Hearts and Minds: What explains the intensity of insurgent violence in India's NER?

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Abstract

India's Northeastern region (NER) is defined by some of the world's longest-running armed insurgencies, and a patchwork of special institutions defined on ethnic/tribal lines. Using an assembly constituency level panel dataset from 1994-2017, this paper examines the demographic, political and economic factors associated with high insurgent violence in the NER. The findings show that electing politicians with criminal records was associated with the lowest number of casualties in insurgent violence. In keeping with the counter-insurgency maxim of 'hearts and minds', higher water and electricity is associated with mildly lower intensity of violence. However, a 1 percent increase in the percentage of young, unemployed, college-educated males is associated with 25 percent higher casualties. I then focus on a case where an ethnic group secured an autonomous territory within an Indian state in 2003, under the terms of a peace accord between insurgents and the government. Using a geographic regression discontinuity design, I show that arrangements for ethnic autonomy and land rights reduce economic activity (measured by nightlights); but the gap reduced over from 1996 to 2017.

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1 Introduction

Ethnic conflicts in developing countries sometimes morph into armed insurgencies, often advocating for secession. There are currently three such active insurgencies in India: the Naxalite insurgency in central India, Kashmir and India's oldest continuing insurgencies in the Northeastern Region (NER). Northeast India is the name given to the geographically and administratively distinct region of seven contiguous states - Assam, Arunachal Pradesh, Meghalaya, Manipur, Tripura, Nagaland and Mizoram - on the country's eastern frontiers. This paper examines the impact of ethnic insurgency and political institutions on development outcomes in India's North Eastern Region (NER). This question is important to study because it is connected to the larger question of how a multi-ethnic federal democracy accommodates the demands of often-conflicting ethnic groups.

These NER states share 98 percent of their borders with five neighbouring countries, and only 27 km of boundaries with the Indian 'mainland'. Hills and mountains cover 54-92 percent of the area not part of the plains or river valleys; and forest cover is higher than the rest of India. Mostly rural, agrarian, large petroleum and coal deposits and plantations support one of the nation's poorest regions, with low levels of human development (Bhattacharya 2011). A large share of GDP of the states in the region derives from government expenditure; which in turn is financed mostly by transfers from the Central government. The more than 200 ethnic groups that inhabit the region had a long history of conflict among themselves and the British. These conflict erupted into multiple ethnic insurgencies after Independence, prompting military countermeasures with more than 20,000 deaths since 1992 (Cline 2006). There are currently 20 autonomous district councils in the NER, with the local government composed of the dominant ethnic group in that area.

This is related to the extensive literature on Maoist insurgency in India's heartlands, especially the impact of income shocks and government welfare programmes, most notably the NREGA (Fetzer 2019; Khanna and Zimmerman 2017; Vanden Eynde 2018; Dasgupta et al 2016). However, the armed forces are not involved in the Naxalite conflict, with law enforcement and paramilitary forces responsible for running operations. This is in addition to the large body of work in empirical studies of insurgency; which has established several factors which increase or temper existing levels of conflict: demographic composition, ethnic divisions, economic indicators including inequality, government provision of public goods, counter-insurgency (COIN) operations. (Berman et al 2011; Condra et al 2018). This is also related to the literature on ethnic politics, heterogeneous public

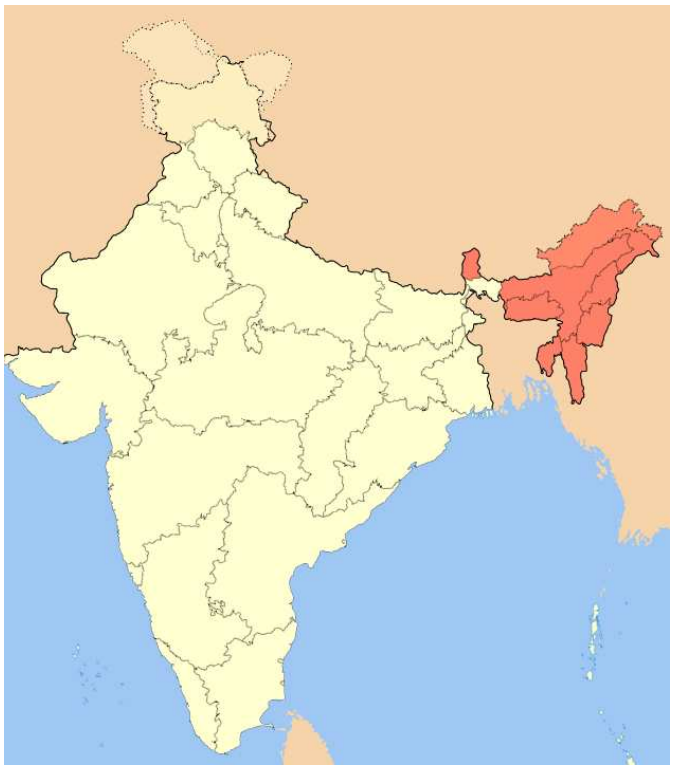


Figure 1: **India's Northeastern region (NER)**

goods provision and electoral violence in India (Banerjee and Somanathan 2007; Vaishnav 2017). However, there exists little empirical evidence on ongoing Indian insurgencies with military deployment. Kashmir, Assam, Nagaland, Manipur and parts of Arunachal Pradesh are the only places in India where the Armed Forces Special Powers Act (AFSPA) is in effect; empowering military personnel to detain, search, injure and kill suspected insurgents with immunity from prosecution.

I construct a spatial panel dataset of assembly constituency-level electoral and socioeconomic indicators from 1994-2017, using the SHRUG (Asher et al 2019) as the base dataset, and merge it with a geocoded dataset of insurgent incidents from the Global Terrorism Dataset (GTD). [1]. The final dataset contains information on demographic indicators and public goods and services from multiple rounds of the National Sample Surveys, the Indian government's largest periodic surveys and the population census. Keeping the yearly number of casualties as the dependent variable, I evaluate the effects of variables representing factors pointed out by the existing theoretical and empirical evidence of ethnic insurgencies. Conditional fixed effect models for count data show that

[1] https://www.start.umd.edu/research-projects/global-terrorism-database-gtd

for constituencies affected by insurgency, the election of criminal politicians is strongly associated with 57-69 percent lower overall casualties in insurgent violence. A 1 percent rise in the percent of unemployed, college-educated single males below 35 is associated with 25 percent higher casualties. Higher physical infrastructure - access to electricity and tapwater - is also associated with mild decreases in the intensity of insurgent violence/ strongest predictor of heightened violence is the share of educated, unemployed young males.

Historical institutions affect present-day insurgency and conflicts in developing countries (Besley and Reynal Querol 2014; Mukherjee 2017); especially given the strong empirical evidence pointing to the persistent development effects of colonial institutions in India (Banerjee et al 2005). The Northeastern region was ruled by British 'frontier' institutions - loose authority with tribal self-governing councils, similar to the FATA region of Pakistan(the erstwhile North West Frontier Provinces). These arrangements for tribal autonomy later crystallized into the Fifth and Sixth Schedules of the Indian Constitution, protective legislation aimed towards tribal populations. Haas et al (2020) conduct the first large-scale quantitative analysis of the effects of Schedule 5 status; but does not cover the NER, which is under the Sixth Schedule. Sharp geographic boundaries between districts demarcate areas with very different institutions. Indian citizens have to apply for permission to enter states covered under the Inner Line Permit System, and non-residents are constitutionally barred from purchasing land or property. These exist along with other affirmative action measures, including reserved positions in government employment, education and elections. In recent work, Haas et al (2020) and Miliff and Stommes (2020) exploit similar sharp geographical boundaries delineating different institutions to explore the effects of Schedule 5 status in Central India. Similarly, I set up a geographic regression discontinuity design, taking the area within a 10 KM buffer on each side of the boundary demarcating the the largest autonomous territory in Assam - the BTC. The BTC was established in 2003 by combining 4 contiguous districts of Assam, granting preferential land rights and local self government authority to the locally dominant Bodo ethnic group after a decades-long insurgency.[2] This provides a critical recent example of the Central government accommodating ethnic demands for territorial autonomy, after a long campaign of violent insurgency. The GRD seeks to establish the existence of a spatially discontinuous effect on economic activity - measured by high-resolution nightlight intensity data from 2016 - caused

[2]Prior to this, the territory was under Schedule 6 status but with lesser protections.

by the policies associated with Schedule 6 status. The identifying assumption is that except the Schedule 6 policy, there is no difference between areas close to the border from both the BTC and the bordering non-Schedule 6 districts. The specifics of the implementation are based on Cattaneo et. al (2017; 2020); using local linear regression around the cutoff-boundary, the average treatment effect on nightlights is -1.12 units. Repeating the analysis with values from 1996, it is shown that the size of the discontinuity reduced from -1.47. Thus, after the granting of protected status, Assam's largest autonomous zones for tribals had lesser economic activity because of the Schedule 6, but the gap was lower than the pre-treaty value.

Why do these findings matter? Recent work in development economics (Asher et al 2020) draws attention to the fact that mobility among India' Scheduled Tribes is among the lowest for any group in the population. The results of the current study tentatively support Haas et al's (2020) claim that political affirmative action raises welfare of the targeted communities geographically. However, equity and human development outcomes inside the territories is less certain. The prevalence of large-scale corruption, inequality, appropriation of developmental funds, preferential access to mineral resources and discretionary allocation of public goods points to a less optimistic interpretation (Cline 2006; Lacina 2007). Indian state borders were already relatively 'hard' (Mattoo et al 2018), but with the demand of more ethnic territorial protections a sharpening turn toward nativist policies is emerging.

The paper is organized into 7 sections. Section 2 delves into the historical and political background of different colonial institutions for tribal autonomy; the outlines of the insurgencies and ethnic political arrangements. Section 3 outlines the broad hypotheses suggested by prior theoretical work. Section 4 and 5 describes the data sources and the empirical strategy used. Section 6 presents descriptive results and regression results. Section 7 concludes while pointing out remaining work.

2 Background

2.1 Historical institutions: The Sixth Schedule

Regions in Colonial India had heterogeneous administrative regimes; most notably split between provinces administered directly by British laws and government, and the 'princely states' governed

by native, pre-colonial monarchies. These differences in historical institutions had persistent effects on social and economic outcomes till the modern, through variations in policies ranging from land tenure regimes (Banerjee et al 2005) to gender and education (Roy and Tam, 2016). A distinct set of institutions were in force in the subcontinent's remote frontiers - The North West Frontier Provinces and the North Eastern Frontier Agency and the Hill districts of Assam - inhabited mostly by tribal populations. The core principle was a policy of non-interference and tribal autonomy: these areas were outside the jurisdiction of the British Indian legal system, governed by tribal customs. In the Northeastern Region, the policy first took form in the Bengal Eastern Frontier Regulation (1873). The regulation delineated the edges of British-governed territory with an 'inner line' which prohibited "all citizens of India.... from going beyond such line without a pass". Mackenzie (1884) summarized that the colonial state's policy towards these areas and their inhabitants:

"... a Policy of absolute non interference - a withdrawal from all intimate relations with incorrigible savages. They might attend our markets if they came in peace, but we would not enter their hills or intrude on their quarrels."

Military expeditions into tribal territories - identified with the area's dominant tribe such as the Naga Hills and Mizo Hills - were expensive and did not yield clear benefits. The final equilibrium kept a semblance of British sovereignty by posting a Political Agent in each territory, or occasional punitive expeditions in retaliation for violence conducted on Indian citizens or British personnel. But effectively these regions were excluded from the reach of British institutions including taxes, courts and property rights and eventually. The eponymous Inner Line Permit is still in operation, as non-resident Indian citizens require the permission of state governments to enter these areas. Non-residents were - and are - prohibited from buying land in these areas. This separation between the 'hills and the valleys' originated much before the East India Company arrived in India. A large part of the NER had historically been territory with little effective state presence, 'non-state' or 'ungoverned' space (Callen et al 2015). Scott (1979) identifies the NER as part of the contiguous highlands of India and Myanmar, which had historically been settled by tribes who actively resisted the expansion of state authority. Institutions and economic structure varied sharply on the basis of geography: sedentary wet-rice agriculture and dense settlements in the flood plains and valleys were sites of 'state-making projects', while the higher-altitude (above 300 metres) regions were inhabited by tribes with flatter and decentralized structures of governance. They were fragmented

into small self-governing ethnic communities each with control over particular enclaves. Even pre-colonial valley states in mainland India, the plains Assam and China found it difficult to extend their authority into the hills beyond a point.

These distinctions crystallized in The Government of India Act (Excluded and Partially Excluded Areas) Order, 1936; where districts were classified into ordinary and excluded/partially excluded areas. Most of the hill areas of Assam were classified as the latter, and were exempt from the operation of the GoI 1936 Act. This meant that these areas were "directly administered by the Governor, and the elected Ministry have no jurisdiction over them (Reid, 1944)". The Act further excluded the NER from the nascent versions of representative democracy developing in India- provincial legislative councils which were chosen through elections. After Independence, these differentiated regimes became enshrined under the Fifth and Sixth schedules of India's Constitution, provisions for political affirmative action for ethnic groups centred around land ownership and local autonomy. Haas et al (2020) have exploited the sharp geographical boundaries demarcating Schedule 5 areas in Central India to empirically demonstrate that these are linked to real improvements in socioeconomic outcomes for the targeted groups Scheduled Tribes. The Excluded and Partially Excluded areas of Assam were under the Sixth Schedule, which consisted of Fifth Schedule provisions like land rights but also formalized arrangements for decentralized tribal government through elected autonomous district councils. These elected councils were empowered to levy some taxes and provide services; acting as quasi-states within states. The States Reorganization Act of 1956 re-organized India's states to create linguistically-homogeneous subnational units. [3] This acted as a catalyst for the tribes - also linguistic groups - in Assam's Scheduled areas to organize and agitate for autonomy, statehood and in some cases secession. From 1963 to 1987, four new states were carved out of the territory of Assam, and erstwhile Union Territories were granted full statehood.

2.2 Insurgency, COIN and politics

An insurgency is defined as an armed conflict between a group - defined on the basis of ethnicity in this case - and a conventional state with more than 25 battle deaths a year. India witnessed the eruption of multiple insurgencies not just in the NER, but also Punjab, Maoists and Kashmir.

[3] http://legislative.gov.in/sites/default/files/A1956-37.pdf

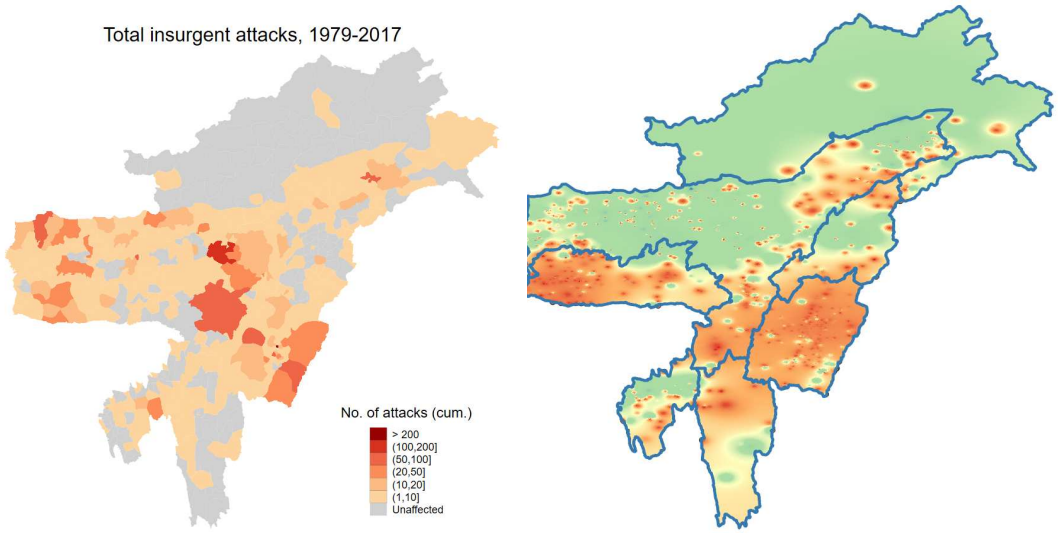


Figure 2: **Heatmap of casualties (1979-2017** Figure on left aggregates to AC level. Figure on right interpolates from points using inverse-distance weighted kriging.

Unlike Punjab and Kashmir, the 'NER insurgency' was not a homogenous movement, but consisted of numerous separate ethnic groups mounting insurgencies - often against one another. The Northeastern insurgencies had a lower ratio of military casualties than the Naxalite insurgencies (Lacina 2007). However, the three ethnic insurgencies were different from the Maoist insurgency in the fact that they were waged by 'native' ethnic groups in their subnational units. All of them were concentrated in areas with somewhat porous international borders, enabling insurgents to escape from state authority and import materiel from foreign sources. These separatist insurgencies were perceived as national security threats, and the government responded with military deployment. The legal framework for military campaigns in domestic territories was created by enacting the Armed Forces (Assam and Manipur) Special Powers Act, 1958, in response to the Naga insurgency. The Act empowered the central government to declare an area as 'disturbed' and authorize armed forces personnel to wield "special powers"[4]: "relating to the exercise of force for maintenance of public order: including the arrest, without warrant, of a person who has committed a cognisable offence; search, without warrant, of suspected premises to recover arms; and the authority to use force to injure or kill". Actions committed by any member of the armed forces in AFSPA enjoyed immunity from prosecution by civilian law enforcement.

[4]http://legislative.gov.in/sites/default/files/A1958-28.pdf

Table 1: Overview of insurgencies in India

Aspect	**Kashmir**	**Punjab**	**Northeast***	**Maoist**
Geographical area	Border	Border	Border	Inland
Duration	1989 - Present	1981 - 1995	1954 - Present	1967 - Present
Casualties (civilian)	∼14,000	12,000	10,302	∼8,000
Casualties (govt.)	5,462	1,417	2,762	2200-3440
Casualties (militant)	25,000	8,000	8,554	∼4,000
Forces	Military	Military	Military	Civilian
AFSPA invoked	1990 - Present	1983 - 1997	1958 - Present	No

Note: Compiled from various sources. *Aggregating for insurgencies in all states.

The first secessionist insurgency to seriously challenge the authority of the Indian state broke out in Nagaland in 1954. Within a few decades, more than 40 separate insurgencies were raging in the NER, with demands ranging from Sixth Schedule autonomy and statehood to complete secession. The patterns and intensity of violence varied, ranging from low-intensity hit-and-run conflicts, to occasional large-scale, coordinated military operations involving aerial support and cross-border strikes. It is important to emphasize that for tribes living in the NER's remote, heavily forested terrain with non-existent infrastructure, army bases and convoys brought the first traces of the public goods associated with modern states. Some conflicts resembled situations described in 'contest model' formulations (Grossman 1991), where the militants and armed forces competed and exercised parallel authority over civilian populations. In certain areas in Nagaland the major insurgent group (the NSCN) collected taxes from all household, including government employees. The insurgent groups often began as group-based political movements, but not always political parties. They often began as ethnic student unions that increasingly cropped up with the spread of modern education. The combatants - almost entirely military age males - were organized into quasi-military hierarchies, often trained and armed by older and larger insurgent groups in other states. As in other developing countries without automatic/rule-bound allocations of public goods, Indian politics hinges on group identity - castes, religious, linguistic and tribal groups within among states (Banerjee and Somanathan 2007). The factor that sets the NER apart from the other insurgencies is the backdrop of overall non-separatist conflict among ethnic groups

for political concessions. Insurgencies were often mobilized against civilians as well as insurgents from rival ethnic groups, in addition to unarmed riots, highway blockades and general strikes (called *bandhs*). The states of Assam, Manipur and Tripura witnessed unrest among hills-dwelling tribal groups as they demanded the creation of separate states or Schedule 6 territories within state.

Democratic governments fighting insurgencies cannot use indiscriminate military force against their own citizens, especially in contexts where it is difficult to distinguish insurgents from civilians. An extreme example of this kind of purely military shock-and-awe strategy was the use of airstrikes on population centres in Mizoram in 1966, in response to a series of coordinated attacks by Mizo insurgents.[5]. The AFSPA was enacted to free the army from the 'shackles' of civilian laws and political accountability. But widely publicized human rights abuses under the AFSPA antagonized civilian public opinion. Counter-insurgency strategy gradually transitioned to ceasefires and peace accords with insurgents, and a shift towards targeting incentives was seen through schemes such as the Surrender and Rehabilitation schemes enacted in 1998. This scheme offered cash incentives to 'misguided youth and hardcore militants who have strayed into militancy' for surrendering. It currently pays Rs.6000 per month to surrendered insurgents for three years, in addition to a grant of Rs. 400,000 to each insurgent in a bank. Interestingly, the policy is explicitly grounded in an opportunity cost framework, specifying the need to ensure that 'surrendered militants do not find it attractive to join militancy again". [6]

Political settlements for ethnic groups were negotiated with the insurgent leaders as well, who could serve as valuable assets to suppress violence and keep public order. In the Kashmir and Punjab insurgencies, the Central government had sought to secure the cooperation of local ethnic elites to suppress violence (Horowitz and Sharma, 2008). In the NER, such arrangements took the form of 'ethnic autocracy': "The Indian state has tolerated the erosion of democratic political institutions and the rule of law in the NE, by selecting leaders who fulfil only one objective of the Central government: to suppress violence, not necessarily against civilians, but against government/military targets" (Lacina 2007). The government seeks to accomplish this by handing political power to the the dominant ethnic group in an area, guaranteeing "near-exclusive access to public employment, business and trade licenses, rights to land ownership and exchange, and the right to seek elected

[5]http://articles.timesofindia.indiatimes.com/2011-03-05/guwahati/28659261$_1$*mizo* − *national* − *front* − *mnf* − *mizoram* − *myanmar*

[6]https://www.mha.gov.in/sites/default/files/NEdiv$_s$*chemes*$_S$*RE.pdf*

office". High voter turnout rates in elections in the NER showed that electoral politics had not been rejected as completely as in Kashmir (Baruah 2020); and India's electoral framework is already based on ethnic identity. As Vaishnav (2017) writes about North India: "Ethnic identity is the most important axis around which politics in India revolve.... tied to the prevalence of local 'strongmen' from particular castes, with the ability to substitute for the state, which 'contracts out' the monopoly of violence. Such criminal politicians enjoy public support and legitimacy in a context where social divisions are sharp, and the rule of law is weakly enforced." Most of these conditions apply to states in the NER as well, though ethnic/linguistic groups replace castes. Constituencies affected by insurgent incidents had elected criminal politicians in 50 percent of electoral contests. Interestingly, ACs which had not witnessed a single incident in the duration of the dataset were almost similar; 48 percent of elected legislators had criminal cases registered against them. On average, criminal candidates reported owning assets worth Rs. 94.7 million, compared to Rs. 23.7 million for non-criminal candidates . In summary, there is strong evidence that insurgent violence in the NER was suppressed by co-opting ethnic leaders capable of mobilising violence through political office and transfers.

2.3 The Bodoland Territorial Council

The most recent example of the mechanisms explained above was seen in 2003 with the creation of the Bodoland Territorial Council. A violent insurgent campaign was waged by militants from the Bodo ethnic group of Assam to demand a separate state, combined with sustained civilian protests. The major insurgent group - the Bodo Liberation Tigers Force (BLTF) surrendered and accepted the treaty in 2003; which set up a Sixth Schedule area of four contiguous districts in Assam where the Bodos would enjoy political quotas and land rights. The leader of the BLTF became the first Chief Executive Member (CEM) of the newly established BTC. However, only about 25 per cent of the total population in the BTC areas were actually from the Bodo ethnic group (Baruah, 2020). The Bodo-inhabited districts already enjoyed a measure of autonomy in 1993, but the push for more autonomy was justified as necessary to secure the benefits of development for the Bodos.

3 Theoretical framework

Counter-insurgency has been a systematic topic of study and theorizing for governments since the mid-20th Century; and theories developed in this 'practitioners' literature' still shape strategies allocating large quantities of resources and personnel to conflicts. Early work from the RAND corporation was instrumental in formulating the major COIN paradigm of the Indian military strategy, the 'Hearts and Minds' approach (Long, 2002):

"...impact of development and modernity on traditional societies causes the fragmentation of old institutions before new institutions are in place. This institutional gap creates problems, which can then give rise to insurgency. The insurgents could acquire almost everything they needed from the populace, progressively attenuating government authority and creating "counter-institutions" to provide what the government could or would not (e.g., taxation or social services). The prescription for success is therefore to win the public's support (their 'hearts and minds') for the government by ...speeding up the provision of modernity's benefits."

Blattman and Miguel (2010) offer a comprehensive look at the vast literature on the theoretical explanations for insurgency and civil war. Contest models (Grossman 1991) are generalisable models explaining costly conflicts among two actors for control of some output, applicable from insurgencies and wars to tournaments. Such descriptions are consistent with conflicts as desperate as low-intensity insurgencies - IEDs, ambushes - and conditions of almost 'total war' - with rival armies holding clearly defined territories. Low-intensity insurgencies, in contrast to civil war, narrow down the analytical choices. Berman et al (2011) developed one of the most detailed treatments in recent years, focusing on the US Army's experience with insurgents in Iraq through the lens of a three-player game between communities, rebels and government forces. They postulate the existence of a community-level exogenous parameter n, representing community norms which value independence or autonomy; quantitatively expressing a similar concept as resistance to 'state-making projects' by high-altitude ethnic settlements. In India's case, Khanna and Zimmerman (2017) develop microfounded models for the Naxalite conflict. The following hypotheses from prior theoretical work seem to be the most relevant:

1. Incentives to support the state

a. Public good provision Most researchers focus on the provision of public goods and services as the first step to winning the population's hearts and minds. In the early stages of development with a mostly rural population, provision of basic physical infrastructure like roads, electricity and piped water is essential; as well as efficient enforcement of property rights and contracts. Berman et al (2011) show that empirical evidence from Iraq supports this claim; that "improved service provision reduced violence"). **Thus, higher public good provision should be linked with lower violence levels.**

b. Insurgent elites and criminal politicians The ethnic autocracy mechanism tries to attract the support of insurgent leaders and other ethnic elites towards the government. They serve an important function in being able to mobilize electoral support among their ethnic groups, making them valuable political assets; and some or absolute control over violence waged by the ethnic group against the Government. Backed by a near-monopoly of violence as well as control over funds gained from 'taxation' or Central government funds, many of the winning candidates have criminal histories. **If the mechanism works, then electing criminal politicians should be associated with a decrease in insurgent violence.**

2. Opportunity cost theory

The opportunity cost approach says that insurgents are rational actors who can choose to supply labour for legitimate jobs or insurgent activities. As poverty and unemployment increase, there are few alternative opportunities to fighting as insurgents; i.e. opportunity costs decrease and there should be a rise in insurgent violence. (Berman et al 2011; Grossman 1991). This perspective offers the following hypotheses:

a. Youth bulges Urdal (2008) established that large youth cohorts increase the probability of political unrest and violence, especially in the presence of high unemployment, especially when combined with rising rates of college education. **A rise in the share of young, educated, unemployed males are more likely to increase insurgent violence.**

b. Income By the same logic, rising overall economic activity and prosperity should raise the opportunity costs of insurgency, and thus reduce violence. However, positive income shocks might increase the risk of conflict, as the 'prize' for capturing the state rises with the size of the pie. (Garfinkel and Skaperdas 2007) **The expected impact of economic output on violence is ambiguous.**

4 Data and Variables

Here, I combine data from multiple sources from 2005-2017 and different geographical/administrative units: the district and the assembly constituency (AC) level. Data is available at two different spatial levels: districts and smaller assembly constituencies (ACs) contained in them. I overlay districts and ACs and calculate the share of common area between them, assigning ACs to districts if a majority of the AC's area is within a respective district The final dataset consists of 466 ACs from 1994-2017, and the estimation in the current paper takes the period from 2005-2017.

1. Global Terrorism Dataset(GTD) : This is a spatio-temporal dataset of more than 1900000 terrorist incidents since 1970 (Lafree and Dugan 2007). The main dependent variable in the following regression is the cumulative number of casualties across all events in a year, created by the addition of two existing variables:

a. **Total fatalities**: This field stores the number of total confirmed fatalities for the incident. The number includes all victims and attackers who died as a direct result of the incident.

b. **Total injured** : This field records the total number of injuries among victims and perpetrators

I also create a variable for the spatially lagged number of casualties, obtained by multiplying the vector of observations with a spatial weights matrix, W, based on contiguity weights.

2. National Sample Surveys : For socioeconomic indicators – mainly landholding, employment and consumption expenditure, I use data from the 'thick rounds' of the National Sample Surveys from 1993-2011, along with the latest round of the Periodic Labour Force Survey (2017-18). The thick rounds have large sample sizes, and have been used for several large-scale analyses ; however certain issues exist for data from the NE states. Firstly, NSS data is representative at the district

level only from the 2004 round onwards, restricting the current exercise to the time span from 2005 onwards. Secondly, the surveys are not representative for Nagaland, where Agrawal and Kumar (2017) point out that faulty sampling and frame non-coverage make NSSO data inaccurate.

Youth Bulge I calculate the proportion of college-educated single males in each district who are below the age of 35 and unemployed at the time of the survey.

3. Population Census : I use data from the 2001 and 2011 Population censuses, interpolating values for years in between, and carrying values forward after 2011 and backward before 2001.

Linguistic fractionalization Tribal and ethnic groups in the Northeastern states are identified primarily as speakers of distinct languages. A district-level linguistic fractionalization index is calculated using Census 2001 and 2011 data on the number of speakers for each language, based on Alesina et al's (2003) fractionalization index.

Infrastructure score Two variables are extracted from Census 2001 and 2011 data, capturing the percentage of households with an electricity connection and with access to tapwater. These variables are then averaged and then scaled to 100, to create a 'score' of physical infrastructure. If the infrastructure score is 100 percent, it means that 100 percent of households enjoy access to electricity and tapwater.

4. SHRUG Asher et al (2019) combine data from several sources to create an open source, village-level panel of development data for India, called the Socioeconomic High Resolution Rural Urban Geographic (SHRUG) dataset for India. The SHRUG data is aggregated to the assembly constituency level and linked with AC shapefiles provided by Susewind (2014). I retain the variable recording the number of crimes declared on candidates' affidavits, compiled from data compiled by the Association for Democratic Reforms (ADR) and Prakash et al (2019). I also use the data on the the turnout percentage of state assembly elections for each AC, compiled by Jensenius and Verniers (2017) and the Trivedi Centre for Political Data. Each AC's reservation status - General, Scheduled Caste or Scheduled Tribe - is also recorded in a categorical variable. The affidavit data is only available from 2004 onwards, and the regressions are estimated over the period from 2005-2017.

Nightlight intensity I supplement the base dataset with the (Li et al 2020) data of calibrated nightlight intensity formed by combining and harmonizing the DMSP data from 1992–2013, and the VIIRS data from 2013-2017. They are available at a resolution of 1x1 sq km, and are aggregated to the AC and grid level.

Reserved Status A categorical variable records whether the AC is a non-reserved seat, or reserved for Scheduled Caste or Scheduled Tribes candidates.

Proportions and averages available at the district level are assigned to ACs, under the simplifying assumption that the ACs included in a district have attributes equal to the district average.

Table 2: Summary statistics

Variable	Unit	Obs	Mean	Std. Dev.	Min	Max
No. of casualties	Count	11,160	0.76	6.53	0.00	295.00
Criminal MLA elected	Binary	11,160	0.58	0.49	0.00	1.00
Turnout percentage	Percent	10,104	78.97	17.34	0.00	99.99
Percent in Youth bulge	Percent	10,646	2.84	1.96	0.00	13.85
Linguistic fractionalization	Proportion	11,160	0.48	0.24	0.03	0.90
Avg. nightlight intensity	Real number	11,160	5.78	10.37	0.00	62.50
Percent HH with access to tapwater	Percent	11,160	33.93	23.54	1.30	94.57
Percent HH with electricity	Percent	11,160	53.54	23.14	9.97	97.89
Infrastructure score	Percent	11,160	43.74	21.03	5.64	90.41

5 Empirical strategy

5.1 Panel Regressions

The dependent variable - the number of casualties - is a textbook example of a count variable with overdispersion. The distribution is shown in the kernel density plot in figure 3.

y_{it} is the count of casualties for observation in year t for group (AC) i. The initial model is $y_{it}|\gamma_{it} \sim$Poisson(γ_{it}), with $\gamma_{it}|\delta_i \sim$ gamma(λ_{it}, δ_i). δ_i is the overdispersion parameter, which is constant within each group, and λ_{it} is given by $\lambda_{it} = exp(x_{it}\beta + offset_{it})$. The equation for the

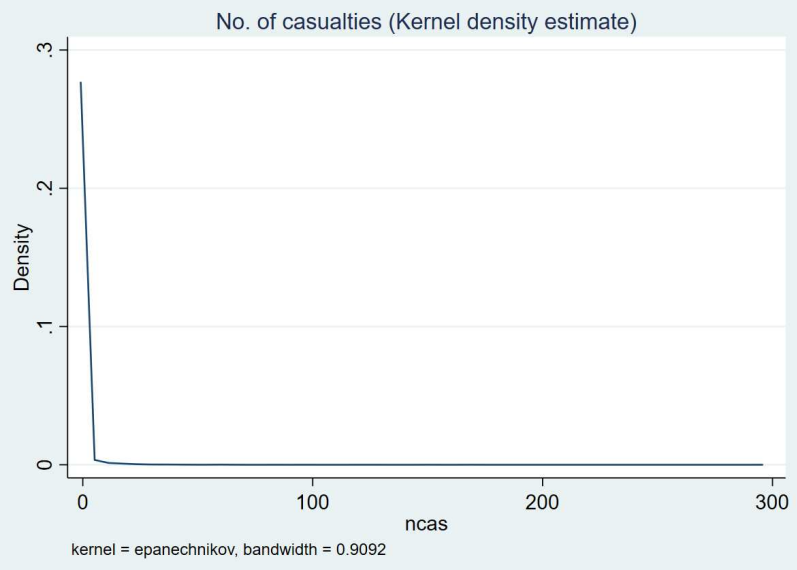


Figure 3: **Kernel density plot: number of casualties**

model is

$$P(Y_{it} = y_{it}|x_{it}, \delta_i) = \frac{\Gamma(\lambda_{it} + y_{it})}{\Gamma(1 + y_{it})\Gamma(\lambda_{it})} \left(\frac{1}{1+\delta_i}\right)^{\lambda_{it}} \left(\frac{\delta_i}{1+\delta_i}\right)^{y_{it}}$$

$$P(Y_{i1} = y_{i1}, ..., Y_{ini} = y_{ini}|X_i, \sum_{t=1}^{n_i} Y_{it} = \sum_{t=1}^{n_i} y_{it}) = \frac{\Gamma(\sum_{t=1}^{n_i} \lambda_{it})\Gamma(\sum_{t=1}^{n_i} y_{it} + 1)}{\Gamma(\sum_{t=1}^{n_i} \lambda_{it} + \sum_{t=1}^{n_i} y_{it} + 1)} \prod_{t=1}^{n_i} \frac{\Gamma(\lambda_{it} + y_{it})}{\Gamma(1 + y_{it})\Gamma(\lambda_{it})}$$

The fixed effects overdispersion model conditions the joint probability for the counts of casualties of each AC on the cumulative sum of counts for the AC. Allison and Waterman (2002) note that the Hausman, Hall and Grilliches (1984) panel negative binomial model implemented in Stata is not a true fixed effects model. If the objective is to check the significance of explanatory variables - opposed to predicting exact event probabilities which requires specifying the correct distribution - the Poisson fixed effects estimator is more robust than the negative binomial regression. So the regression is also estimated using a Poisson fixed effects model.

5.2 Geographic Regression Discontinuity

Geographic discontinuities in institutions have been used extensively to study differences in outcomes, most notably Dell's (2010) study of the Peruvian Mita. The closest relevant study is Haas et al's (2020) study of the effects of Schedule 5 status on village-level outcomes in mainland India. The identifying assumption is similar to that of the canonical (non-spatial) regression discontinuity

design, wherein units arbitrarily close to the cutoff on either side are expected to be similar in observed and unobserved characteristics. The GRD is a special case of a regression discontinuity design with multiple forcing variables, here the coordinates. The boundary between Schedule 6 and ordinary districts splits areas sharply into control and treatment zones. As these are political boundaries, the treatment - Schedule 6 status - is the switching 'on' of a policy when a border is crossed. The Northeast offers a unique area to study the effects of such restrictive, sharply delineated policies. Wouters and Tunyi (2018) also point out that "These borders also represent different fiscal regimes, India's Income Tax Act exempts certain communities in certain parts of India's Northeast from paying income tax. Under Section 10(26) of this Act members of a recognised Scheduled Tribe within the following areas: North Cachar Hills, Karbi Anglong, Bodoland Territorial Areas District, Khasi Hills, Jaintia Hills, Garo Hills, Arunachal Pradesh, Manipur, Mizoram, Nagaland, and Tripura are exempted from paying income tax, provided however that the person resides in that area and accrue his or her income from that area."

For current purposes, we are interested in trends in economic activity and urbanization - the fundamental factor behind increases in individual and community welfare. Nightlight emissions from the DMSP and VIIRS satellites are increasingly popular sources of data on economic activity, demonstrated to be highly correlated with actual output. I restrict attention to the boundary demarcating the state's largest Schedule 6 autonomous council, the Bodoland Territorial Council (BTC), formed by four contiguous districts. The BTC accord was signed in 2003 as a peace treaty to accommodate the autonomy demands of the Bodo ethnic group, after a long and violent insurgency.[7]

As shown in figure 4, the problem of compound treatments (Keele and Titiunik, 2014) does not arise when evaluating this boundary. The treatment and the control zones - the BTC, marked in red and adjacent regular districts in Assam - are within a non-ILP state under the jurisdiction of the AFSPA. This ensures that the treatment effect being estimated does not contain the impact of other policies.

I create and overlay a grid of 1 km x 1 km squares over the districts shapefile, and aggregate attributes from the VIIRS raster layers to the grid.[8] A 10 km buffer zone is constructed around borders demarcating the boundaries of the BTC and the rest of Assam's districts. Here the 'naive'

[7] https://web.archive.org/web/20120419131353/http://cdpsindia.org/btc$_a$*ccord.asp*

[8] This particular grid size is chosen to match the raw spatial resolution of the DMSP-VIIRS data.

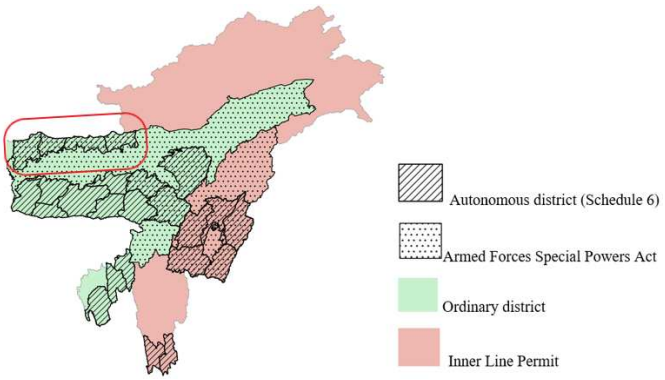


Figure 4: **Overlapping policy regimes.** GRD area is internal borders of BTC, marked in red.

distance is used to calculate bandwidths, i.e. the planar/Euclidean distance function. [9] These zones consist of a grid of 9,075 1x1 sq km polygons, with 4474 units in the Schedule 6 area (treated) and 4601 squares in the 'control' region (see appendix 9.2). The outcome variable is given by the intensity of nightlight emission, given by a Digital Number. Li et al (2020) provide DMSP-VIIRS harmonized layers, which makes values temporally comparable. I use two DMSP-VIIRS layers representing the annual averages for 1996 and 2017. The years almost overlap the timespan of the current dataset, represent a time period before and after the BTC treaty of 2003.

In a GRD design, grid unit i is treated ($T_i = 1$) if it is in the Schedule 6 BTC area (A_t) and not ($T_i = 0$) if it is in the 'control' area in an ordinary district (A_c). The treatment effect we seek to estimate is given by

$$\tau_i = L_{i1} - L_{i0}$$

However, the observable quantity is

$$L_i = T_i L_{i1} + (1 - T_i) L_{i0}$$

where L_i is the NTL intensity of square i

If the conditional regression function is a continuous function of the density of the distance variable at all points b on the boundary B, and treatment is a function of the score (distance) S_i

$$\lim_{s \to\ b} E(L_{i0}|S_i = s) = E(L_{i0}|S_i = b)$$

$$\lim_{s \to\ b} E(L_{i1}|S_i = s) = E(L_{i1}|S_i = b)$$

[9] Geodesic or chordal distances yield more precise estimates in GRD designs.

For every point b on the boundary - from the set of boundary points B - the geographic treatment effect is given by

$$\tau(b) = E(L_{i1} - L_{i0}|S_i = b)$$

$$= \lim_{s^t \to\ b} E(L_i|S_i = s^t) - \lim_{s^c \to\ b} E(L_i|S_i = s^c)$$

The average effect across all boundary points is obtained by integrating $\tau(b)$ across all boundary points. For more details, see Keele and Titiunik (2014). The estimation proceeds through a local polynomial regression of the observed outcome L on distance S, on the left and right limits around the cutoff point. The local polynomial has degree 1 in the current case, i.e. it is a local linear regression; and the discontinuity is sharp.[10]

6 Results

6.1 Descriptive statistics

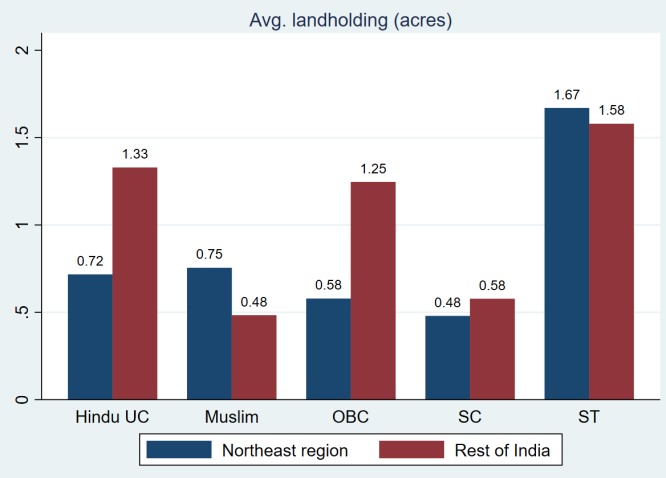


Figure 5: **Bar graph** Avg. landholding size in acres (National Sample Survey 2011)

The distribution of land and expenditure across social groups look sharply different for the NER. As figure 5 shows, for mainland India, the group with the largest average landholdings are

[10]There is at least one documented case of fuzzy behaviour in the case of Dimapur, where the ILP is activated several miles inland into the state. An official of the Assam Government affirms that Schedule 6 status in Assam is a sharp discontinuity, as every piece of land is associated with a land revenue office in either the BTC or the rest of Assam.

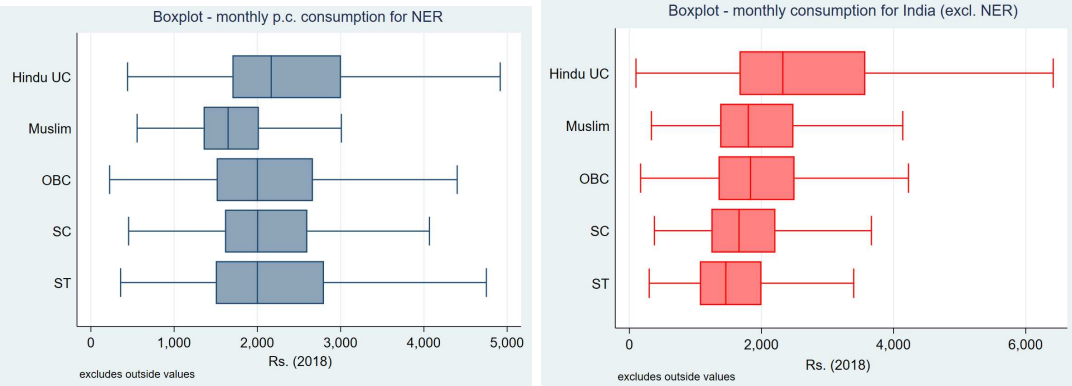


Figure 6: **Boxplot** MPCE by social group in NER and rest of India (Periodic Labour Force Survey 2018

Scheduled Tribes, with each household owning around 1.6 acres. This is largely because of their historic settlements in forest areas and dependence on primary produce. Patterns are sharply different for the states in the Northeastern region - excluding Sikkim. Scheduled Tribes own the largest landholdings, with a large gap between all other social groups. The distribution of land among non-tribals is more equitable than in mainland India, mainly due to the reduced landholding size among Hindu UCs and SCs. Hindu upper castes and OBCs are nearly tied for second place, with an average of around 1.3 acres per household, while Muslims and Scheduled Castes own the least land, less than 0.6 acres on average.

Figure 6 shows boxplots of consumption expenditure for the the four major non-Muslim social groups: Hindu upper caste, Other Backward Castes, Scheduled Castes and Scheduled Tribes. An important observation is that higher landholdings for STs do not necessarily translate into overall higher economic ouotcomes, as consumption levels for STs are the lowest among all social groups. Similar to landholdings, NE India is characterized by a more equal distribution of consumption expenditure. STs have higher consumption levels than in mainland India, at Rs. 2363, coming in a close second to Hindu UC's average expenditure of Rs.2633.

More than half of ACs never recorded a single incident of insurgency resulting in casualties (as per the GTD), administrative units consisting of 76 percent of the Northeast's area. At the district level, only 19 percent of districts never reported a single incident. This is an example of the Modifiable Areal Unit Problem (MAUP) when we aggregate spatial data to essentially arbitrary polygon units. (Fotheringham and Wong, 1991). To fully exploit the information offered by high-

resolution point data, I analyse the spatial patterns of insurgent attacks. 56 percent of all attacks had occurred within a radius of 10 km of urban centres, while the concentration around road infrastructure is even more starker - 74 percent of all incidents since 1979 had occurred within a buffer zone of 3 km from a major road. 70 percent of attacks were within a 1000- metre radius from a polling booth.

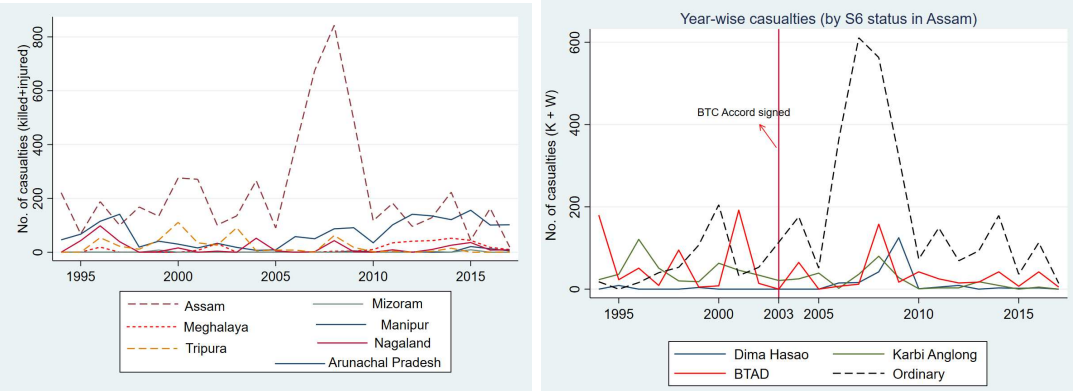


Figure 7: **Time series plots of casualties 1994-2017** Left figure plots for all states. Right figure plots for Sixth Schedule areas within Assam

The above figures indicate that taken by the absolute count of casualties, insurgent activities have declined during the span of the dataset. Assam saw the most violence, and within Assam the regular districts witnessed the highest number of casualties after the signing of the BTC accord.

6.2 Panel regressions

Table 5 in appendix 9.3 presents the regression results, in terms of incidence rate ratios (IRR), which give the exponentiated coefficients of the negative binomial regression. The IRR for variable x is the factor by which casualties increase or decrease, for every one unit increase in x, ceteris paribus. The following reports the results of conditional fixed effect count data models (negative binomial and Poisson models), which explain the *intensity* - not the incidence - of insurgent violence in affected ACs. The explanatory variables included are demographics, infrastructure, economic activity and fractionalization and election-related covariates from 2005-2017, for which affidavit data on candidates' assets and criminal history is available.

A highly significant overdispersion test establishes that the distribution of the count dependent variable is best fit using a negative binomial model. The negative binomial regression results

(table 5) show that an AC which elected a candidate with a criminal background witnessed 69 percent lower casualties from insurgent violence. A 1 percent higher turnout in the last election was associated with a 0.9 percent fall in casualties. A 1 unit rise in nightlight intensity is associated with a 2.7 percent rise in casualties, implying that increases in the size of the pie led to increased violence. This is consistent with the spatial distribution of insurgent attacks, concentrated around urban population centres. Scheduled Tribe constituencies experienced 256 percent higher casualties compared to non-reserved ACs.

The same specification is estimated using a Poisson fixed effects regression, with standard errors clustered at the Assembly Constituency level. Similar to the negative binomial regression, the largest inhibiting effect is associated with the election of a criminal candidate, leading to 57 percent lower casualties. A 1 percent rise in the infrastructure index is associated with 1.7 percent lower casualties. In contrast, a 1 percent rise in single, unemployed *college educated* males below 35 in the population is associated with a 25.5 percent spike in casualties. To account for the possibility of spatial spillovers, i.e., violent incidents in one AC raise the probability of heightened violence that nearby areas, spatial lags of the dependent variable. A positive, statistically significant result is revealed, and the other estimates do not become insignificant.

The casualties variable is zero for ACs which never witnessed a single insurgent incident, and in panel regressions the observations associated with the panel unit is be excluded from the estimation sample. In effect, these results answer the question "which factors affect the casualties in insurgent incidents, *given that the district has ever experienced an event*?" A more complete picture would need to accommodate sample selection, i.e. an equation which reflects the probability of being affected by insurgent violence. The bigger question in interpreting the results of the panel regression model relate to the direction of causality. These are not spurious correlations, and there would be strong reasons why these hypotheses hold so well. It is difficult to infer general conclusions about the factors causing variations in violence intensity, due to almost certain endogeneity: does unemployment lead youth to engage in armed violence, or do high levels of conflict suppress investment and trust? A slightly different reasoning applies to the variables for nightlight intensity. Do insurgents fight harder for bigger prizes when the size of the pie increases; or does the government pay more attention and investment to insurgency-wracked areas? Important variables must be incorporated into the analytical framework to record costs inflicted by government forces

on insurgents - arrests, surrenders and casualties.

6.3 Geographic Regression Discontinuity

The geographic regression discontinuity (GRD) shows that nightlights in 2016 show a significant discontinuity at the boundary between regular districts and the 6th Schedule (BTC) districts, with a sharp drop in the nightlight value as the border is crossed into the BTC area. Results are estimated using Stata's rdrobust package, presented in table 3.

Table 3: GRD estimates

	NTL 1996	**NTL 2016**
RD Estimate	-1.477***	-1.129***
Robust 95% CI	[-1.91 ; -1.04]	[-1.57 ; -.68]
Kernel Type	Triangular	Triangular
BW Type	MSERD	MSERD
Observations	9075	9075
Conventional Std. Error	0.221	0.228
Conventional p-value	0.000	0.000
Robust p-value	0.000	0.000
Order Loc. Poly. (p)	1.0	1.0
Order Bias (q)	2.0	2.0
BW Loc. Poly. (h)	1.476	1.476
BW Bias (b)	3.173	3.173

The point estimate for 2016 shows a 1.12 unit drop in median NTL values, significant at the 0.1 percent level (right column of table 2). Repeating the analysis with NTL values from 1996 yields a point estimate of -1.47, indicating that the discontinuity was larger. Figure 8 shows the discontinuity plots for the two estimates.

These results indicate two facts. First, Schedule 6 status depresses overall levels of economic activity. Second, following the BTC accord and granting of local autonomy to the dominant ethnic

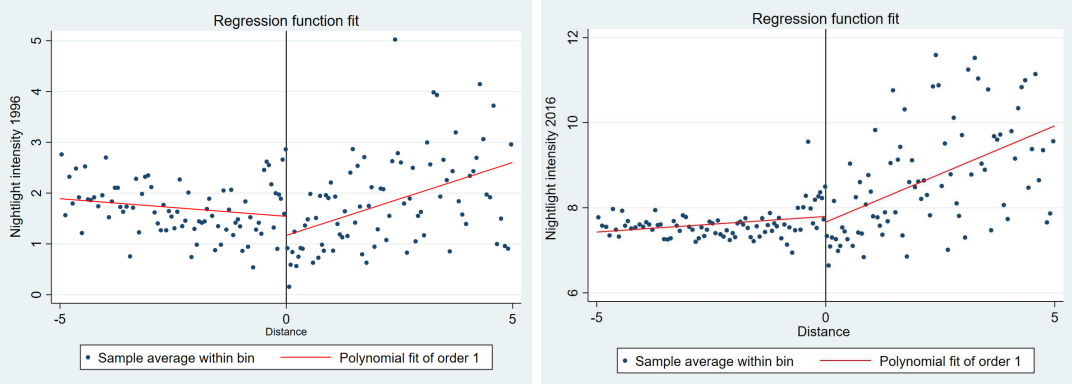
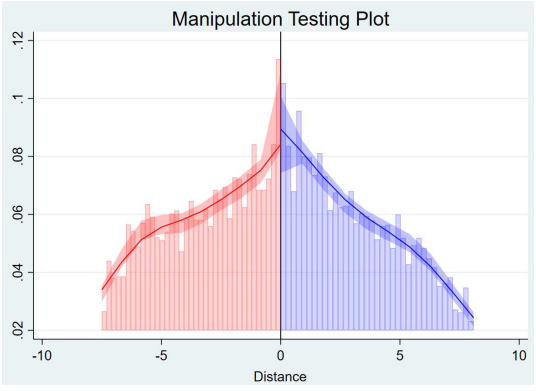


Figure 8: **Regression discontinuity plots, 1996 and 2016.** Quantile spaced mimicking variance number of bins using polynomial regression (QSMVPR). Evaluated within 5 km of border.

group, the size of the discontinuity reduced. This is preliminary evidence that preferential territorial policies for ST communities might help in reducing gaps in overall economic in comparison with areas inhabited by the dominant group in the state. However, improvement in human development outcomes cannot be automatically assumed from this evidence. Similarly, it is uncertain if the fruits of autonomy are shared equitably within and across groups .

Robustness Valid inference in regression discontinuity requires a test for manipulation, i.e. units close to the boundary must not be able to precisely sort into treatment/control zones. This is done by a test for continuity in the density of the rating variable at the cutoff. I use Cattaneo et al's (2017) test using local polynomial density estimation.

Figure 9: **Continuity test: Density of distance variable**



The Test statistic is -0.81, with a p-value of 0.41, rejecting the hypothesis of a discontinuity of

the running variable at the cutoff. Thus, the discontinuity is not being caused due to differential presence of settlements on one side of the boundary.

7 Discussion

The framework above needs augmentation to capture the complex phenomena associated with insurgencies in the NER. One such puzzling phenomenon is the existence of parallel governments run by insurgents, funded by extortion or 'taxes'. The Central government's pouring of development funds into the region is pilfered through corruption and appropriation by insurgents, bureaucrats and politicians - mostly acting in unison. For example, Wouters (2018) finds that the local operatives of Nagaland's main insurgent group keep computerized records of the exact amount and date of money deposited under the NREGA into the local Block Development Officer's funds. They then 'collect' their monthly share of funds, while the government officer pockets the rest. The interaction between the Centre, state governments, political movements and insurgents groups needs to be modeled in a parsimonious framework.

On the empirical side, data on surrenders, arrests, peace treaties, discretionary government expenditure and payments made to surrendered militants is crucial to forming a complete picture. Part of the requisite data can be extracted from online sources through text-mining techniques, while data on payments made under the surrender scheme is only available with the government.[11] Interviews with senior officials, politicians and ex-insurgents involved with some of the policies and negotiations would be invaluable qualitative evidence as well.

8 References

Li, X., Zhou, Y., Zhao, M., Zhao, X. (2020). A harmonized global nighttime light dataset 1992–2018. Scientific Data, 7(1), 1-9.

Berman, E., Shapiro, J. N., Felter, J. H. (2011). Can hearts and minds be bought? The economics of counterinsurgency in Iraq. Journal of Political Economy, 119(4), 766-819.

Cline, L. E. (2006). The insurgency environment in Northeast India. Small Wars Insurgencies,

[11] A request filed with the Central government's Ministry of Home Affairs under the Right to Information Act had been diverted to states, with no response yet.

17(2), 126-147.

Banerjee, A., Somanathan, R. (2007). The political economy of public goods: Some evidence from India. Journal of development Economics, 82(2), 287-314.

Banerjee, A., Iyer, L., Somanathan, R. (2005). History, social divisions, and public goods in rural India. Journal of the European Economic Association, 3(2-3), 639-647.

Dasgupta, A., Gawande, K., Kapur, D. (2016). (When) Do Anti-Poverty Programs Reduce Violence? India's Rural Employment Guarantee and Maoist Conflict. India's Rural Employment Guarantee and Maoist Conflict (April 22, 2016).

Fetzer, T. (2019). Can workfare programs moderate conflict? Evidence from India. Journal of the European Economic Association.

Vanden Eynde, O. (2018). Targets of violence: Evidence from india's naxalite conflict. The Economic Journal, 128(609), 887-916.

Asher, S., Lunt, T., Matsuura, R., Novosad, P. (2019). The socioeconomic high-resolution rural-urban geographic dataset on India (SHRUG). URL: https://doi. org/10.7910/DVN/DPESAK.

Besley, T., Reynal-Querol, M. (2014). The legacy of historical conflict: Evidence from Africa. American Political Science Review, 319-336.

Mukherjee, S. (2018). Colonial origins of Maoist insurgency in India: Historical institutions and civil war. Journal of Conflict Resolution, 62(10), 2232-2274.

Hausman, J. A., Hall, B. H., Griliches, Z. (1984). Econometric models for count data with an application to the patents-RD relationship (No. t0017). national bureau of economic research.

Haas, N., Haas, S., Pasquale, B. (2020). Does Political Affirmative Action Work, and for Whom? Theory and Evidence on India's Scheduled Areas. American Political Science Review.

Dell, M. (2010). The persistent effects of Peru's mining mita. Econometrica, 78(6), 1863-1903.

Condra, L. N., Long, J. D., Shaver, A. C., Wright, A. L. (2018). The logic of insurgent electoral violence. American Economic Review, 108(11), 3199-3231.

Keele, L. J., Titiunik, R. (2015). Geographic boundaries as regression discontinuities. Political Analysis, 23(1), 127-155.

Cattaneo, M. D., Titiunik, R., Vazquez-Bare, G., Keele, L. (2016). Interpreting regression discontinuity designs with multiple cutoffs. The Journal of Politics, 78(4), 1229-1248.

Kone, Z. L., Liu, M. Y., Mattoo, A., Ozden, C., Sharma, S. (2018). Internal borders and

migration in India. Journal of Economic Geography, 18(4), 729-759.

Lacina, B. (2009). The problem of political stability in Northeast India: Local ethnic autocracy and the rule of law. Asian survey, 49(6), 998-1020.

Milliff, A., Stommes, D. (2020, September 18). Descriptive Representation and the Dark Side of Conflict Reduction: Evidence from India's Maoist Rebellion. https://doi.org/10.31235/osf.io/gfh3m

Callen, M., Gulzar, S., Rezaee, A., Shapiro, J. N. (2015). Choosing ungoverned space: Pakistan's frontier crimes regulation. UCSD mimeo.

Mackenzie, A. (1884). The North-East Frontier of India (Reprint).

Gary LaFree Laura Dugan (2007) Introducing the Global Terrorism Database, Terrorism and Political Violence, 19:2, 181-204,DOI: 10.1080/09546550701246817

Scott, J. C. (2009). The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia. Yale University Press.

Reid, R. (1944). The excluded areas of Assam. The Geographical Journal, 103(1/2), 18-29.

Wouters, J. J. (2018). In the shadows of Naga insurgency: Tribes, state, and violence in Northeast India. Oxford University Press. Additionally, the Central government policy of paying insurgents to surrender might have created skewed incentives.

Wouters, J. J., Tunyi, Z. (2018). India's Northeast as an internal borderland: domestic borders, regimes of taxation, and legal landscapes.

THE ARMED FORCES (SPECIAL POWERS) ACT, 1958. Government of India

Fotheringham, A. S., Wong, D. W. (1991). The modifiable areal unit problem in multivariate statistical analysis. Environment and planning A, 23(7), 1025-1044.

Khanna, G., Zimmermann, L. (2017). Guns and butter? Fighting violence with the promise of development. Journal of Development Economics, 124, 120-141.

Horowitz, S., Sharma, D. (2008). Democracies fighting ethnic insurgencies: Evidence from India. Studies in Conflict Terrorism, 31(8), 749-773.

Allison, P. D., Waterman, R. P. (2002). Fixed–effects negative binomial regression models. Sociological methodology, 32(1), 247-265.

Baruah, S. (2020). In the Name of the Nation: India and Its Northeast. Stanford University Press.

Alesina, A., Devleeschauwer, A., Easterly, W., Kurlat, S., Wacziarg, R. (2003). Fractionaliza-

tion. Journal of Economic growth, 8(2), 155-194.

Vaishnav, M. (2017). When crime pays: Money and muscle in Indian politics. Yale University Press.

Blattman, C., Miguel, E. (2010). Civil war. Journal of Economic literature, 48(1), 3-57.

Urdal, H. (2006). A clash of generations? Youth bulges and political violence. International studies quarterly, 50(3), 607-629.

Long, A. (2002). On" other war": lessons from five decades of RAND counterinsurgency research. Rand Corporation.

Berman, E., Callen, M., Felter, J. H., Shapiro, J. N. (2011). Do working men rebel? Insurgency and unemployment in Afghanistan, Iraq, and the Philippines. Journal of Conflict Resolution, 55(4), 496-528.

Prakash, Nishith, Marc Rockmore, and Yogesh Uppal, "Do criminally accused politicians affect economic outcomes? Evidence from India," Journal of Development Economics, 2019.

Jensenius, Francesca R and Gilles Verniers, "Studying Indian politics with large-scale data: Indian election data 1961–today," Studies in Indian Politics, 2017, 5 (2).

Grossman, H. 1991. "A General Equilibrium Model of Insurrections." American Economic Review 81:912-21.

Garfinkel, Michelle R., and Stergios Skaperdas. 2007. "Economics of Conflict: An Overview." In Handbook of Defense Economics, Volume 2, Defense in a Globalized World, ed. Todd Sandler, and Keith Hartley, 649–710. Amsterdam and Oxford: Elsevier, North-Holland.

Luiz Paulo Fávero PatrÌcia Belfiore, 2018. "OVERDISP: Stata module to detect overdispersion in count-data models using Stata," Statistical Software Components S458496, Boston College Department of Economics.

Roy, S., Tam, H. F. (2016). Princely states and gender differential in human capital invesment.

Susewind, R. (2014). GIS shapefiles for India's parliamentary and assembly constituencies including polling booth localities.

Sebastian Calonico Matias D. Cattaneo Max H. Farrell Rocio Titiunik, 2018. "RDROBUST: Stata module to provide robust data-driven inference in the regression-discontinuity design," Statistical Software Components S458483, Boston College Department of Economics, revised 06 Apr 2020.

9 Appendix

9.1 Descriptive statistics

Table 4: Cumulative percentage of casualties, by intended target of incidents (NER, 1994-2017)

Target type	Target	Casualties (percent)
Civilian	Business	12.3
	Educational inst.	3.0
	Private citizens and property	31.0
	Religious figures	0.7
	Journalists/media	0.8
Government	Govt. (general)	14.1
	Military	9.7
	Police	10.0
Infrastructure	Transportation	5.5
	Utilities	1.9
	Telecom	0.1
Others	NGO	0.3
	Terrorists/non-state militia	2.2
	Violent Political party	1.3
	Unknown*	7.1

9.2 GRD dataset construction

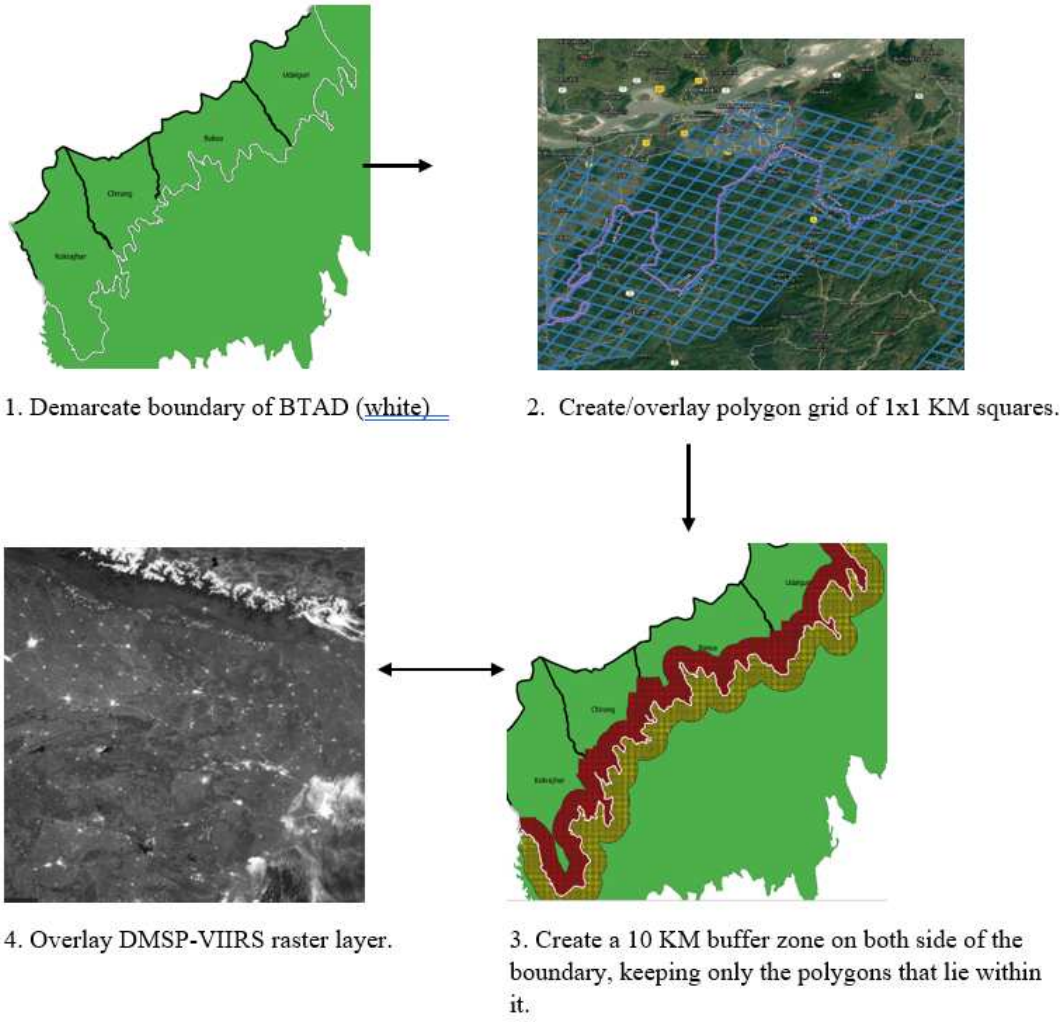


Figure 10: Steps in constructing GRD dataset.

9.3 Regression results

Table 5: Conditional fixed effect panel regressions

Dependent variable: Total casualties	**(1)**	**(2)**
	Negative binomial	**Poisson**
Criminal MLA	0.309***	0.426ˆ
	(0.08)	(0.19)
Turnout Percentage	0.99*	1.006
	(0.00)	(0.01)
% unemployed male graduates below 35 years	0.986	1.255*
	(0.04)	(0.13)
Linguistic fractionalization	0.642	0.003
	(0.21)	(0.01)
Avg. nightlight intensity	1.027***	1.032
	(0.01)	(0.02)
Infrastructure score	0.998	0.983ˆ
	(0.00)	(0.01)
AC type		
Scheduled Caste	1.03	1.000
	(0.638)	(.)
Scheduled Tribe	2.56***	4.728***
	(0.42)	(1.30)
Observations	2160	2160
Clustered S.E	No	Yes
Year fixed effects	No	Yes

Note: Exponentiated coefficients/ Incident rate ratios. 257 groups (2882 observations) dropped because of all zero outcomes. Exposure variable is year. Column (1) is estimated using a fixed effects negative binomial estimator, on a balanced assembly constituency-level annual panel from 2005 to 2017. Estimation sample only contains ACs with variation in the dependent variable. Column (2) presents results from a Poisson fixed effects estimator, with standard errors clustered at the AC level, and year fixed effects. $^{p} < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001$