.247	1.247	4.707
R-squared	0.314	0.575	0.449	0.664	0.454	0.670	0.67	0.735
Panel D: Number of Days with Conflict								
Gini x T ($\hat{\delta_2}$)	2.766***	-0.039	3.005***	0.508***	3.005***	0.504***	0.504	5.406***
	(0.097)	(0.150)	(0.086)	(0.144)	(0.085)	(0.142)	(0.325)	(1.911)
Gini ($\hat{\delta_1}$)	-2.300***	-0.345	-1.725***	-0.471	-1.397***	0.006	0.006	-2.882*
	(0.353)	(0.272)	(0.407)	(0.321)	(0.459)	(0.372)	(0.806)	(1.728)
$\hat{\delta} = \hat{\delta_1} + \hat{\delta_2}$	0.466	-0.370	1.285	0.038	1.615	0.510	0.510	2.526
Effect Size	1.594	0.691	3.615	1.039	5.028	1.665	1.665	12.503
R-squared	0.312	0.575	0.455	0.674	0.462	0.681	0.681	0.773
N	1628	1628	1628	1628	1628	1628	1628	148
Period FE		x		x		x	x	x
Control vars			x	x	x	x	x	x
Ecological Region FE					x	x	x	x
Clustered SE							x	x

Standard errors in parenthesis; *p<0.10, **p<0.05, ***p<0.01

Notes: This table reports estimates for δ^{OLS_T} from equation (5). See also Table 6.
Effect Size is calculated from $\hat{\delta}$ as follows:
$\left\{\ln(y_1^{T=1}) - \ln(y_1^{T=0})\right\} - \left\{\ln(y_0^{T=1}) - \ln(y_0^{T=0})\right\} = 0.370 \Rightarrow \ln\left[\frac{y_1^{T=1}/y_1^{T=0}}{y_0^{T=1}/y_0^{T=0}}\right] = 0.370 \Rightarrow \frac{y_1^{T=1}/y_1^{T=0}}{y_0^{T=1}/y_0^{T=0}} = \exp^{0.370} \approx 1.448$. This represents a 1.5 folds increase in conflict outcome in the post-Massacre period relative to the pre-Massacre period.

Table 8: Effect of Inequality on Conflict (δ^{DD} and δ^{DL})

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	DD				DL1	DL2	DL3
Panel A: Total Incidents							
$\hat{\delta}$	1.918***	1.918***	1.047**	1.047***	1.918***	0.505***	0.646
	(0.641)	(0.239)	(0.427)	(0.250)	(0.239)	(0.113)	(0.501)
Effect Size	6.807	6.807	2.849	2.849	6.807	1.657	1.908
R-squared	0.584	0.971	0.990		0.764	0.050	0.077
Panel B: Total Killed							
$\hat{\delta}$	1.958***	1.958***	1.148**	1.148***	1.958***	0.438***	0.579
	(0.629)	(0.246)	(0.417)	(0.278)	(0.246)	(0.115)	(0.508)
Effect Size	7.085	7.085	3.152	3.152	7.085	1.550	1.784
R-squared	0.591	0.969	0.990		0.761	0.037	0.061
Panel C: Number of Days with Conflict							
$\hat{\delta}$	1.435***	1.435***	0.660	0.660**	1.435***	0.150*	0.269
	(0.435)	(0.203)	(0.377)	(0.295)	(0.203)	(0.077)	(0.350)
Effect Size	4.200	4.200	1.935	1.935	4.200	1.162	1.309
R-squared	0.562	0.952	0.984		0.714	0.010	0.029
N	44	44	44	44	22	21	21
Period FE		x	x	x			
Control Variables			x	x			
AR(5)				x			

Standard errors in parenthesis; *p<0.10, **p<0.05, ***p<0.01

Notes: This table reports estimates for δ from (1) in columns (1)-(4), and equations (2) and (3) in columns (5)-(7). Districts are classified into high-inequality (that is those districts with above median Gini index) and low-inequality (all other districts) groups. See to Table 7 for calculations on the *Effect Size*. See also Table 6.

Table 9: Estimates using Outcome for Residents only Sample

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	TK		TD		TK		TD	
	Baseline	Resident	Baseline	Resident	Baseline	Resident	Baseline	Resident
	Panel A: OLS x T				**Panel B: BA**			
Gini x T ($\hat{\delta_2}$)	0.600***	0.626***	0.504***	0.569***	6.473***	5.537**	5.406***	4.908**
	(0.155)	(0.118)	(0.142)	(0.113)	(2.213)	(2.228)	(2.009)	(2.008)
Gini ($\hat{\delta_1}$)	-0.064	0.471	0.006	0.404	-3.968*	-1.721	-2.882	-1.714
	(0.464)	(0.410)	(0.372)	(0.354)	(2.155)	(2.284)	(1.874)	(2.039)
$\hat{\delta} = \hat{\delta_1} + \hat{\delta_1}$	0.540	1.097	0.510	0.973	2.513	3.817	2.526	3.198
Effect Size	1.716	2.995	1.665	2.646	12.342	45.468	12.503	24.484
R-squared	0.639	0.613	0.681	0.631	0.781	0.777	0.773	0.767
N	1628	1606	1628	1606	148	146	148	146
	Panel C: DD				**Panel D: DL2**			
$\hat{\delta}$	1.958***	2.275***	1.435***	1.898***	0.438***	0.161	0.150*	0.301***
	(0.246)	(0.295)	(0.203)	(0.257)	(0.115)	(0.099)	(0.077)	(0.099)
Effect Size	7.085	9.728	4.200	6.673	1.550	1.175	1.162	1.351
R-squared	0.969	0.955	0.952	0.942	0.037	0.008	0.010	0.036
N	44	44	44	44	21	21	21	21

Standard errors in parenthesis; *p<0.10, **p<0.05, ***p<0.01

Notes: Columns (1) and (3) of Panel A report baseline results for total deaths (TK) and total number of days with conflict (TD) from columns (6) of Table 7. Likewise, columns (5) and (7) of Panel B report baseline results using the equivalent regression in columns (8) of Table 7; columns (1) and (3) of Panel C report baseline results from column (2) of Table 8; and, columns (5) and (6) of Panel D report baseline results from column (6) of Table 8. "Resident" specifications duplicate the baseline specifications for a sample that only includes incidents with the affected individuals also a resident of the district.

Table 10: Estimates using Low-intensity Conflict Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	DD				**DL2**			
	Baseline	<25	<50	<100	Baseline	<25	<50	<100
Panel A: Total Incidents								
$\hat{\delta}$	1.918***	2.017***	1.947***	1.927***	0.505***	0.388***	0.313***	0.426***
	(0.239)	(0.216)	(0.224)	(0.235)	(0.113)	(0.080)	(0.096)	(0.108)
Effect Size	6.807	7.516	7.008	6.869	1.657	1.474	1.368	1.531
R-squared	0.971	0.975	0.974	0.972	0.05	0.076	0.042	0.049
Panel B: Total Killed								
$\hat{\delta}$	1.958***	2.061***	1.986***	1.965***	0.438***	0.383***	0.264**	0.359***
	(0.246)	(0.220)	(0.231)	(0.243)	(0.115)	(0.077)	(0.094)	(0.110)
Effect Size	7.085	7.854	7.286	7.135	1.550	1.467	1.302	1.432
R-squared	0.969	0.973	0.972	0.969	0.037	0.081	0.036	0.038
Panel C: Number of Days with Conflict								
$\hat{\delta}$	1.435***	1.464***	1.461***	1.431***	0.150*	0.106	0.099	0.124
	(0.203)	(0.202)	(0.202)	(0.203)	(0.077)	(0.075)	(0.076)	(0.079)
Effect Size	4.200	4.323	4.310	4.183	1.162	1.112	1.104	1.132
R-squared	0.952	0.953	0.953	0.953	0.010	0.035	0.035	0.030
N	44	44	44	44	21	21	21	21
Period FE	x	x	x	x				

Standard errors in parenthesis; *p<0.10, **p<0.05, ***p<0.01

Notes: This table reports estimates for δ from equation (1) in columns (1)-(4) and equation (3) in columns (5)-(8). Districts are classified into high-income (above median) and low-income (below median) groups by the distribution of Gini index. Columns (1) and (5) report baseline results from columns (2) and (6) of Table 8 respectively. Columns (2)-(4) and columns (5)-(7) restrict the sample of outcomes to those with less than 25 incidents, less than 50 incidents, and less than 100 incidents for any given event. See also Table 8.

Table 11: Estimates for Various Definitions of Inequality

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	DD				DL2			
	Gini1991	Gini2001	Avg FarmSize	Top 10 Share	Gini1991	Gini2001	Avg FarmSize	Top 10 Share
Panel A: Total Incidents								
$\hat{\delta}$	1.918***	1.889***	1.821***	1.732***	0.505***	1.174***	0.742***	0.110
	(0.239)	(0.205)	(0.204)	(0.199)	(0.113)	(0.113)	(0.132)	(0.103)
Effect Size	6.807	6.613	6.178	5.652	1.657	3.235	2.100	1.116
R-squared	0.971	0.978	0.978	0.979	0.05	0.220	0.077	0.003
Panel B: Total Killed								
$\hat{\delta}$	1.958***	1.965***	1.893***	1.767***	0.438***	1.055***	0.621***	0.043
	(0.246)	(0.234)	(0.230)	(0.216)	(0.115)	(0.122)	(0.148)	(0.114)
Effect Size	7.085	7.135	6.639	5.853	1.550	2.872	1.861	1.044
R-squared	0.969	0.973	0.972	0.975	0.037	0.165	0.044	0.000
Panel C: Number of Days with Conflict								
$\hat{\delta}$	1.435***	1.422***	1.356***	1.412***	0.150*	0.171*	0.149	0.096
	(0.203)	(0.207)	(0.193)	(0.167)	(0.077)	(0.084)	(0.094)	(0.070)
Effect Size	4.200	4.145	3.881	4.104	1.162	1.186	1.161	1.101
R-squared	0.952	0.951	0.956	0.967	0.010	0.011	0.007	0.005
N	44	44	44	44	21	21	21	21
Period FE	x	x	x	x				

Standard errors in parenthesis; *p<0.10, **p<0.05, ***p<0.01

Notes: This table reports estimates for δ from equation (1) in columns (1)-(4) and equation (3) in columns (5)-(8). Districts are classified into high-income (above median of the inequality measure) and low-income (all other districts) groups. Columns (1) and (5) are baseline results from columns (2) and (6) of Table 8 respectively. *Gini2001* index measures the distribution of land holdings for each district calculated using the the 2001/02 agricultural census. *Avg FarmSize* calculates the mean size of the farm in each district, and *Top 10 Share* calculates the share of total holdings of the richest decile of land owners. Each panel reports various measures of the outcome variable. The first two outcomes measure the number of reported incidents (deaths, missing, and injured) and the number killed directly related to the civil war. The last outcome measures the frequency of incidents. For each group, outcome in panel C tallies the number of days with at least one incident in each six-month period. Refer to Table 7 for calculations on the *Effect Size*. Robust standard errors are reported for all specification.

A Appendix Figures and Tables

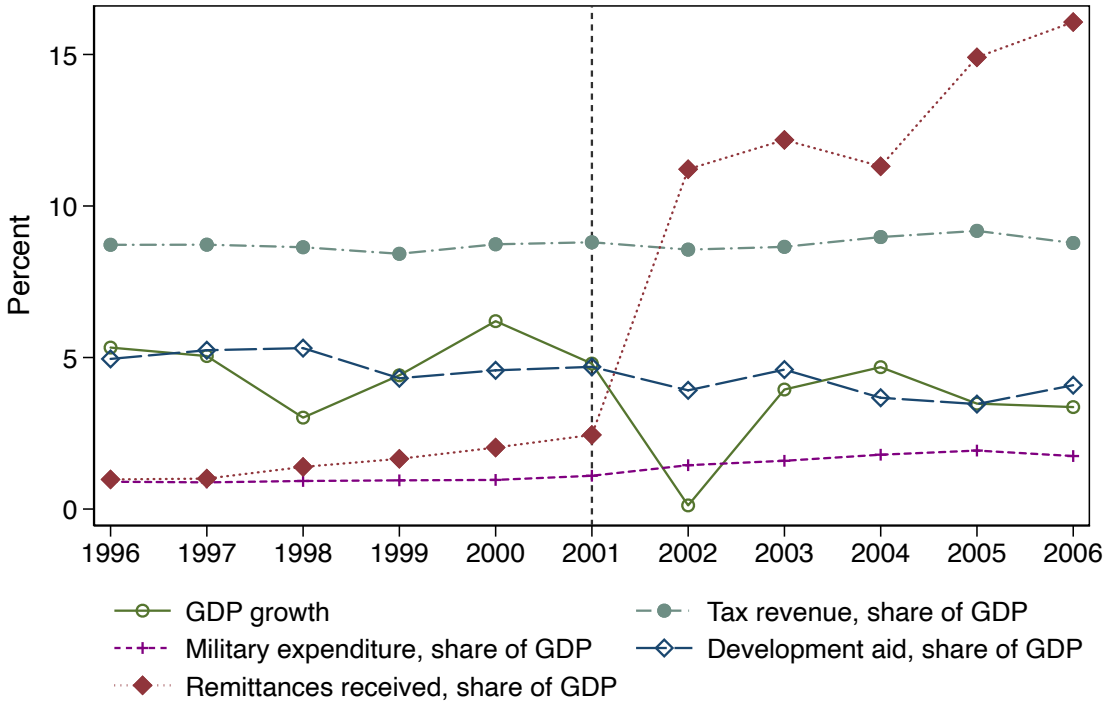


Figure A.1: Trends in Macroeconomic Aggregates, 1996-2006

Source: World Development Indicators, World Bank (https://databank.worldbank.org/source/world-development-indicators).
Notes: This figure shows the trends in economic aggragates during the period of the Civil War (1996-2006) in Nepal. In particular, it reports the series for the countries GDP growth (%), tax revenue (share of GDP, %), military expenditure (share of GDP, %), official development aid (share of GDP, %), and inflow of remittances (share of GDP, %). The dashed vertical line represents the year of the Royal Massacre.

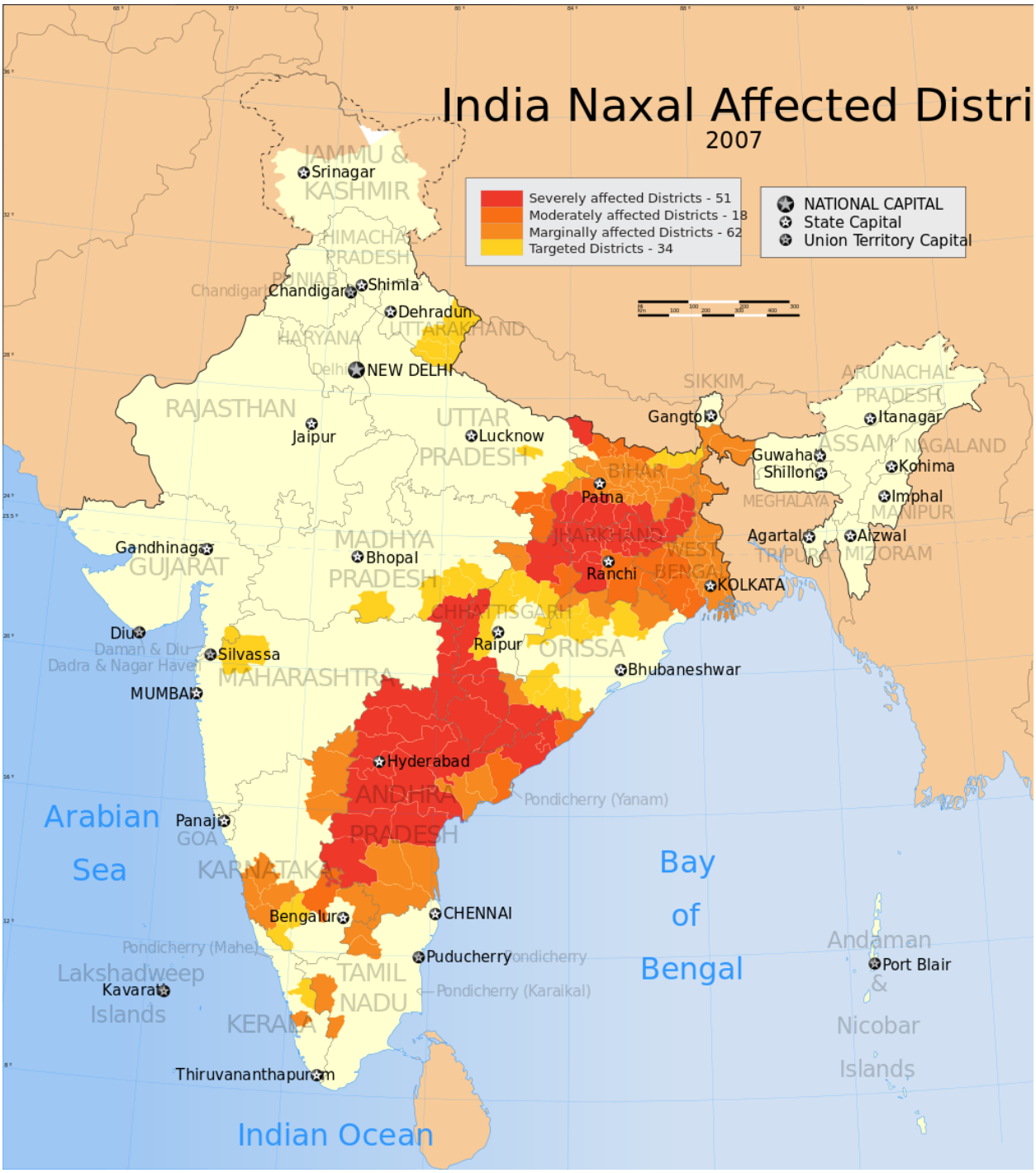


Figure A.2: Naxalite Affected Districts in India, 2007

Notes: This map shows the Naxalite conflict affected districts in India in 2007. Nepal is East of New Dehli. *Source:* Wikipedia: https://en.wikipedia.org/wiki/Red_corridor#/media/File:India_Naxal_affected_districts_map.svg.

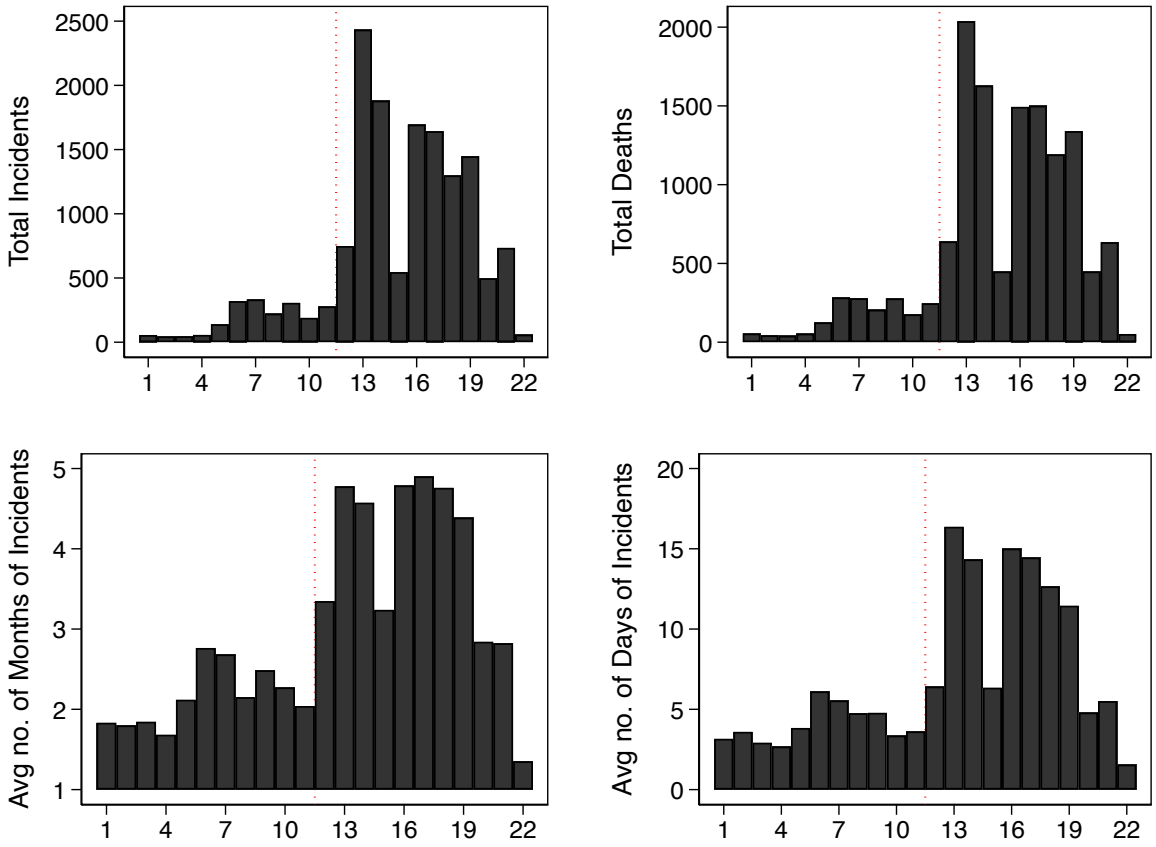
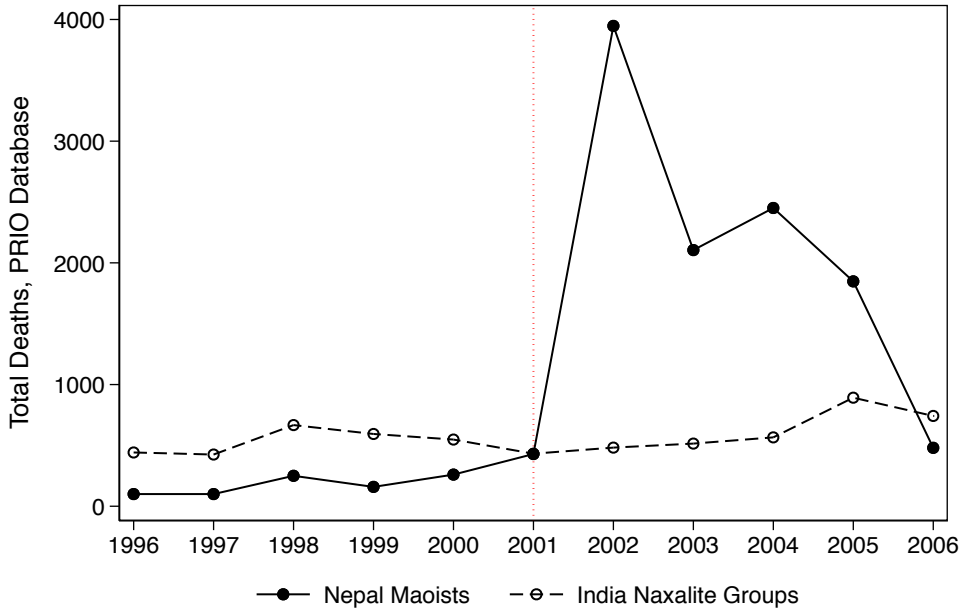
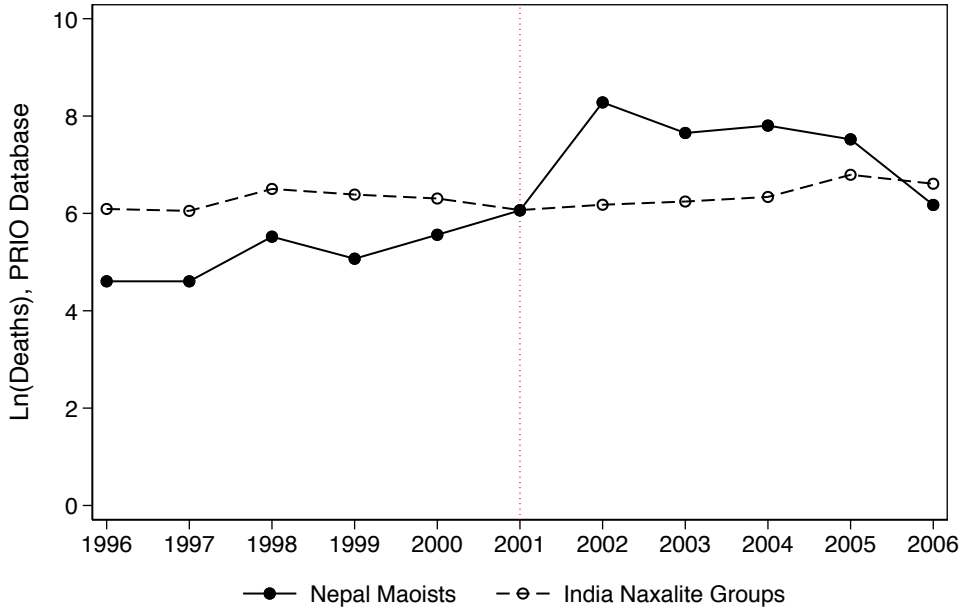


Figure A.3: Aggregate Conflict Outcomes by Six-month Intervals

Source: Author's calculation using Joshi and Pyakurel (2015).
Notes: Each bar reports the aggregate conflict outcomes for each six-month period between 1996 and 2006. *Total Incidents* includes deaths, disappearances, and injuries; *Total Deaths* are a subset of total incidents; *number of months* (*days*) of conflict is a measure that tallies the total number of district-months (-days) with at least one recorded incident in each six-month interval. The dotted vertical line represents the Royal Massacre, June 1^{st}, 2001. Period 12 aggregates conflict outcomes for the first seven-months after the Massacre (June - December, 2001), while period 11 aggregates over the last five-months before the Massacre (January - May, 2001). All other periods on the horizontal axis represent six-month intervals between 1996 and 2006. There were two cease-fires during this interval: first from August 3^{rd}, 2001 to November 23^{rd}, 2001 (spanning period 12), and second from January 29^{th}, 2003 to August 26^{th}, 2003 (spanning almost entire period 15).



Panel A: Total Number of Deaths



Panel B: Log of Total Deaths

Figure A.4: Trends in Conflict Related Annual Deaths, using PRIO's best estimate

Source: Author's calculation using PRIO Battle Deaths Dataset, v3.1 (Lacina and Gleditsch, 2005).

Notes: Panel A of this figure shows the trends in the total number of annual deaths due to CPN-Maoist related incidents in Nepal and Naxalite conflict related incidents in India. Panel B presents the trends in the logged series. Indian Naxalite groups used to calculate total deaths in India are Communist Party of India - Maoist (CPI-M), MCC, and Peoples War Group (PWG).

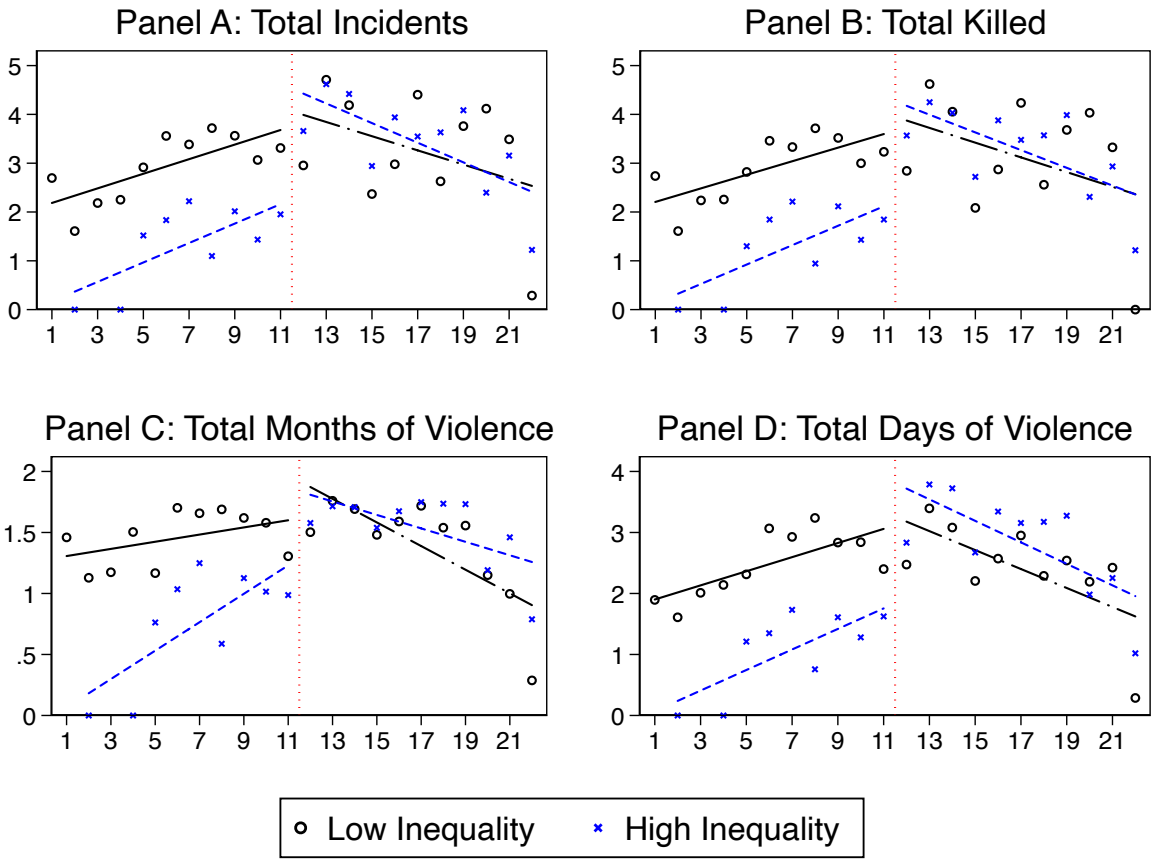


Figure A.5: Parallel Trends for above p75 and below p25 Gini Index Groups

Notes: Each panels shows trends between low and high-inequality groups by conflict outcomes. High-inequality group is composed of districts that have a Gini index larger than the 75^{th} percentile of the distribution of Gini indices, and low-inequality group is composed of districts that have a Gini index lower than the 25^{th} percentile of the distribution of Gini indices. See also Figure B.1.
Source: Author's calculation using Joshi and Pyakurel (2015).

Table A.1: Election Results for House of Representatives in the 1990s

	Votes	% of votes	Seats	% of seats
Panel A: 1991 Election				
Nepali Congress	2,742,452	37.75	110	53.66
Communist Party of Nepal (UML)	2,040,102	27.98	69	33.66
Rashtriya Prajatantra Party (Chand)	478,604	6.56	3	1.46
Others	2,014,002	27.64	23	11.22
Total	7,275,160		205	
Panel B: 1994 Election				
Nepali Congress	2,545,287	33.38	83	40.49
Communist Party of Nepal (UML)	2,352,601	30.85	88	42.93
Rashtriya Prajatantra Party	1,367,148	17.93	20	9.76
Others	1,358,966	17.83	14	6.83
Total	7,624,002		205	
Panel C: 1999 Election				
Nepali Congress	3,214,068	37.29	111	54.15
Communist Party of Nepal (UML)	2,728,725	31.66	71	34.63
Rastriya Prajatantra Party (Thapa)	899,511	10.44	11	5.37
Others	1,776,592	20.6	12	5.86
Total	8,618,896		205	

Source: http://archive.ipu.org/parline-e/reports/2229_arc.htm.
Abbreviations: UML - United Marxist-Leninist.
Notes: This table summarizes the results of the elections for 205 seats in the House of Representative (HoR) legislative body. The top three political parties, in terms of votes won, are shown. The Others group aggregates the results for the rest of the parties that won seats to the HoR. The total votes cast represents 66%, 61%, and 68% of total registered voters for 1991, 1994, and 1999 respectively. The elections in 1999 was the last general election held before the conclusion of the Civil War. The conflict spanned from 1996 to 2006.

Table A.2: Definition and Source of Regressors

Variables	Definition	Source
Gini1991	Gini index of ownership of farmland in 1991	CBS (1993)
Gini2001	Gini index of ownership of farmland in 2001	CBS (2003)
Top 10% Share	Share of total farmland owned by the top decile of owners	CBS (1993)
Avg FarmSize	Average size of the farm	CBS (1993)
Log GDPpc	Log of GDP per capita by each district	ICIMOD (1997)
Slopes	Per cent of land inclined more than 30 degrees	ICIMOD (1997)
Banks	Banks per capita normalized by population distance	ICIMOD (1997)
Roads	Kilometers of Roads per 100 sq kilometers	ICIMOD (1997)
Poffice	Post Offices per capita normalized by population disatance	ICIMOD (1997)
HDI	Human development index rank	ICIMOD (1997)
UPFn	UPF spillover effect (as defined in the paper)	Acharya (2009)
Log Population	Log of population	CBS (1993)
Nepsppc	Percent of Nepali Speakers	ICIMOD (1997)
CHHEpc	Percent of Hill Brahmins and Chettris ethnic groups	ICIMOD (1997)

Acronyms: HDI - Human Development Index; UPF - United Peoples Front; Nepsppc - percent of Nepali speakers; CHHEpc - percent of Chettri and Hill Brahmins ethnic groups.
Notes: Gini1991 is the main regressor of interest. *Gini2001*, *Top 10% Share*, and *Avg FarmSize* are alternate measures of inequality used in the robustness check section. The other variables are the list of control variables used in the regression.

Table A.3: Effect of Inequality on Conflict, *DD* estimates using first and fourth quartile inequality groups

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	DD				DL1	DL2	DL3
Panel A: Total Incidents							
$\hat{\delta}$	1.653**	1.881***	1.776***	1.776***	1.881***	1.029***	1.165
	(0.623)	(0.236)	(0.379)	(0.261)	(0.231)	(0.176)	(0.699)
Effect Size	5.223	6.560	5.906	5.906	6.560	2.798	3.206
R-squared	0.553	0.971	0.998		0.775	0.111	0.140
Panel B: Total Deaths							
$\hat{\delta}$	1.721***	1.943***	1.822***	1.822***	1.943***	0.876***	1.019
	(0.626)	(0.248)	(0.406)	(0.299)	(0.242)	(0.173)	(0.688)
Effect Size	5.590	6.980	6.184	6.184	6.980	2.401	2.770
R-squared	0.551	0.967	0.986		0.766	0.086	0.114
Panel C: Number of Days with Conflict							
$\hat{\delta}$	1.302***	1.517***	1.513***	1.513***	1.517***	0.346***	0.505
	(0.460)	(0.199)	(0.408)	(0.338)	(0.194)	(0.111)	(0.459)
Effect Size	3.677	4.559	4.540	4.540	4.559	1.413	1.657
R-squared	0.547	0.963	0.981		0.774	0.035	0.066
N	42	42	42	42	20	18	18
Period FE		x	x	x			
Control Variables			x	x			
AR(5)				x			

Standard errors in parenthesis; *p<0.10, **p<0.05, ***p<0.01

Notes: This table reports estimates for specification such as in equation (1) in columns (1)-(4), and equations (2) and (3) in columns (5)-(7). Districts are classified into high-inequality (those districts with Gini index above the 75^{th} percentile of the ditribution of Gini indices) and low-inequality (those districts with Gini index below the 25^{th} percentile of the distribution of Gini indices) groups. See also Table 8.

Table A.4: Effect of GDP on Conflict, DD estimates

	(1)	(2)	(3)	(4)	(5)	(6)
	Groups: above and below Median			Groups: above p75 and below p25		
Panel A: Total Incidents						
$\hat{\delta}$	1.549**	1.549***	-0.126	1.733***	1.852***	-0.032
	(0.627)	(0.229)	(0.461)	(0.604)	(0.276)	(0.688)
Effect Size	4.707	4.707	0.887	5.658	6.373	0.970
R-squared	0.575	0.972	0.991	0.580	0.959	0.982
Panel B: Total Killed						
$\hat{\delta}$	1.599**	1.599***	-0.131	1.764***	1.879***	-0.111
	(0.617)	(0.228)	(0.428)	(0.589)	(0.281)	(0.614)
Effect Size	4.948	4.948	0.878	5.836	6.547	0.896
R-squared	0.579	0.971	0.992	0.599	0.958	0.984
Panel C: Number of Days with Conflict						
$\hat{\delta}$	1.178***	1.178***	-0.009	1.388***	1.469***	0.044
	(0.418)	(0.175)	(0.177)	(0.446)	(0.196)	(0.637)
Effect Size	3.248	3.248	1.000	4.007	4.345	1.045
R-squared	0.565	0.962	0.996	0.601	0.966	0.983
N	44	44	44	43	43	43
Period FE		x	x		x	x
Control Variables			x			x

Standard errors in parenthesis; *p<0.10, **p<0.05, ***p<0.01

Notes: This table reports estimates for δ^{DD} from regression equation (1). Districts are classified into high-income (above the median per capita GDP) and low-income (all other districts) groups in columns (1)-(3), and high-income (districts in the fourth quartile of the distribution of per capita GDP) and low-income (districts in the first quartile of the distribution of per capita GDP) groups in columns (4)-(6). See also Table 8.

Table A.5: Estimates Using Various Definitions of Inequality, first and fourth quartile inequality groups

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	DD				DL2			
	Gini1991	Gini2001	Avg FarmSize	Top 10 Share	Gini1991	Gini2001	Avg FarmSize	Top 10 Share
Panel A: Total Incidents								
$\hat{\delta}$	1.881***	2.191***	2.362***	2.117***	0.505***	0.737***	1.347***	0.701***
	(0.236)	(0.254)	(0.243)	(0.259)	(0.113)	(0.136)	(0.138)	(0.172)
Effect Size	6.560	8.944	10.612	8.306	1.657	2.090	3.846	2.016
R-squared	0.971	0.963	0.973	0.967	0.05	0.072	0.238	0.057
Panel B: Total Killed								
$\hat{\delta}$	1.943***	2.180***	2.322***	2.198***	0.438***	0.483***	1.275***	0.641***
	(0.248)	(0.278)	(0.241)	(0.249)	(0.115)	(0.144)	(0.142)	(0.161)
Effect Size	6.980	8.846	10.196	9.007	1.550	1.621	3.579	1.898
R-squared	0.967	0.955	0.971	0.968	0.037	0.029	0.228	0.055
Panel C: Number of Days with Conflict								
$\hat{\delta}$	1.517***	1.811***	1.862***	1.699***	0.150*	0.386***	0.559***	0.255**
	(0.199)	(0.229)	(0.226)	(0.215)	(0.077)	(0.093)	(0.089)	(0.106)
Effect Size	4.559	6.117	6.437	5.468	1.162	1.471	1.749	1.290
R-squared	0.963	0.948	0.960	0.960	0.010	0.043	0.014	0.021
N	42	43	43	43	18	21	19	18
Period FE	x	x	x	x				

Standard errors in parenthesis; *p<0.10, **p<0.05, ***p<0.01

Notes: This table reports estimates for δ from equation (1) in columns (1)-(4) and equation (3) in columns (5)-(8). Districts are classified into high-income (districts in the fourth quartile) and low-Income (districts in the first quartile) groups. Columns (1) and (5) are baseline results from Columns (2) and (6) of Table A.3 respectively. See also Table 11.

B Common Trends Test

The difference-in-difference specification requires that there be common trends in the series of the two groups—commonly refered to in the literature as parallel trends. One way to get an idea of parallel trends is to look at the trends in the raw data. Figure B.1 presents the logged trends in the conflict outcomes for the high and low-inequality groups. For this exercise, the high-inequality group is defined as a group consisting of districts that have the Gini index higher than the median, else the districts are categorized as a low-inequality group. Figure A.5 shows the trends using groups that are in the 1st quartile (low) and 4th quartile (high) of the distribution of the Gini index. The vertical line represents the Massacre. The fitted lines before and after the Massacre show the trends in the two series. Unlike the trends between the CPN-M and Indian Naxalite series in the previous chapter, the conflict outcomes here are volatile making it difficult to ascertain if the two series have parallel pre-treatment trends.

We can conduct a more formal test to check if the pre-treatment trends in the two series are parallel. One way to judge this is to ask how different the "gap" between the two series is for other periods of conflict relative to a period before the Massacre. An ideal choice for the reference year is the last period before the Massacre. If there are significant differences in the gap between the two series in the other periods before the Massacre compared to the last period before the Massacre, then this would violate the parallel trends assumption. If, on the other hand, the gap in the pre-treatment period between the two series is not statistically different from the gap in the last period before the Massacre, then we may assume that the pre-treatment trends are parallel. To do this, I run the following regression:

$$\ln(y_{js}) = \alpha + \gamma_s + \varepsilon_{js}, \tag{6}$$

where γ_s are period-specific dummy variables. γ_s is the estimated difference in the pre-treatment trends between the two groups relative to a reference period.

Figure B.2 charts the values of γ_s from the above regression. The last period before the Massacre is the reference period in the regression. As before, the vertical line represents the Massacre. The first period after the Massacre is labeled as the "Event". As before, each periods is a six-month interval before the event (indicated in the figure as negative time values) or after the event (indicated in the figure as positive time values). The figure provides both the estimated difference and the 95% confidence interval around these estimates relative to the last period before the Massacre. In all panels, the difference between the high and low-inequality groups relative to the last period before the Massacre is not statistically significant in the pre-treatment period. More importantly, the trend in the two series in the three-and-half-years (or 6 periods) before the Massacre is very close. Given these estimates, we cannot reject the null that the pre-treatment trends are parallel. Additionally, it is reassuring to see that in this event study type formulation, the difference in the post-Massacre period is statistically significant immediately following the Massacre. Since the difference between the high and low-inequality groups is positive and significant, it implies that the high-inequality group had higher conflict outcomes relative to the lower-inequality group. This in discussed in detail next.

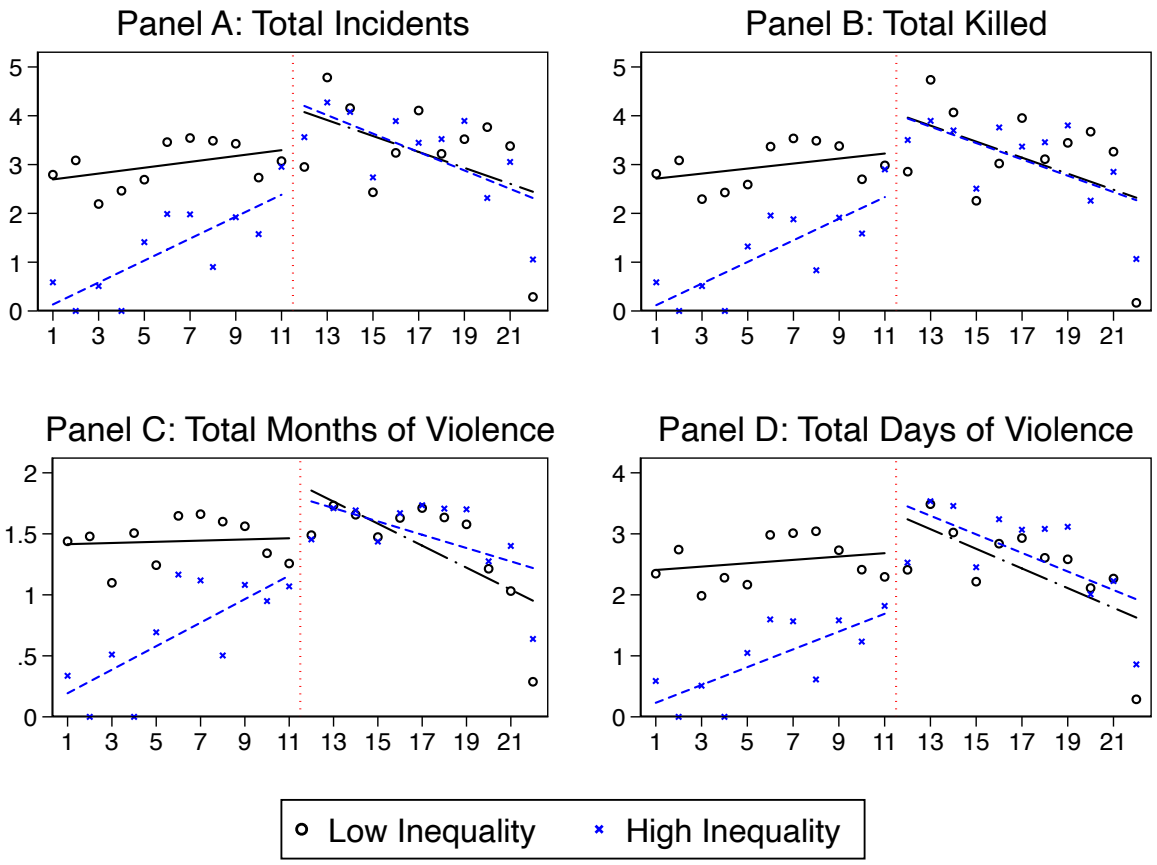


Figure B.1: Parallel Trends, eye-ball test

Notes: Each panels shows trends between low and high-inequality groups by conflict outcomes. High-inequality group is composed of districts that have a Gini index greater than the median Gini index, all other districts comprise the low-inequality group. Panel A measures the total number of incidents (deaths, disappearances, and injuries); Panel B measures the total number of deaths; Panel C tallies of the number of district-months with at least one recorded incident; and Panel D does the same for district-days. The dotted vertical line represents the Royal Massacre, June 1^{st}, 2001. Period 12, the first period after the Royal Massacre, aggregates conflict outcomes for the first seven-months after the Massacre (i.e. June 1^{st}, 2001 - December 31^{st}, 2001), while period 11 aggregates over the last five-months before the Massacre (i.e. January 1^{st}, 2001 - May 31^{st}, 2001). All other periods represent six-month intervals between 1996 and 2006. There were two cease-fires during the Civil War period: first from August 3^{rd}, 2001 to November 23^{rd}, 2001 (spanning period 12), and second from January 29^{th}, 2003 to August 26^{th}, 2003 (spanning almost entire period 15).
Source: Author's calculation using Joshi and Pyakurel (2015).

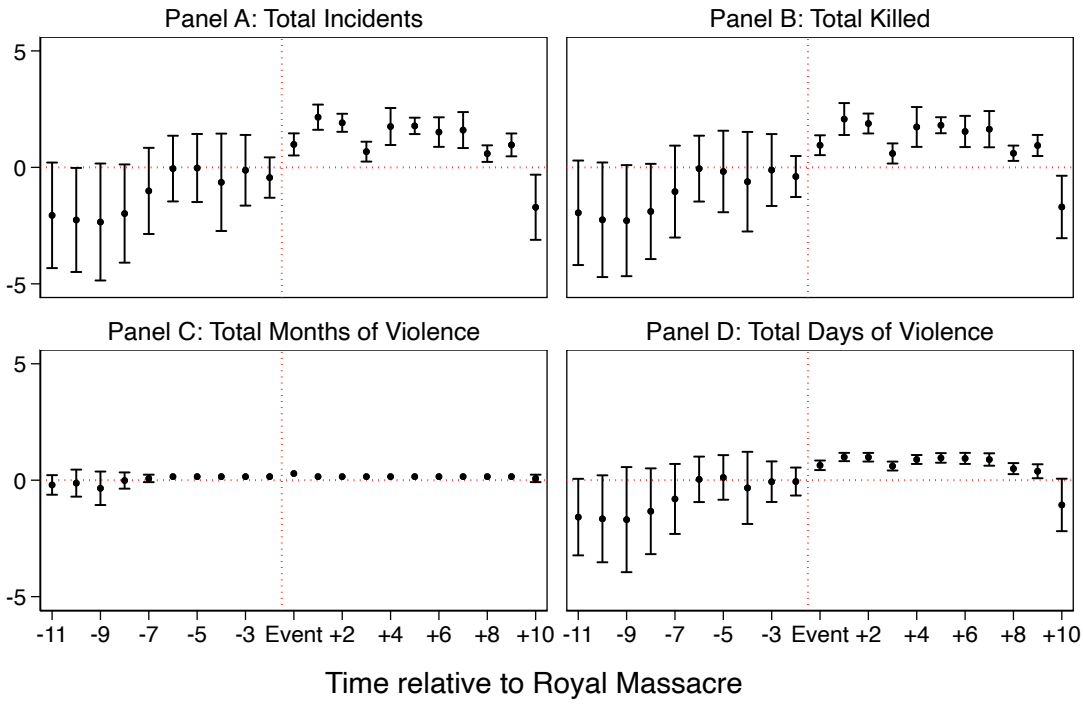


Figure B.2: Parallel Trends, formal test

Notes: This figure reports the γ_s from regression equation (6) for Total Incidents (TI), Total Deaths (TK), Total Days of Conflict (TD), and Total Months of Conflict (TM). The outcome variable is the Gini index of distribution of farmland from the 1991/92 Agricultural Census. High-inequality group is composed of districts that have Gini index greater than the median, all other districts comprise the low-inequality group. The reference period is the period before the conflict, or event time -1. See also Figure B.1.