COLONIAL ORIGINS OF MAOIST INSURGENCY IN INDIA: LONG TERM EFFECTS OF INDIRECT RULE

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Acknowledgements:

1. Introduction

In this dissertation I try to answer the puzzle of why the Maoist insurgency in India, which is considered to be the most important internal security threat to the world's largest democracy, occurs in certain districts in India and not others. To restate the puzzle described in the Introduction Chapter, why did the insurgency emerge and consolidate along certain districts in the central-eastern part of India and not in other areas? Why are certain districts affected by the insurgency and not others? Is it as Fearon and Laitin (2003) would argue, purely because of opportunities for rebellion being present in some areas of India in the form of forest cover or mountainous terrain? Is it because of the fact of rebellious tribes or oppressed lower castes facing horizontal inequalities living there as theorized by Murshed and Gates (2005)? Is it as Gurr (1970) would argue because these areas are poorer or with higher levels of economic inequality than others? Yet there are other areas of the country which have similarly high forest cover, poverty, and socio-economically deprived ethnic groups like *dalits* (lower castes) and *adivasis* (tribal people), and yet have no Maoist insurgency. Is it as Teitelbaum and Verghese (2011) have recently argued because of colonial direct rule setting up the caste structures and poor quality civil services leading to Maoist insurgency in India? But the Maoist insurgency occurs in certain districts of states like Andhra Pradesh, Chhattisgarh and Orissa where there was indirect rule through native princes, rather than direct rule. None of these existing theories can fully explain the spatial variation in Maoist insurgency in India. There must be some other omitted variable which explains the full extent of this unusual spatial variation.

My dissertation theorizes that different forms of colonial indirect rule, whether landlord (political intermediary) based *zamindari* land revenue system, or more formal indirect rule through native princes, set up the long term structural conditions conducive to ideological insurgency. As Lange (2009) notes, "some of these collaborative forms of rule were formally recognized as indirect rule, while others were categorized as direct despite some telltale signs of indirect rule (e.g. administrative dependence on patrimonial collaborators). Whether classified by colonial officials as direct or indirect, all forms of collaboration severely limited the state's infrastructural power and level of bureaucratization and empowered local intermediaries." (p. 176-177)

Kohli (2004) too describes these different arrangements of indirect rule between the British colonizers and indigenous elites. According to Kohli (2004), "After subduing one area and then another, the British entered into a variety of arrangements with influential 'natives' – generally members of traditional ruling classes – to facilitate the essential tasks of collecting taxes and securing order. In some parts of India (e.g., in the Bengal presidency) this arrangement involved British rulers in alliance with Indian zamindars (landlords). ... This ingenious arrangement of indirect rule served the British purpose very well in securing predictable revenues and long term ruling allies. Indeed, once they perfected the model in India, the British transferred it to such other colonies as Nigeria. At the same time, however, the arrangement also limited the downward reach of state power, leaving much influence in the hands of traditional elites, and it was also detrimental to the development of the agrarian economy. In other parts of India, especially in Western India, for example, British rule was more direct and reached deeper into Indian society, with British civil servants being directly responsible for collecting taxes from peasant proprietors. ... And in yet other parts – in as much as two-fifths of India – the British left the local princes in place, allowing them considerable latitude in terms of how they governed as long as they accepted British sovereignty and agreed to pay tribute." (p. 225-26)

Areas of initial Maoist control in the 1980s & 1990s, were correlated with areas which had British indirect rule through princely states in the states of Chhattisgarh, Andhra Pradesh and southern Orissa, and with areas which have colonial *zamindari* (intermediary landlord) land tenure systems in Bihar, Jharkhand and West Bengal. While the princely state areas in Chhattisgarh and Andhra Pradesh were formal manifestations of indirect rule, the *zamindari* land tenure system in Bihar and Jharkhand were informal but indirect forms of economic and political control, in which land revenue was collected and local governance was conducted through intermediary landlords and local political elite by the British colonizers. Both areas had some form of Maoist insurgency in the future. This leads me to theorize that colonial institutions of indirect rule explains the spatial variation of initial Maoist influence, before the Maoist movement rapidly expanded following the merger of the two main factions the MCC and PWG in 2004.

In the last chapter (Chapter 4), I outlined the history of gradual British conquest and expansion of British colonial empire in India, starting from 1757 to the Indian Mutiny of 1857. I also described the different phases of British expansion, and how the British policy makers changed their overall policy about whether or not to use different types of indirect rule. There were two main types of indirect rule created by the British. The more formal one was indirect rule through *princely states*, which involved the British allowing an Indian prince, or rajah, or Nawab, to continue to rule in the area where his ancestors had ruled, while the British had control over foreign and financial policy of the state. The less formal one was indirect rule through *zamindari landlord tenure* in which the British officially ruled directly by setting up their own governance, but even then depended on local political intermediaries or landlords to collect land revenue, and do some basic administration on their behalf.

Following this, I described the theoretical framework of how colonial indirect rule sets up conditions for ideological insurgency, specific to the Maoist case in India. I argued that these two forms of British colonial indirect rule—(i) *zamindari* (zamindar or landlord intermediary based) land tenure and (ii) princely states (states ruled by Indian princes under British paramountcy)—set up the *political opportunity structures* that persist into the post colonial period though path dependent causal pathways, and lead to Maoist insurgency in the post colonial period. While the *zamindari landlord tenure* system created conditions of lower bureaucratic penetration, and also land / caste inequality, the *princely states* tended to have lower levels of government institutions, and also often had tribals who were ignored and neglected and untouched by modern bureaucratic institutions. Each type of colonial indirect rule triggered off a separate causal pathway that set up conditions for post colonial insurgency.

As described in Chapter 3, there were two geographic epicenters of Maoist control, one in the north and one in the south. The two geographic epicenters of Maoist mobilization represent the two different causal pathways that led to successful Maoist mobilization in India. The northern epicenter of insurgency occurred in areas of erstwhile informal British indirect rule through landlord (*zamindari*) type tenure, which also had a social structure consisting of a ranked caste system with oppressed *dalits* (socially oppressed lower castes), and these led to the Naxal mobilization in the plains of central Bihar, eastern Uttar Pradesh, and western Bengal. The southern Bihar area,

which later on became Jharkhand had this same combination of colonial institutions, except that the ethnic structure was dominated by tribes, not lower castes, and there was more natural resource exploitation. Both these areas had successful Naxal mobilization post 1980s, mainly by the Maoist Communist Center (MCC), but also by the People's War Group (PWG) and many other smaller CPI-ML (Communist Party of India-Marxist Leninist) factions.

The southern geographic epicenter of the insurgency representing the second causal pathway occurred in areas of formal British indirect rule through princely states, and these were mostly areas with different adivasi (tribal) populations, as well as some dalit (scheduled caste) populations in central-southern India. These areas coincide geographically with the indirect ruled princely state areas of Bastar and Surguja in the current state of Chhattisgarh, the Telangana region of former Hyderabad princely state in current state of Andhra Pradesh, and some princely state areas like Bolangir in Orissa. In this southern epicenter of the insurgency, in the deeply forested area popularly called the Dandakaranya zone by the Maoists, near the borders of the states of Chhattisgarh, Andhra Pradesh, Maharashtra, and Orissa, the People's War Group (PWG) emerged as the main Maoist rebel group since the 1980s. This area was predominantly under the control of the People's War Group (PWG), though other Maoist factions like Party Unity (PU) also operated here, till they united with the PWG. The Maoist Communist Center (MCC) was not as strong here, and the movement was more consolidated and unified, and not as factionalized as in the northern epicenter.

My theory proposes that historically rooted structural variables to a large extent influence the possibility of successful Maoist mobilization in the 1980s. The British colonial institution of indirect rule, set into motion causal pathways that persisted after independence of India in 1947, and set up the *political opportunity structures* that were needed for successful Maoist rebellion in the 1980s, after the initial failure of Naxalism in the late 1960s. Other opportunity variables like proximity to borders and access to forest cover played a crucial role, as did the level of under development, and the presence of socio-economically exploited scheduled castes and neglected scheduled tribes in assisting the Maoist leaders to recruit. But these opportunity and grievance variables are not sufficient to explain the full breadth of Maoist mobilization in India.

They were only parts of a long causal chain tracing back to these colonial institutions of different types of indirect rule.

Having outlined the theoretical framework in the last chapter, the argument is tested econometrically in this chapter on an all India district level dataset. I use unique Ministry of Home Affairs data as a measure of the dependent variable of Maoist control. Unlike other econometric studies of Maoist insurgency like Teitelbaum and Verghese (2011), Kulkarni (2011), Chandra (2011), Vanden Eynde (2011), and Gawande, Kapur and Satyanath (2012) which use measures of violence as their dependent variable, I do not use such violence data from the mid 2000s for two reasons. First, violence is only the most visible aspect of insurgency and does not measure actual Maoist rebel control, which is a more multi dimensional concept. Second, violence data used by these scholars does not measure the initial emergence of insurgency in the 1980s and 1990s, which is my dependent variable. The results of my econometric analysis show that those districts that had *zamindari* land tenure or princely state rule tend to have higher probability of Maoist insurgency in the post colonial period, even after controlling for various factors like terrain, poverty level, land inequality, percent of scheduled tribes and castes in each district, and other factors that have been suggested to correlate with Maoist insurgency in India. These all India district level regressions include state fixed effects to control for some unobserved heterogeneity.

One of the issues with econometric analysis of the effect of colonial indirect rule institutions on post colonial insurgency is the possibility that the British administrators intentionally selected districts for indirect rule based on their terrain, governability, economic value and other criteria, which make such districts intrinsically more prone to rebellion. Because it is not possible to measure and observe all of these factors, this could bias the regression coefficients. I address the issue of selection bias in Section 3 below by using both qualitative case studies that demonstrate historical contingency leading to lack of selection by the British, as well as two instruments for the British choice of indirect rule through princely states. One of the instruments relies on the fact that when the British government had to fight major European wars, it faced budget constraints which affected the decision making of British administrators in India, and increased their tendency to sign treaties of indirect rule with rulers of Indian states on the frontiers of British direct rule areas in India. Since European wars and their causes

were exogenous to local politics in India, the interaction of timing of major European war and frontier districts in India is a plausible instrument for the choice of indirect rule in India by the British.

The second instrument exploits the fact that Lord Canning during his period as governor general in India (1856-62) decided to give adoption *sanads* (treaties) to Indian rulers which reversed the policy of Doctrine of Lapse of the previous governor general Lord Dalhousie, and allowed the Indian princes to adopt a successor to their throne even if they died without male heir. While this policy was intended to create good will among the Indian princes towards the British following the Indian Mutiny of 1857, it was applied by governor general Sir John Lawrence (1864-69), to convert certain *zamindari* estates in the Central Provinces to formal princely state rule. Since the Central Province areas were completely outside the zone of Indian Mutiny events which motivated this all India policy, the reason for switching these estates to formal indirect rule was exogenous to the qualities of these estates, and hence can be used as another instrument for British choice of indirect rule. This second instrument improves on the instrument for indirect rule based on Lord Dalhousie's Doctrine of Lapse policy developed by Iyer (2010) in her study of the effect of colonial indirect rule on economic development in India. My dissertation is the first study of Maoist insurgency in India that makes use of instruments for the colonial choice of indirect rule. IV-2SLS regressions show that princely states have a statistically significant and positive effect on Maoist insurgency, though the other form of indirect rule, *zamindari* land tenure, is not always statistically significant in all models.

I conclude this chapter by explaining the criterion for choosing two Indian states within this broader all India analysis—Andhra Pradesh and Chhattisgarh—for more detailed empirical study in the next two chapters, based on the Lieberman (2005) nested analysis research design strategy outlined in the research design section earlier in Chapter 2. Having finished the all India econometric analysis in this chapter, the next two chapters (Chapters 6 and 7) focus on the two states of Chhattisgarh and Andhra Pradesh respectively, and use both rich qualitative data, as well as more fine-grained sub district level econometric testing to understand better the causal pathway that leads from indirect rule through princely states to Maoist insurgency. There have been more studies of the *zamindari* land tenure system, than of the role of native/ *princely states*

and their possible effect on ideological insurgency, and these chapters provide us with an understanding of this form of indirect rule ignored by previous studies.

2. Quantitative Analysis – All India District Level Testing of Theory

2.1 Hypotheses:

The following hypotheses are proposed based on the theory outlined in the last chapter, and explained briefly above in the introduction section. They are tested on sub national district level data on the Maoist insurgency in India.

Hypotheses:
Colonial institutions theories
Hypothesis 1.a: Areas which had indirect rule through princely states tend to have higher levels of Maoist insurgency in the future.
Hypothesis 1.b: Areas which had indirect rule through zamindari (landlord) type land tenure systems tend to have higher levels of Maoist insurgency in the future.

Opportunity theories
Hypothesis 2.a: Areas with more forest cover tend to have higher levels of Maoist insurgency.
Hypothesis 2.b: Areas with more elevation above sea level (more mountainous) tend to have higher levels of Maoist insurgency.

Grievance theories
Hypothesis 3.a: Areas with more poverty tend to have more Maoist insurgency
Hypothesis 3.b: Areas with more literacy tend to have less Maoist insurgency.
Hypothesis 4: Areas with poorer tribes tend to have more Maoist insurgency.

2.2 Data and Variables:

Unit of analysis: This section conducts a quantitative test of the theory of indirect rule leading to Maoist insurgency outlined above. The unit of analysis is the district, which is the unit of administration within each state / province in India. There are several disadvantages to using the district as the unit of analysis, for example it hides sub district spatial variation in Maoist insurgency, and it is too aggregate a measure and prone to the problem of imputing individual preferences from aggregate data.[1] To overcome these problems, I use sub district datasets (assembly constituency level) for

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[1] The Introductory chapter and chapter 6 on Chhattisgarh discusses these issues in greater detail. Another reason is that there are regional variations in the dynamics of the Maoist insurgency in India, and using the district for an all India analysis faces the possible problem that such regional variations are glossed over, and there is a tendency to over-generalize.

the two states of Chhattisgarh and Andhra Pradesh in the next two chapters. However, in this chapter, the district is used as a unit of econometric testing for two reasons. First, district level socio-economic data is easily available for the whole of India, and by doing all India regressions it is possible to test the extent to which my theory explains geographic variation in the insurgency across all states, thus broadening the geographic scope of the theory.[2] Second, the emerging econometric analyses of the Maoist insurgency in India, like Chandra (2011), Teitelbaum and Verghese (2011), Kulkarni (2011), Vanden Eynde (2011), Gawande, Kapur and Satyanath (2012) use the district as the unit of analysis. Data for both dependent and independent variables is easily available at the district level, and most scholars have chosen this unit for the ease of data collection. I do the same in this chapter to make my study comparable to theirs, to develop my argument at an all India level, and then proceed to use more fine grained data at the sub district level for two of the Naxal affected states in India to overcome the problems with using district data which affect all these studies.

Dependent Variable: As explained in more detail in the following chapter on Chhattisgarh, it is preferable to use some measure of Maoist rebel influence other than violence. This is because of three reasons. First, as Kalyvas (2006) and other scholars have noted, areas with high rebel control could sometimes have low violence, and are distinct concepts, and violence should not be used as a measure of rebel control. Violence may be the most visible form of insurgency, but not the most accurate measure of organizational capacity and recruitment success by rebels. Second, historical institutions like indirect rule could be used to predict the initial phase of rebellion and the core areas in which the rebels were successful in consolidation of their movement. However, it is not possible to use such long term structural factors to predict the spatial expansion of an insurgency in its latter phases, because once the movement has consolidated itself, there are other dynamics within the movement and its environment that influence the expansion of the insurgency. Most of the measures of insurgency violence being used by scholars to do econometric analysis of the Maoist insurgency (Chandra (2011), Teitelbaum and Verghese (2011), Kulkarni (2011), Vanden Eynde

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[2] The next two chapters test my theory focusing on Maoist insurgency in the two Maoist affected states of Chhattisgarh and Andhra Pradesh, using more fine grained data, and local histories of the Maoist movement, and provide a deeper and localized test of my theory of indirect rule leading to Maoist insurgency.

(2011)) are for the period of 2005-2010, and the movement starts expanding geographically after 2004-5, and so it is not correct to use such late measures of violence as a proxy for initial core areas of rebel control. It may still be acceptable to use measures of violence between say 1990 to 2000, when the movement had not expanded much beyond its original bases.[3] Third, insurgency related violence could be related to several contemporary factors like counter insurgency patterns, strategic and tactical decisions within the rebel movement, conflict with other political parties or rebel factions, election related violence, and not just to historical structural factors. For example, while indirect rule and existing leftist networks predict the core areas of Maoist influence in the two neighboring states of Andhra Pradesh and Chhattisgarh, the temporal patterns of violence are very different in these two states, possibly because their province level politician attitudes towards the insurgency and hence patterns of counter insurgency are very different.[4]

The dependent variable is a binary 0-1 measure of Maoist control by the Ministry of Home Affairs (MHA), Government of India. This particular measure was published in 2005, and was available in a circular from the Ministry of Home Affairs (MHA) to all district administrations in India on the issue of Security Related Expenditures for tackling the Maoist problem.[5] It codes 55 districts in India as Maoist controlled, and notes that the number of districts will be increased to 77 for the purpose of SRE fund disbursement. This indicates that the Maoist movement was beginning to expand by the year 2005, following the merger of the People's War Group (PWG) and the Maoist

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[3] Chandra (2011) is collecting data on Naxal violence for these earlier time periods, which would be a very important empirical contribution. Gawande, Kapur and Satyanath (2012) also code for 2001-2008 and capture both the before and after sudden geographic expansion since 2005, and also include vernacular newspaper sources thus capturing more local newspaper based incidents that are missed by English newspaper sources, and is probably the best in terms of media coverage. It may be possible to use the Gawande et al (2012) data for the 2001-2003 period to get a measure of initial core areas of Maoist insurgency in the 1990s.

[4] While the capital city of Hyderabad is quite close in proximity to the site of insurgency for the province of Andhra Pradesh, the capital city of Bhopal of Madhya Pradesh was distant geographically from the site of insurgency in tribal dominated Bastar. This could be one reason why counter insurgency escalated at a much earlier time in Andhra Pradesh than in Madhya Pradesh. After Madhya Pradesh was split in the year 2000 to form the smaller state of Chhattisgarh, the capital city Raipur moved geographically closer to tribal dominated Bastar, the site of insurgency, and this may be one reason why counter insurgency was escalated against the Maoists in Bastar, while it was quite low during the earlier time period when Bastar was part of the larger state of Madhya Pradesh.

[5] 'Revision of guidelines for Re-Imbursement of Security Related Expenditure (S.R.E) to Naxal affected states under S.R.E. Scheme', MHA Memo Number 11-18015/4/03-IS.III, 11 February, 2005. The Security Related Expenditures scheme is a funding scheme used by the Central government to fund state government expenses regarding counter insurgency, like purchase of vehicles, or development programs in Maoist affected areas, and even providing money to ex-Maoists who surrender to the police through a special surrender scheme.

Communist Center (MCC) to form the CPI-Maoist, and these 55 districts probably measure the areas of core Maoist influence in the late 1990s to early 2000s. So it can be used as a measure of Maoist control after the initial phase of consolidation, but before the sudden geographic expansion and diffusion of the movement since 2005. This is important because the rapid diffusion and expansion of the movement since 2005 could be influenced by several factors like tactical decisions within the insurgency movement, presence of Maoist networks in neighboring districts, central or local government counter insurgency efforts etc, and not just by historical structural institutions of indirect rule.[6]

The particular measure of Maoist rebel control that I use is based on the central government's threat perception. It mentions 5 criteria for inclusion of districts under the Security Related Expenditures (SRE) scheme. While one criterion is intensity of Naxal violence, which is what I do not want to measure, the other four criteria are organizational consolidation, the presence of armed *dalams*, the spread of active mass front organizations, and extent of pro-active counter insurgency measures used by the police / administration. While the MHA uses violence/ intensity, it also focuses on other aspects which are more accurate indicators of rebel control, thus making this a reasonably good measure. Also, this is the only measure that does not rely only on violence, and focuses on the earlier period of insurgency. Recent emerging studies of the Maoist insurgency (Kulkarni 2011, Teitelbaum and Verghese 2011, Chandra 2011, Eynde 2011) have measures of Maoist insurgency based purely on violence from the latter period once the insurgency expands post 2004 unification of the Maoist Communist Center (MCC) and the People's War Group (PWG).

Key Independent Variables: The two main independent variables are *princely state*, which is a dummy variable measuring formal indirect rule, and *landlord tenure*, which is a measure of proportion of area in each district under *zamindari* or *malguzari* land tenure system, which is the less formal type of indirect rule. These data are based

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[6] It would obviously be better to obtain measures of Maoist control from the 1990s, when the movement was focused in its initial core areas, and efforts will be made in future field work. In 2005, the insurgency was crushed in Andhra Pradesh, and started expanding to other parts of Andhra Pradesh, as well as into other neighboring states like Orissa, West Bengal, Jharkhand, Karnataka. However, this measure from 2005 is still limited to 55 core districts, so it is not capturing this surge of expansion, and it can be used as a reasonably good measure of initial core areas of Maoist control and consolidation.

on the Iyer (2010) dataset, which includes measures of these variables. In the Iyer (2010) dataset, the measure of *princelystate* is taken from the several volumes and maps in *The Imperial Gazetteers of India*, Volumes 1 -26. The data is cross checked and some corrections of errors in coding are made for the *princely state* variable in the Iyer (2010) dataset. [7]

Landlordtenure for the areas under direct British rule is coded from Baden-Powell (1892), *Land Tenure Systems of British India*, Volumes 1-3. However, Baden Powell (1892) only provides us with descriptions and maps of land tenure within directly ruled British India and not for indirect rule areas. While Banerjee and Iyer (2005) did not have measures of land tenure within princely state areas, Iyer (2010) measures land tenure type in princely states also, using *Imperial Gazetteer* volumes (1909).[8] Several scholars like Herring and Wilkinson have noted that the *de jure* measures of land tenure that are coded in such datasets from official British gazetteers and maps are not accurate measures of how land tenure actually operated *de facto* on the ground.[9] A much more fine grained and accurate measure of *zamindari, ryotwari* and other types of land tenure is required. It is not feasible to accurately measure *de facto* land tenure for all districts in India using other archival sources, as that would be a separate data collection project by itself beyond the scope of this dissertation. Instead, in the following chapters on Chhattisgarh and Andhra Pradesh, more fine grained and accurate measures of land tenure are developed at the sub district level from archival sources for these two states, which is the first such accurate measure of land tenure variable at the sub district level.[10] Similar archival research for other Indian states will be pursued in a future project.

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[7] For example, in the Iyer (2010) dataset, Bastar and Rajnandgaon districts of 1991 Census are coded as *britdum* = 1, when actually they are princely states and *britdum* = 0. Other errors I have noticed for this variable are some districts in the state of Orissa which I have changed.

[8] In email correspondence (dated March 2, 2011), Iyer mentioned that the data for land tenure for native/ princely state areas were derived from the *Imperial Gazetteers of India*.

[9] I thank Ronald Herring for his comments during presentation of this paper at the Annual South Asia Conference, Wisconsin Madison, October 2011. Wilkinson has noted that the method of clubbing *mahalwari* and *ryotwari* land tenure systems as being both non-landlord type of tenure is not accurate, since these are different types of non-landlord tenure and can have different effects.

[10] In the chapter for the state of Andhra Pradesh, I find that the Iyer (2010) dataset mis-measures the land tenure variable in the princely state areas. In the Iyer (2010) dataset, the proportion of non landlord (ryotwari or mahalwari) variable is coded as 0.724 for all the ten districts of present day Andhra Pradesh which were part of the princely state of Hyderabad—Adilabad, Nizamabad, Karimnagar, Medak, Rangareddy, Hyderabad, Mehabubnagar, Nalgonda, Warangal, Khammam. This coding is not correct. Based on data on proportion of the district which is non

Control Variables: I use various district level measures like elevation, male literacy, fraction of Scheduled Caste and Scheduled Tribe, caste fractionalization, public goods like access to electricity, schools, tanks, land Gini etc, which are available in the Iyer (2010) dataset for each district of India. These are measured from various sources like the Census of India 1991, Topalova (2005), and Indian Database Project by Vanneman and Barnes (2000).[11]

All variables are measured by 1991 Census districts, and there are a total of 415 districts in 17 major states of India.[12] The dataset is for each district in India, and is cross sectional in nature, since it is not possible to get time series data for the main historical variables like colonial indirect rule *(princelystate* and *zamindari landlord tenure)*, though it is possible to create time series data for socio economic and political variables. The advantage of using 1991 and not 2001 Census measures of socio-economic and political variables that I use as controls is that the dependent variable of Maoist control is measured around 2003, so the independent variables are measured temporally prior to the dependent variable, which reduces concerns about reverse causality. The disadvantage is that many of these districts split later to form smaller districts. For example, the district of Bastar in 1991 is a part of the larger state of Madhya Pradesh. In the year 2000, Bastar district becomes part of the new state of Chhattisgarh that is carved out of the larger state of Madhya Pradesh. Once it becomes part of this smaller state, Bastar is gradually split into 5 districts by the year 2003, for the purpose of better administration. Since Bastar is a former princely state with very high levels of Maoist insurgency, using 2001 census districts would have increased the

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landlord available from *Royal Commission on Jagirs*, 1947, p. 37, there is a lot of variation between these districts, e.g. Adliabad is 0.877, Nizamabad is 0.694, Karimnagar is 0.797and Medak is 0.594. I also checked the *Imperial Gazetteers, 1909* volumes on the different princely state districts of Hyderabad, which is supposed to be the source of coding for land tenure in districts which were part of Hyderabad princely state in Iyer (2010), and even then there is significant variation in proportion of non landlord tenure in each district, e.g. Adilabad is 0.962, Nizamabad is 0.741, Karimnagar is 0.818, and Medak is 0.573. Clearly, Iyer (2010) has not coded this variable accurately. To create a more accurate and fine grained coding of land tenure systems in the Hyderabad princely state areas of Andhra Pradesh, I consulted several different archival sources, the main one being "Map of H.E.H. the Nizam's Dominions showing Diwani and Non-Diwani Areas", in *Report of the Royal Commission on Jagir Administration and Reforms*, Appendix 1, p. 136.

[11] Other possible to controls to include are forest cover, income inequality, male literacy etc which will be measured and included in the next round of data collection.

[12] The states in the Iyer (2010) dataset are Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal. These states accounted for 96% of India's population in 2001.

statistical significance of the princely state dummy as a predictor of Maoist insurgency, since there would have been more districts which are both indirect rule and Maoist insurgency.

2.3 Model Specification: For econometric analysis of this cross sectional dataset, I use a Linear Probability Model using OLS, and then a Logistic regression model. The Logistic regression model is the correct one to use because the dependent variable is binary, but I present results for both OLS and Logistic regressions for the sake of comparison. Also OLS regressions can be used to compare with the IV-2SLS regressions in Section 4 below.

The OLS regressions are of the form:

$$Y_i = \alpha + \beta\, princelystate_{i\,+}\, \gamma\, landlordtenure_i + \delta\, X_i + \varepsilon_i,$$

where Y_i is the dependent variable of Maoist control/ mobilization for district i, *princelystate$_i$* is the dummy for whether the i th district was earlier part of a princely state (indirect rule) or British India (direct rule), *landlordtenure$_i$* is the continuous measure of what fraction of the district was under landlord type of land tenure (zamindari/malguzari or ryotwari / mahalwari), and X_i stands for other district characteristics controlled for, including altitude, population density, land inequality (gini), access to public goods like primary schools and water tanks, and public health centers, and variables measuring ethnicity like % of Scheduled Castes and Tribes, caste fractionalization in each district in India. These are measures of opportunity for rebellion, as well as possible grievance factors that could lead to Maoist rebellion in India, and are similar to variables usually included in civil war onset / incidence/ location models. ε_i represents the error term.

Similarly, the Logistic regressions are of the form:

$$logit\,(\pi) = \alpha + \beta\, princelystate_{i\,+}\, \gamma\, landlordtenure_i + \delta\, X_i + \varepsilon_i,$$

where *logit* (π) is the logistic function of probability that a district i is under Maoist control, and *princelystate$_i$* and *landlordtenure$_i$* are respective measures of the two forms of indirect rule (as explained above), and X_i stands for other district characteristics described above.

In Table 1A, 1B and 1C below, I present both OLS / Linear Probability Model (Models 1-3) and Logistic regression (Models 4-6) models. Different states in India have

different political cultures, political parties, and ethnic groups, and their own separate histories of colonial and even pre colonial rule. There may be such unobservable characteristics of each individual state or province in India, making districts within the same state similar. To control for these unobservable qualities of individual states or provinces in India, I include State Fixed Effects in Model 2 (LPM) and Model 5 (Logit).[13] I also present results of Random Effects in Model 3 (LPM) and Model 6 (Logit).

2.4 Discussion of Results: In Table 1.A, I have the baseline model which includes only *princely state* (formal indirect rule) dummy and *landlord tenure (zamindari* or *malguzari)* (informal indirect rule). Using both OLS/ LPM (Model 1) and Logit (Model 4), the baseline model shows that *zamindari landlord tenure* system is strongly significant and positive, while *princely state* dummy has a positive but non-significant coefficient. However, on introducing state fixed effects, both OLS (Model 2) and Logit (Model 5) specifications show that the *princely state* dummy and the *zamindari* land tenure variable are both strongly significant and positively correlated with Maoist insurgency. This result shows that once I control for unobserved heterogeneity of different Indian states, indirect rule through *princelystate* has some kind of significant and positive correlation with Maoist insurgency. The results hold for both a Linear Probability Model using OLS, as well as Logistic Regression Model.

In a random effects model, indirect rule through *princely state* is still statistically significant at the 95% confidence level, and has a positive regression coefficient, and indirect rule through *zamindari landlord tenure* has a positive coefficient at the 99% confidence level, for both OLS Model (model 3) and Logistic regression (Model 6). I conduct a Hausman test to check whether the random effects model is significantly different from a fixed effects model. Comparing Models 2 (OLS with fixed effects) and Model 3 (OLS with random effects), the Hausman test provides a p value of 0.2253 which means that it is not possible to reject the null hypothesis that the difference in

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[13] I do not cluster by state, but for the IV-2SLS regressions below, I also use robust cluster by state. The state fixed effects with logit (Model 5) drops some of the states from the analysis, probably because of lack of variation of *landtenure* variable within these states. The fixed effects analysis with logit drops the following states—Gujarat, Harayana, Himachal Pradesh, Karnataka, Kerala, Punjab, Rajasthan, Tamil Nadu. However, random effects model with logit (Model 6) does not drop these states, and also the Linear Probability Model with fixed effects (Model 2) and random effects (Model 3) also does not drop these states, and the results hold for these other models, thus providing robustness to these empirical results.

coefficients between FE and RE models is not systematic. However, in Table 1.B and Table 1.C, which are discussed below, and which include more control variables, the Hausman test comparing Models 2 (OLS with fixed effects) and Model 3 (OLS with random effects) provides a p value of 0.0000 and rejects the null hypothesis that the difference in coefficients between fixed and random effects is not systematic. Including control variables thus indicates that the coefficients of the Fixed Effects model is different, and it is probably more realistic to assume that there is some kind of unobservable quality about each state that could possibly influence propensity for Maoist rebellion. It is better to use the Fixed Effect models to interpret results, even though the Hausman test shows there is no significant difference between FE and RE for the baseline model in Table 1A.[14]

Table 1.b and Table 1.c introduce more controls, but the results are similar to the baseline models in Table 1.a. While the basic OLS (Model 1) and Logit (Model 4) models show only *zamindari* land tenure system to be positively correlated and statistically significant, on introducing Fixed Effects by state, the *princely state* dummy becomes statistically significant and positive for both OLS (Model 2) and Logit (Model 5), and this remains even with Random Effects models for both OLS (Model 2) and Logit (Model 5). In the longer models in Table 1.c that include the full set of controls, % Scheduled Caste and % Scheduled Tribes has a positive and significant coefficient correlation with Maoist insurgency. Many qualitative analyses of Maoist insurgency in India suggest that the Maoists recruit mainly from poor and exploited tribals (adivasis) and lower castes *(dalits)*, so this result is consistent with theoretical expectations. Altitude has a negative and non significant correlation, and does not provide support for an opportunity theory of civil war, since it is expected that districts with higher altitude should have more hilly terrain and hence provides more opportunities for rebels to hide (Fearon and Laitin 2003). Access to primary schools has a positive and statistically significant correlation with Maoist control, which is difficult to explain. Land inequality has a positive but non-significant correlation with Maoist insurgency, and seems to imply that the effect of colonial landlord type (*zamindari or malguzari)* land tenure on post colonial leftist insurgency is visible even after controlling for the obvious grievance

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[14] Hausman test for the logit models results will be reported.

based mechanism of land inequality.[15] There are possibly other mechanisms besides land inequality through which colonial indirect rule sets up structural conditions for leftist insurgency in the future.

Access to water tanks are a crucial public good in areas like Chhattisgarh and Telengana region of Andhra Pradesh where there is the People's War Group (PWG) faction of Maoists active. The measure of this public good has a small but negative coefficient that is statistically significant across all models, and suggests that districts with more access to crucial public goods like water have better health and irrigation potential in these insurgency affected areas, and have lower probability of Maoist insurgency. The interaction of % Scheduled Tribes living in a district with Access to Electricity is statistically significant at the 90% confidence level and negative in Model 2 (OLS with State FE), but not in Model 5 (Logistic with State FE), thus not providing much support for the hypothesis that the interaction of ethnicity with public goods matters in explaining insurgency.[16] Districts with more ethnic riots tend to have less Maoist insurgency, possibly because ethnic riots in India are primarily an urban phenomenon (Varshney 2003, Wilkinson 2004) and insurgency a rural phenomenon, though this correlation is not statistically significant at the 90% confidence level. This could be indicative of a broader trend in which areas which have Maoist groups operating tend to have less of normal crime, because the Maoists monopolize the violence, and do not let other non state violent actors to operate. The overall patterns of the control variables are in the expected direction. Models 2 (OLS with FE) and Models 5 (Logit with FE) are the main models, and even after controlling for all these socio-economic, demographic and political factors, colonial indirect rule measured by *princely state* still has a positive correlation with insurgency significant at the 99% confidence level, and indirect rule measured by *landlord tenure (zamindari/ malguzari)* has a positive correlation with insurgency significant at the 95% confidence level.

The substantive interpretation of these models is as follows. In Table 1.C, Model 2, I present OLS with state Fixed Effects. If a district moves from being under British

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[15] In the IV-2SLS regressions in Section 4 below, land inequality has a positive and statistically significant coefficient.

[16] It should be useful to check whether a similar interaction of Scheduled Castes with Land Inequality (Gini) has a statistically significant correlation with Maoist insurgency.

direct rule to being under indirect rule through a princely state, the probability of Maoist insurgency increases by 16.04 % points, controlling for other variables at their mean values. Similarly, the probability of a district being under Maoist control increases by 11.91% as the percent of the district that is under landlord type tenure system (*zamindari* or *malguzari*) increases by one percent point, controlling for other variables at their mean values. In Table 1.C, Model 5, I present Logistic Regression model with state fixed effects. One way to interpret the regression coefficients of the Logit Fixed Effects model is in terms of odd ratios—the odds of a district being under Maoist control are 29.93 times higher for a district which was under indirect British rule through *princely state* than for a district which was under direct British rule, holding all other variables constant at their mean values. Similarly, as the proportion of landlord tenure in a district increases by 1 percent point, the odds of a district being under Maoist influence increases by 163.48 times, holding all other variables constant.

The results provide support for my theory that different forms of indirect rule set up structural conditions for Maoist insurgency in the future. The effects of these institutions of indirect rule persist over a period of time, and if not reversed by post colonial politicians they become path dependent and create a mix of ethnic grievances, and low state capacity/ bureaucratic penetration, which create ideal breeding grounds for leftist ideological insurgency movements to flourish. Even after including controls for ethnic, political and public good variables, *princelystate* and *zamindari/ malguzari landlord tenure* still have statistically significant regression coefficients, which means these institutions have an additional effect beyond factors like terrain which may have been used to select districts for indirect rule by the British administrators. A certain amount of unobserved heterogeneity is controlled for by using state fixed effects. However there may be other unobserved qualities of these districts that may have prompted the British to select them for indirect rule which are not controlled for, so the regression coefficients in Model 2 and Model 5 in Table 1C cannot be interpreted as measures of causal effect of indirect rule on post colonial Maoist insurgency.

3. *Selection Bias: Dealing with Endogeneity Concerns*

It is possible that the British colonizers intentionally selected those areas for direct rule that were more economically and agriculturally productive, had less

rebellious tribes, and better terrain more suited to governance. This would mean that the areas which were under indirect rule were intrinsically low revenue and poor agricultural productivity, more difficult to govern due to difficult terrain or rebellious populations, and hence more prone to leftist rebellion. This could create a problem of selection bias, when studying the long term effects of such colonizer choices on economic or political outcomes in the colony in the future, because it may be that the particular pre colonial attributes of the colony may be the reason for the particular post colonial outcome, and not the institution of indirect rule. If the pre-colonial qualities of these districts increased their probability of seeing insurgency in the future, then the regression estimates are biased upwards and the OLS coefficients over-estimate the causal effect of indirect rule. [17] In contrast, it may also be possible that the princely states ceded districts to the British which were not as valuable to them, when pressured by the British or conquered by them, and so the British ended up selecting those areas for direct rule that were economically and agriculturally less productive, and more prone to tribal rebellion. If this were the case, then the regression estimates are biased downwards, though this is less probable than the first scenario.

While topography (forest cover and terrain), revenue potential, and pre-colonial history of rebellion may indeed have played a role in the choice of these institutions, once in place the institutions of indirect rule had an additional effect on creating low governance, weak stateness and low development, which persisted into postcolonial times, creating the opportunity structures for leftist insurgency. In the econometric analysis using the all India district level dataset in this chapter, as well as sub district constituency level datasets for the two states of Chhattisgarh and Andhra Pradesh in the next two chapters, I control for some well known and observable determinants of indirect rule choice, like forest cover, altitude, and find that princely state is still a statistically significant predictor of Maoist control.[18] This provides support to my claim about the independent impact of these colonial era institutions on postcolonial insurgency beyond that caused by terrain and conflict-proneness.

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[17] Iyer (2010: 693) in her study of the long term effect of indirect rule on developmental outcomes in India suggests that it is "unlikely that the British randomly annexed areas for direct colonial rule", though Lange (2009: 60-62) in his cross national study of the impact of direct rule on economic development in British colonies concludes there is no clear evidence of such selection effect.

[18] Controlling for pre colonial rebellion, and pre colonial population density produces qualitatively similar results.

But there could be other unobservable qualities of these districts which influenced selection, which are not being controlled for in the regression models. I deal with this in three ways. First, for the all India district level regression analysis presented above, state level fixed effects are used to control for the unobserved qualities of each state, since it is well known that individual states or provinces in India have unique ethnic, political, cultural and historical qualities.[19] Second, I show using some qualitative case comparisons below that selection is not a problem in all cases of indirect rule, and historical contingencies sometimes play a crucial role in choice of indirect rule. Third, I use an instrumental variable strategy to deal with the issue of possible selection bias in choice of indirect rule.

3.1 Case Study Comparison to Show Historical Contingency in Selection into Colonial Indirect Rule

Ramusack comments on annexation into direct rule that "Historical contingencies were partly responsible for which areas were annexed and which remained under princes. The British were nevertheless anxious to control most coastal tracts, the hinterland of their major entrepots, and economically productive areas such as the Gangetic Plain…" (Ramusack, 2004, p. 79-80). Other historians like Robin Jeffrey suggest about British signing treaties with states to being them into indirect rule that there was "an awesome arbitrariness about who got a treaty and who did not." (Jeffrey 1978, p. 6).[20] Jeffrey notes that the Zamorin of Calicut, whose dynasty had been ruling for hundreds of years, was turned into a landlord and the British took over more of a direct rule. In contrast, once Tipu Sultan of Mysore was defeated, his territory was given to the Hindu family of the Wodeyars who had once ruled only a small portion of the state, and the British remained satisfied with indirect rule. According to Jeffrey, "much depended on the value of the country", and notes that the Zamorin's Malabar was rich

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[19] State fixed effects still does not fully control for the possibility of colonizer selection effect, but controls for unique qualities of provinces in India to some extent.

[20] Robin Jeffrey, *People, Princes and Paramount Power,* 1978, p. 6. Jeffrey (1978: 7-8): "Whether a tributary raja or petty land-controller brought off an agreement with the Company depended on the character of the Company's negotiator, the size of the blunderbuss the raja appeared to have, the revenue value of the country, the forces the British had available, and the urgency with which they wished to resolved matters in the area." So a mix of value of territory, personality of the negotiator, or high British officials, and contingent geo-strategic factors seemed to have been important.

pepper country, while much of Mysore was dry and unprosperous.[21] Clearly, in a lot of cases, the British were driven by motivations of profit and acquiring productive and governable lands when they chose to annex a state or district and introduce direct rule, and were driven by motivations of ruling on the cheap through collaboration with princes whose lands which were not as easily governable.

However, as Ramusack's comment above indicates, there were also cases where historical contingency determined the British choice of direct or indirect rule. By locating such cases and the causes of such contingent events, it is possible to take the first step in dealing with the issue of selection bias. In certain cases, the choice of indirect rule was influenced by arbitrary factors, or contingencies, that have nothing to do with the intrinsic quality of the district or province. For example, both Travancore and Mysore princely states were affected by bad governance in the 1830s-40s. Mysore was transferred to direct British rule between 1831 – 1881, and then returned to the king of Mysore. (Jeffrey 1978: 9).[22] In contrast, despite repeated pleas by Christian missionaries and others protesting the poor quality of governance, Lord Dalhousie (governor-general 1848-1856), the famous annexationist, preferred to keep Travancore under indirect rule, to prevent "violation in terms of Travancore's treaty". (Jeffrey, 1978, p. 10). This was in spite of Travancore being richer in terms of crops and pepper trade, and providing more coastal ports than Mysore, which was more land locked and more barren. The main difference was that in Travancore there emerged a western educated Diwan, Madhava Rao, who completely reformed administration and introduced various economic and social reforms in the 1860s, while there was no such personality in Mysore. Whether or not there is a capable political or administrative figure able to satisfy British western rationalistic standards of administration is random to some extent, and not endogenous to the internal qualities of the province.

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[21] Robin Jeffrey, *People, Princes and Paramount Power,* 1978, p. 7.
[22] "Mysore was taken under direct British rule in 1831 (to be restored to an India ruler fifty years later)." (Jeffrey 1978: 9).

3.1.1 Case Study Comparison of Hyderabad and Awadh Provinces, Circa 1798-1856

As discussed in the last section, the choice of direct vs. indirect rule by colonizers can be determined by the qualities of the area they are colonizing, which may cause selection bias in the OLS regression results presented above. However, there may be some cases where historical contingencies influenced the British decision to use indirect rule, and there was no conscious attempt to select unproductive or ungovernable districts for indirect rule. In this section, I will present a detailed case comparison of some historical contingent factors that influenced the variation in British choice regarding annexation between Hyderabad and Awadh provinces. This case comparison will demonstrate that there is no intentional selection into indirect rule of poor or ungovernable areas by the British selection bias for the princely state of Hyderabad, which was one of the largest princely states in colonial India.[23]

The People's War Group (PWG) led Maoist insurgency in the 1980s and 1990s emerged in areas of indirect rule of erstwhile Hyderabad princely state. But the reason the British allowed the state of Hyderabad to continue under indirect rule and did not annex it in 1856, had to do with factors related to external geo-political factors and the personality of the Nizam that influenced the financial relations between the Nizam of Hyderabad and the British officials, and not to do with the intrinsic qualities of the districts within Hyderabad state. In fact, enough evidence exists that the British very much wanted to annex Hyderabad because it was high agricultural productivity and rich in revenue.[24] Yet for reasons related to financial obligations of the Nizam of Hyderabad, and British connections with the ruler, they did not. So it remained under indirect rule, not because the area is unproductive, had bad soil, high tribal rebellion, high forest cover, but because a unique set of circumstances prevented the British administrators from annexing it and setting up institutions of direct rule. Since the motivations of the British colonizers to allow Hyderabad to remain under princely state rule were not related to the qualities of this area that could make it more conducive to rebellion,

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[23] In Chapter 6, I analyze the spatial variation in the Maoist insurgency in the Telangana region of the erstwhile princely state of Hyderabad using a sub district constituency level dataset for the state of Andhra Pradesh.

[24] Fisher (1991: 400-401) notes that in 1848, Governor General Dalhousie threatened the Hyderabad Ruler that unless he reformed his administration, "the Company would displace him from control over it."

therefore the issue of the British intentionally selecting indirect rule in areas that were prone to rebellion, or intrinsically difficult to govern, does not arise in this case.

This becomes clearer when the fate of Hyderabad is compared with that of the Awadh, which was another large province ruled by a Muslim ruler, and was annexed into direct rule by the British in 1856. The extremely similar qualities of Awadh and Hyderabad in the eyes of the British governor general, and their divergent outcomes in terms of indirect and direct rule, make this a compelling comparative analysis. Firstly, both Awadh and Hyderabad were 'successor states' to the Mughal empire, which means their rulers were initially appointed as governors by the Mughal empire, but later transformed themselves into independent kingdoms by declaring sovereignty from the Mughals.[25] Second, both were Muslim rulers who ruled over Hindu subjects, though Awadh was Shia and Hyderabad was Sunni. Third, both were landlocked, and were close enough to British centers of political and military power—while Awadh was close to Calcutta, the capital and center of the Bengal Presidency in the east, Hyderabad was close to Madras, the capital of Madras Presidency in the south. Fourth, both had relatively high tax capacities and were rich in terms of crops and other natural resources, and similar in size and wealth. The Company threatened to annex Hyderabad, as it did Awadh at several points of time. Yet Hyderabad remained under the rule of the Nizam, while Awadh was annexed by the British in 1856.

The East India Company regarded both Awadh and Hyderabad as a source of financial resources, and extracted as much revenues in different forms as possible from both states.[26] Fisher (1991: 389) notes that while for the princely state of Awadh, the East India Company contracted for massive loans from the Ruler at very low interest rates, in contrast, in Hyderabad, the Nizam "borrowed vast sums for his state from private British firms and individuals." The Nizam of Hyderabad developed debts, and

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[25] Ramusack, *The Indian Princes and their States,* p. 13 notes that Indian princely states that survived from 1858 to 1947 may be grouped into three categories—antique states, successor states, and warrior / conquest states. The many small Rajput princes were examples of antique states, while Awadh, Bengal and Hyderabad were successor states to the Mughal emperor and were started by previous governors of the Mughals who claimed independence later. Finally the Marathas, Mysore under Tipu Sultan, and the Kerala state of Travancore created by Martanda Varma in the 18th century were warrior states.

[26] Both states had to give up their own armies and pay for the maintenance of subsidiary troops for the British on their territories. Awadh had to cede half its territory in 1801 to satisfy these subsidiary payments. Hyderabad had to cede the 'Northern Circars' in 1766, and the cotton rich area of Berar in 1853 to the British to pay for these subsidiary forces.

arrears of payment for the Hyderabad Contingent, which was an armed force the British were to maintain for Hyderabad according to the Subsidiary Alliance Treaty of 1798. [27] These financial obligations and debts were particularly to a joint stock company called William Palmer and Company (popularly called 'The Firm'), which had some 5,000 stockholders, mostly Europeans in the Company's or British government's service. Also various British officials had provided loans in a personal capacity to the Nizam.[28] Fisher suggests that "Hyderabad's substantial debt to these individuals in their private capacity undoubtedly gave the Ruler influence over them as Company officials." (Fisher, p. 389)[29] These personal connections and debts reduced the possibility of annexation of Hyderabad by the British, since such action "would kill a goose that laid golden eggs." (Ramusack 2004: 68).[30] In contrast, the Company actually owed some money to the Nawab of Awadh for the loans taken from him, and annexing Awadh would reduce the financial debt owed to that state. As a result of this "contrasting financial relationships which developed between the Company and each state" (Fisher 1991, p. 388), Awadh was annexed in 1856 under the reason of 'mis-governance' by Lord Dalhousie, but in spite of "Dalhousie's expressed wish, the Company did not annex Hyderabad." (Fisher 1991: 399) "The Awadh ruler, by loaning money to the Company, and placing prominent members of his family, court, and administration under the Resident's protection, compromised their loyalty to his dynasty. The Nizam, by allowing his state to owe money to the Resident and prominent officials of the Company personally, compromised them." (Fisher 1991: 400)

It could be argued that Hyderabad was financially weaker than Awadh, and this led to greater financial dependence on the British as compared to Awadh, thus leading to this difference in outcome. This argument would suggest that the British decided to take Awadh which was the financially stronger state for direct rule, while leaving

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[27] Ramusack, p. 27 notes that in 1766 Nizam Ali Khan concluded an initial Treaty with the British, on the basis of equality, which promised tribute from Hyderabad in return for support from Company troops when that was requested. In 1798, Hyderabad signed a treaty of subsidiary alliance, which marked the beginning of unequal status vis-à-vis the British, through which Hyderabad had to agree to disband its own troops, dismiss all French officers, and support a standing subsidiary force to be used at the direction of the Company.

[28] These loans "flew directly in the face of both British laws and the Company' regulations, frequently repeated by the Court of Directors, against any financial transactions between the servants of the Company and Rulers." (Fisher: 389).

[29] Michael Fisher (1991), *Indirect Rule in India*, p. 389.

[30] Barbara Ramusack, *The Indian Princes and Their States*, p. 68.

Hyderabad which was financially not as productive and profitable for indirect rule, and this is evidence of selection of poorer areas for indirect rule by the British. However, this argument is not correct, since both Awadh and Hyderabad were similar in terms of economic and financial capacity. The real reason for the difference in British choice of rule between Hyderabad and Awadh is to be found in the difference in geo-political constraints facing these two otherwise similar states, which in turn influenced the different financial relations between the British and these two states. Awadh was located in North India and did not have many external threats from other Indian rulers. The British in north India already had defeated Bengal and Awadh in the Battle of Buxar 1765. After the defeat of Awadh in 1765, the British chose to sign a treaty of indirect rule with the Nawab of Awadh rather than annex it into direct rule, because they felt the need for a buffer state against the Marathas and Afghans from the south and west respectively. So from a relatively early period of British expansion of political control in India, Awadh entered a relationship of military and political dependence on the British, and the Nawabs of Awadh were more pliable to British demands for finances, and were more tolerant of British interference in the internal politics of the state.

In contrast, Hyderabad was located in South India, and faced other strong Indian rival states like the Marathas and Mysore. The task for the British in south India was more difficult when faced with competition from the French till the 1770s, and also the Marathas and Tipu Sultan of Mysore, who were powerful threats to the ambition of British expansion. This complicated geo political situation meant that the British needed to ally with the Nizam of Hyderabad at different times to counter the French influence or the even stronger threat from Tipu Sultan of Mysore. It was only when Tipu Sultan was defeated in 1799, and the Marathas were finally defeated in 1819, that the British were strong enough in South India to adopt a more aggressive approach towards Hyderabad. Because of these geo political differences between the situation of Awadh and Hyderabad, the Nizam of Hyderabad was able to maintain a more independent political and military trajectory than the Nawab of Awadh for a longer period of time. The Nizam was more resistant to British interference in internal politics of the state, and less willing to provide loans and finances to the British administration.

Fisher describes in detail these different geo political circumstances: "Awadh and Hyderabad provide useful contrasts in indirect rule. Despite their comparable size

and wealth, Hyderabad and Awadh came under indirect rule at different times, when the political situation and the Company's policies had changed. The subsequent history of their relations with the Company also differed significantly. Awadh came earlier into the exclusive influence of the Company and its Ruler from the late eighteenth century perforce depended on military power under the direction of the Resident. Compared to Awadh, Hyderabad maintained longer an independent foreign and military policy, since the presence and then the threat of the French in South India and the Mysore and Maratha Wars restrained the Company. The Nizams furthered their independence from the Resident by consistently pursuing a policy of isolating the Resident. Further, the activities of the Firm compromised the effectiveness of some of the Residents. In part as a result of this policy, the Hyderabad Resident never forms an extensive constituency as did his counterpart in Awadh." (Fisher 1991: 399-400)

Based on this different external geo political circumstance, the Nizams of Hyderabad always tried to maintain more autonomy from British influence, and prohibited their court officials from having much contact with the British Resident. While the Nawab of Awadh tried to create close alliances with the British, and allowed his courtiers and officials to have close links with the British resident, and even loaned money out, the Nizam of Hyderabad completely forbade any interactions between his court officials and the British Resident, thus preventing the Resident from developing a constituency within the inner administrative circle of Hyderabad. This difference in tactics of ruler in dealing with the British led to different financial relations with the British. Fisher states: "A prime distinction between Hyderabad and Awadh centred on the divergent attitudes of the respective Rulers towards links between the Company and notables in their states. In Awadh, the Ruler provided loans to the Company—albeit reluctantly—and nominated courtiers to receive the interest and protection of the Company. In Hyderabad, the Ruler consistently evidenced hostility towards any links between the Resident and his officials. In light of the Ruler's objections, the Governor-General forbade the issuance of any secret guarantees, although he added that the minister was free to purchase Company bonds and other commercial paper openly, should he choose. Therefore, while the Awadh Resident disbursed some Rs 5,000,000 annually in pensions and remittances to local inhabitants in 1821, the Hyderabad Resident paid out only Rs 4,500." (Fisher, p. 393)

It was this same overall policy of independence pursued by the Nizam of Hyderabad that led to the Nizam borrowing money and compromising the British, and thus preventing the East India Company from allowing Lord Dalhousie to annex Hyderabad into direct rule. In contrast, the policy of political dependence led to the Nawabs of Awadh loaning money to the British which only increased the incentive of the Company to annex Awadh into direct rule. The overall reason for this difference had to do with the very different external geo political and strategic circumstances of threats and alliances facing these two large Indian states. It is possible to conclude that the particular geo political situation, which were external to the princely state of Hyderabad and not based on its internal qualities like proneness to tribal rebellion or forest cover or state capacity, were the determinants of the status of indirect rule of Hyderabad. So it was historical contingency based on external geo political circumstances, and different attitudes of the Indian ruler and different financial relations that were determinants of the choice of indirect rule.

3.2 Instruments for Princely State and Land Tenure:

Another way to address the problem of selection of areas by the colonial administrators is an instrument which is correlated with the choice of direct versus indirect rule, but has no direct effect on post colonial outcomes of insurgency, except through its effect through direct/ indirect rule institutions.[31] For the purpose of the all India econometric analysis presented in this chapter, I need instruments for the two main possibly endogenous measures of indirect rule, i.e. *princelystate* dummy and *zamindari* land tenure. I rely on an instrument for *zamindari* land tenure system used previously by Banerjee and Iyer (2005) in their study of the impact of the zamindari system on post colonial economic productivity. For princely state, I use two new

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[31] Within the econometrics based literature on civil wars, there are only a few studies like Miguel, Satyanath and Sargenti (2003) that deal with the issue of endogeneity of economic variables to the process of civil wars by using an instrumental variable strategy. The only econometric analysis of Maoist insurgency in India that uses instrumental variables to deal with the endogeneity of economic variables to civil war process is Gawande, Kapur and Satyanath (2012), which uses change in rainfall to instrument for changes in natural forest resources which in turn is supposed to affect patterns of Maoist recruitment in India. However, one possible issue with this study is that rainfall variation could directly affect counter insurgency as well as Maoist strategy, and so the instrument is directly related to the dependent variable of conflict, and the exclusion restriction is violated. Neither of the econometric studies of the Maoist insurgency in India which focus on the importance of colonial institutions—Teitelbaum and Verghese (2011) & Kulkarni (2011)—are able to deal with the issue of endogeneity and selection issues.

instruments—one based on external geo strategic imperatives like wars in Europe and East India Company policies, and another based on Lord Canning's (1856-62) policy of adoption *sanads* (treaties).

The instrument for zamindari land tenure was used in the paper by Banerjee and Iyer (2005) where they estimate the effects of colonial land tenure systems on post colonial agricultural productivity and development outcomes in India. They use the fact that between 1820-1856, there were certain British policy makers and intellectuals like Munro and Elphinstone who were influenced by ideological trends in Europe, and in their turn influenced the choice of land tenure systems in India based on their personal ideological convictions. According to Banerjee and Iyer (2005), these British policy makers were convinced that the village based *ryotwari land tenure* system, that tried to collect land revenue directly from the *ryots* or peasants, was superior and more equitable than the existing *zamindari* or landlord based tenure system. Under their influence this new individual cultivator based *ryotwari* tenure system, was initially applied to Madras presidency in 1819. Following this, between 1820 and 1856, the older *zamindari* land tenure was no longer imposed, and instead almost all provinces annexed in this period and brought under direct rule had the individual cultivator based *ryotwari* or the village based *mahalwari* tenure system implemented. Since the choice of land tenure in this period is influenced by European intellectual influences on British policy makers, and exogenous to the local characteristics of the Indian provinces/districts, a time period dummy for 1820-1856 is used as an instrument for the choice of land tenure systems by the British in India by Banerjee and Iyer (2005). I use it to instrument for the *zamindari* (Landlord based) land tenure measure of indirect rule in my model of Maoist insurgency.

I also develop two new instruments for the *princelystate* measure of indirect rule in my model. The first instrument exploits the fact that external factors like war in Europe between Britain and other European powers like France and Russia created geo strategic imperatives for annexation and signing treaties with certain Indian rulers for the British policy makers and governor general in India. Such warfare between England and other Great Powers like France and Russia in Europe can be treated as an exogenous determinant of signing treaties with and annexations of Indian states, and hence an instrument for the indirect rule dummy. The logic behind the instrument is

that during the time periods of major wars in Europe that involved Britain like the Napoleonic wars (1792-1815), the resources available to the British Empire were constrained and this influenced British ability to annex and sign treaties in India. During these European wars, there were also real or perceived threats by Britain's European rivals to border/ frontier regions in India, which also influenced British decisions about direct or indirect rule. Given the resource constraints and such threats to Indian frontier states, I expect that periods of European war would lead to British policy makers trying to sign treaties of indirect rule with Indian rulers in frontier areas contiguous to British territories or near the north western borders of India close to Afghanistan. To the extent that timing of European warfare is not connected to local politics or qualities of districts in India, this instrument is exogenous to qualities of districts that would make them more or less prone to postcolonial Maoist insurgency in India.

The second instrument exploits switches from direct to indirect rule of some of the zamindari (landlord) estates in the erstwhile Central Provinces near the borders of current Chhattisgarh, Maharashtra, Orissa and Madhya Pradesh states. The switches were under Lord Canning's (1856-62) policy of providing adoption *sanads* (treaties) to reverse Lord Dalhousie's (1848-56) policy of lapse of state to British rule in case of death of Indian ruler without male heir. The idea behind this all India policy of adoption *sanads* was to assuage the native princes that they could adopt heirs and maintain their kingdoms, to create an atmosphere of goodwill to prevent the recurrence of events like the Indian Mutiny of 1857, and to get the support of the princes in case of European war. There are two reasons why the selection criterion of zamindari estates in the Central Provinces is exogenous to qualities of these zamindaris that could affect their probability of Maoist insurgency in the future. First, while this policy was all India in scope, it was specifically applied by Governor General Sir John Lawrence (1864-69) to some zamindaris in the Central provinces, where no incidents of rebellion during the Indian Mutiny occurred. Most of the rebellion by Indian princes and soldiers had been limited to the North West and East of India, with some southern states like Hyderabad also sensitive to rebellion, but the areas of the Central Provinces where the *zamindari* estates in question were located, were quiescent and the Indian Mutiny of 1857 completely passed it by. The application of this all India policy to a region in India which had no

potential for such mutiny/ rebellion, makes the reason for these switches from direct to indirect rule exogenous to motivations of British to choose those states for adoption sanads that had been involved with the rebellion during the Indian Mutiny. Second, the zamindaris that were converted to princely state status in the Central Provinces were chosen under Canning's criterion of any ruling chief above the rank of *jagirdar*, regardless of size or location, and hence any existing chief who could be considered a legitimate ruler at that time and was found fit to rule in a practical sense were to be provided these *sanads* (treaties). So the criterion used by Lawrence to choose zamindaris in the Central Provinces was unrelated to possible intrinsic qualities of these districts which made it more prone to rebellion in the future, like tribal population, or poor terrain, type of ruler, size or military capacity of zamindar. So the exclusion restriction is not violated, because the reason for transfer for all these zamindaris to princely state status was exogenous to qualities of these districts. These switches to formal indirect rule under Lord Canning's policy of adoption *sanads* of zamindaris in the erstwhile Central Provinces are used as another instrument for the choice of indirect rule through princely states.

These two instruments are explained in greater detail in the following sections.

3.2.1 Description of Instrument Based on Britain's Wars with Great Powers in Europe:

In a study of the impact of indirect rule through princely states on economic development at the all India district level, Iyer (2010: 693) suggests there is high level of selection by the British. To deal with the issue of selection, Iyer (2010) develops an instrument which exploits the fact that random deaths of certain Indian rulers led their princely states to be annexed by Lord Dalhousie (1848-56) using the policy of Doctrine of Lapse. Under this policy, the kingdom of any Indian ruler who died without an heir would lapse into British direct rule. However, this policy was active only from 1848-57, and cannot be used for the entire dataset that includes annexations started since 1757, which makes it a weak instrument with low correlation with princely state when using the full sample. Also, of the 8 states which had random deaths of Indian rulers without male heirs, only 4 were annexed by the British, and the other 4 were either not annexed or returned to the prince. So it is not clear whether the actual selection of annexation

was entirely random, and it is not feasible to use this as an instrument for an all India district level regression analysis, even though the idea behind this instrument is plausible.[32]

Iyer (2010: 699) also suggests that the problem of areas selected for direct rule being systematically different was "likely to be of greater significance for early annexations, since they were mainly annexed by conquest, for which the British had to expend considerable resources." In contrast, in the latter period after 1848, "many of the annexations were not by conquest, and hence selection bias is likely to be smaller than in the full sample." However, this conclusion seems to assume that the motivation for actually fighting a war and conquering a territory was always that the British valued a territory for its revenues or governability or lack of rebellion. There could be other strategic factors beside the quality of a territory that could motivate the British to fight a war and conquer it. In fact, these other strategic motivations could similarly motivate the British to include a territory under indirect rule rather than conquer it. Iyer (2010) fails to analyze these multiple motivations underlying British decisions to annex territories into direct rule or include them through treaties in indirect rule.

In contrast to what Iyer (2010) suggests, in the initial '*ring fence*' phase (1764 to 1813), there may have been less selection into British direct rule based on tax and agricultural revenues and governability of an area. Gaikwad (2012) suggests that in the pre-colonial period between 1500-1757, the British had to compete with the Portuguese and Dutch to set up factories and forts on the coast line of India. During this pre colonial period, before the British became the dominant European power in India, they faced a lot of economic and military competition from the other European powers. The pressure of such geo strategic considerations as threat from other European powers prevented the British from selecting the best quality areas for setting up forts and factories and initial settlements. [33] Extending this argument, in the initial post-1757 phase, soon after

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[32] I thank Steven Wilkinson for pointing this out to me. Iyer (2010) does note that Lord Dalhousie recommended each of these 8 states for annexation, and it was the Company who either did not annex or the next governor general Lord Canning who reversed the decision, so Dalhousie was not selective. But this still cannot discount the possibility that there was selective annexation by the British from the states that could potentially have been annexed because of lapse. After all Lord Canning, the next Governor General, did not reverse Dalhousie's decision in all the cases that lapsed, so the question remains why the British decided to reverse annexation through lapse in some cases and not others.

[33] Nikhar Gaikwad, "East India Companies and Economic Change", April 23, 2012 (Manuscript, Yale university)

the British won the Battle of Plassey (1757) and started expanding their territorial control in Bengal and beyond, there was still competitive pressure on the British from the French and other powerful Indian rulers like the Marathas and Mysore, and there was possibly less selection of districts. In this initial period marked by the policy of *ring fence* (1764-1813), the British East India Company did not want to annex too much and wanted to sign treaties with Indian rulers to create a buffer or ring around the territories it already controlled. Weak capacity of the British in India, East India Company policies, rivals to the British in India, and possibly war in Europe drove this policy. This meant that quality or value of a territory was not the only reason the British were signing treaties with, or annexing certain Indian states, and not others.

Geo-strategic factors, both external and internal to India, played a contingent role in the choice of direct vs. indirect rule. Sometimes, under the influence of this *ring fence* policy, or other geo strategic factors like competition with the French or the Marathas, instead of striking alliances or using indirect rule / treaties, the British would conquer the territory to protect their borders. It would mean you annex a territory for other geo-strategic considerations than quality of territory. These were cases the British did not value for agricultural potential, and yet have to take under direct rule because of random circumstances beyond their control. e.g. the frontier provinces of Sind and Punjab in the 1840s. Sometimes, these geo-strategic motivations could motivate the British to include a territory under indirect rule rather than annex it, even though the British valued the territory for its agricultural potential. e.g. Robert Clive defeating Awadh and then not annexing it in 1765, because he wanted it as a buffer territory between the British province of Bengal and the Maratha threat from the west.

However, it could be argued that a competitive threat from another Indian state is not exogenous, because the reason why another Indian state is threatening this territory is because it is probably valuable and high quality in the first place. Similarly, competition between the English and the French/ Dutch/ Portuguese in India also may not be completely exogenous because these European powers may be competing for territories that were considered intrinsically more valuable in terms of revenue. Similarly, the policy of the *ring fence* and the role of individual governor generals also cannot be considered to be completely exogenous, because even during the phase of those quietist governor generals who followed the Company's *ring fence* policy, there

were some annexations and some treaties signed, so the question arises why were these states selected for direct or indirect rule and not others.

Another idea for an instrument which does not suffer from this criticism is warfare and alliances between Britain and other European Great Powers in the 18th and 19th centuries, which influenced British decisions about signing treaties to bring states under indirect rule in India. These were not cases where the British competed with other European powers like the French or the Portuguese for annexing certain territories within India. Rather these were cases where the conduct of politics and war between the British and other Great Powers in Europe had an effect on the decisions of British governor generals in India about which territory to annex and which to bring into indirect rule through treaty. Since these European powers were not competing for these territories within India, it is possible to avoid the criticism that these territories that were annexed were valuable, or that those territories that were taken into indirect rule were not valuable. Such external events like warfare and alliances in Europe between Britain and other European countries like France and Russia could force the British to sign treaties with, and bring under indirect rule, Indian states they valued, and which were easy to govern and not prone to rebellion.

The specific instrument I use is the geostrategic location of Indian states on frontiers of British direct rule, during the time periods of major wars between Britain and other European Great Powers like France/ Russia in the 18th and 19th century. During the time periods of these wars in Europe, selection of districts/ states for indirect rule by signing treaties were driven by security concerns and not by qualities of these for revenue or governability. These wars in Europe were part of the balance of power politics in Europe during these times, and were exogenous to political events in India, and hence are correlated with certain British decisions to sign treaties and bring territories in India under indirect rule, but not related with the qualities of these areas in India that made them possibly more or less prone to leftist rebellion in the future. There are two possible reasons why the British would be forced to choose indirect rule in geo-strategically important frontier areas in India for reasons exogenous to qualities of areas within India, during these time periods of external war in Europe.

First, during these periods of war in Europe and elsewhere, the British capacity to fight wars of conquest in its colonies was probably constrained, and they would probably

try to sign more treaties with Native states and bring them under indirect rule since it was cheaper to sign treaties than fight a battle. Given external threats or concerns in Europe which were more pressing for the British Crown, there was pressure on military and economic resources available for use in the colonies including India, and so the British would prefer to sign treaties and bring these geo-strategically important states on the frontiers of British direct rule areas into indirect rule as buffer states in India. Increased pressure to fight wars in other theaters, forced them to be conservative and cautious and concerned with their security in India. For example, during the Napoleonic Wars from 1798 to 1815, the British had to devote considerable materials and finances to their naval campaigns to contain Napoleon's territorial ambitions. This should logically mean that less military and financial resources were available to fight wars in India and the British tended to sign more treaties with the Indian rulers, especially those on the frontiers (contiguous territories) of areas of direct British rule.

The resource and budget constraints created by wars in Europe, which were exogenous to the political situation in India, influenced British decisions to annex Indian states or sign treaties with them. In fact, during this initial period of British conquest from 1757 until 1818 in India, the East India Company had the policy of the *ring fence* launched after Robert Clive's decision not to annex Awadh in 1865 and to keep it as a buffer state. Lack of resources due to constant wars in Europe and elsewhere in other colonies like America could be one of the reasons for this policy of creating buffer states as a ring fence. To the extent that the timing of war in Europe was exogenous to politics in India, and the location of these particular states near the frontiers of British rule was random and not related to the possibility of leftist rebellion in the future, the interaction of the timing of these European wars with the frontier districts at the onset of each major European war can be used as an instrument for the British choice of indirect rule through princely states.

There is another reason why the British would try to sign treaties of indirect rule with Indian states at the frontiers of British direct rule. During these time periods of external wars in Europe, the British sometimes perceived external security threats to certain territories within India—for example territories close to provinces under direct British rule, or near the north-western frontier of India facing Afghanistan. So they would try to sign treaties of indirect rule with Indian states contiguous to their direct

rule areas, in order to create buffer zones against such foreign threats from these European powers. During these periods, the chances that the British would want to defend against perceived foreign threats increased, and so those states that were closer to the western land frontier of British India, or contiguous to British direct rule territories, had higher chance of getting treaties (indirect rule).[34] It was the geo strategic importance of these territories in the case of foreign invasion because of their proximity to the frontier, or because of alliances between the Indian rulers of these territories and France/ Russia who were at war with Britain, that influenced the decision making of the British.

Exclusion restriction: Events in Europe were exogenous to the qualities of territories in India, in terms of their governability and revenue potential. Wars between states were partly driven by balance of power politics, and need for resources and prestige, and these had nothing much to do with politics in India. The only possible effect they have on the potential of leftist revolution in India in the future is through the choice of direct or indirect rule of territories in India. However, it could be argued that the need to fight wars and control territory in India, the 'jewel in the crown of the British Empire', affected the decisions and resources available to the British to fight against their European rivals. But European competition was a greater threat to the national sovereignty of England, especially during the time period of the Napoleonic wars, and it was only British naval supremacy that prevented Napoleon from invading Egypt and even Britain. So the first consideration when deciding how much military resources to devote to India and other colonial areas was the defense and security of the home country, and the imperative to fight wars and conquer territories within India came second, and did not really affect British geo strategic calculations.

Relevant time period for coding instrument: The instrument is coded as a dummy variable that is given a value of 1 for those districts in the all India dataset that were in the frontier region contiguous to the outer bounds of British direct ruled areas at the

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[34] Coastal districts or states in India could also be considered to be under greater security threats from European powers by the British. But the major states with which Britain fought wars in the 1757-1857 period and which were a threat to Indian territories were France and Russia. Neither France not Russia had very strong navies, and Britain was stronger than both on sea, and so the main threat Britain possibly could have felt was by land, on its frontier regions.

onset of a major European war involving Britain and other great powers, for the time period of 1765 to 1858.

The British won the Battle of Plassey in 1757 which led to British control over a large amount of territory within India for the first time. This started a time period of British annexation of other Indian states into direct rule. The British continued annexing territories in different ways till 1857, when the Indian Mutiny occurred, following which the British territories in India were taken over from the East India Company by the British Crown, and the policy of annexation was abandoned in 1858. So 1757-1858 is the period of time when the British annexed territories in India, and this is the relevant time frame for analyzing the effect of Great Power wars on British choice of direct vs. indirect rule in India.

Even though the British annexed their first large territory in India in 1757, the period more relevant for the coding of this instrument is 1765 to 1858. The reason for this coding decision is because the logic of the instrument is not valid for the Seven Year War in Europe (1756-63), which coincided with the Third Carnatic War in India (1757-63), leading to annexations of Bengal and Northern Circars, and signing of a treaty of indirect rule with Awadh in 1765.[35] This is because there was an element of British-French competition within India in the Third Carnatic War for good territories since the French were still strong and not yet defeated by the British in India. It was during the Third Carnatic War that the British were able to eliminate the French as serious contenders for power in India. While there was a major European power still competing with the British for territories within India, the effect of European Great Power war cannot be considered fully exogenous to the British choice of direct vs. indirect rule inside India. Hence it is best to analyze the effect of European great power wars on British decision making in the post 1765 period when the British became the sole European colonial power in India. The ending date of 1858 following the Indian Mutiny in 1857 is relevant, since the British Crown stopped annexation from 1858.

List of Great Power Wars: I use the major European wars involving Britain and other Great Powers in this period of 1765-1858. Smaller wars with non Great Power

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[35] The Seven Year War in Europe (1756-63) was the first 'world war' involving competition between Britain and France, and was fought both in different parts of the world, as well as in India where the British and French fought the Third Carnatic War of India (1757-63), leading to annexations of districts in Bengal and the Northern Circars by the British.

countries, or in other colonies of Great Britain are not included. The major European Great Power wars that involved Britain in this 1765 to 1858 time period are the American Revolutionary War (1775–1783) that involved Britain vs. United States, France, Netherlands & Spain, and the Fourth Anglo-Dutch War (1780–1784) that involved Britain vs. Holland/ France. This was followed by the French Revolutionary Wars/ Napoleonic Wars (1792-1815) which were a series of military coalitions and campaigns by several European powers against the French revolutionary regime and Napoleon, and probably stretched British military resources most. [36] Following the defeat of Napoleon, there was a lull in military activity and beginning of a century of the *Pax Britannica* broken however by competition between Russia and Britain in Central Asia (1837-78) called the Great Game, which led to the First Anglo Afghan War (1837-42) that the British badly lost in Afghanistan, and the Crimean War (1853-56).

Coding Procedure and Data Sources: The exact frontier around British direct rule areas moved as the British annexed more territories in 1765-1858 period. I code the frontier territories contiguous to British direct rule areas by looking at maps of British India at different periods of time and identifying the princely states contiguous to British direct rule areas at the onset of major wars. These frontier or contiguous states are then compared with the districts on a 1991 district map of India from the Census Administrative Atlas. These 1991 districts are coded as frontier areas at the onset of a particular major European war involving Britain. These districts from the 1991 Census are cross checked with the 1991 districts included in the Iyer (2010) dataset.

The source used for British India maps are the *Imperial Gazetteer of India (1909)*, Volume 26—Atlas, Maps of 1765, 1805, 1837 and 1856, which provides excellent

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[36] "The UK had 747,670 men under arms between 1792 and 1815. The British Army expanded from 40,000 men in 1793[21] to a peak of 250,000 men in 1813. Over 250,000 personnel served in the Royal Navy. In September 1812, Russia had about 904,000 enlisted men in its land forces, and between 1799 and 1815 a total of 2.1 million men served in the Russian army, with perhaps 400,000 serving from 1792 to 1799. A further 200,000 or so served in the Russian Navy from 1792 to 1815. There are no consistent statistics for other major combatants. Austria's forces peaked at about 576,000 and had little or no naval component. Apart from the UK, Austria proved the most persistent enemy of France, more than a million Austrians served in total. Prussia never had more than 320,000 men under arms at any time. Spain's armies also peaked at around 300,000 men, not including a considerable force of guerrillas. Otherwise only the United States (286,730 total combatants), the Maratha Confederation, the Ottoman Empire, Italy, Naples and the Duchy of Warsaw ever had more than 100,000 men under arms. Even small nations now had armies rivalling the size of the Great Powers' forces of past wars." (http://en.wikipedia.org/wiki/Napoleonic_Wars#War_of_the_Seventh_Coalition_1815)

maps of British conquests by these time periods. [37] This is combined with the data in Iyer (2010) on date of annexation of each Indian state, which is coded from the Imperial Gazetteers of India, Vols. 1-25. Another excellent source of data is the Treaty Map of princely states in British India from Lee Warner, *Native States of India*, p. 52, which provides the outlines of each princely state, and the date of signing treaties, and can be usefully compared with the *Imperial Gazetteer* maps. Finally, the source used for 1991 district map of India is the *Census of India 2011 Administrative Atlas*, p. 117, Map 51.

The instrument is coded as the frontier districts around British direct rule at the onset of a major European war in the 1765-1858 time period. There are three major periods of war when the frontier of British control in India changed significantly between 1765-1858, and so the instrument is coded for the onset of European war at the beginning of each of these three different periods. The first period is from 1775 to 1802, and includes the frontiers at the onset of the American Revolutionary War (1775–1783), and at the onset of the French revolutionary wars (1792-1801).[38] The frontier districts during this period of war are based on the *Imperial Gazetteer Atlas (1909)* map of India in 1765, to which I add the territories ceded by the Nawab of Awadh in 1775. This gives us the frontier districts at the onset of war in 1775, and the onset of war in 1792, because between 1775 and 1792 there are no more annexations, so the frontier districts of 1775 are also the frontier districts in 1792. The second period is from 1804 to 1815, and includes the frontiers at the onset of the Napoleonic Wars (1804-1815).[39] The frontier districts during this period of war are coded for the year 1804, based on the *Imperial Gazetteer Atlas (1909)* map of India of 1805.[40] The third period is from 1837-1858, and starts with the onset of the First Anglo Afghan War (1837-42), and also includes the onset of the Crimean War (1853-56), both of which are part of the longer Great Game between Britain and Russia (1837-78). The frontier districts during this period of war are coded for the year 1837, and are based on the *Imperial Gazetteer Atlas (1909)* map

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[37] These maps are online at http://dsal.uchicago.edu/reference/gaz_atlas_1909/fullscreen.html?object=33, and http://dsal.uchicago.edu/reference/gaz_atlas_1909/fullscreen.html?object=34.

[38] This includes two main wars, the War of the First Coalition (1792-1797) and the War of the Second Coalition (1798-1801), making a continuous period from 1792-1801.

[39] During this period there is the War of the Third Coalition (1804-December 26, 1805), the War of the Fourth Coalition (August 1806- July 9, 1807), the War of the Fifth Coalition (April 1809 – 14 Oct 1809), the War of the Sixth Coalition (1812-1814), and the War of the Seventh Coalition (1815).

[40] Since most conquests are in 1792, 1799, 1800, 1801, 1802 and 1803, and none in 1804, it is possible to use the 1805 map from the *Imperial Gazetteer* map to measure the frontier districts in 1804.

of India of 1837, combined with data from the Iyer (2010) dataset about dates of annexation of different states.[41]

The coding of frontier districts at the onset of war in 1775, 1804 and 1837 give us three measures of the instrument at three important slices of time in British colonial conquest and control in India. These are called *Instru Euro_War Frontiers (1765-1802)*, *Instru Euro_War Frontiers (1804-1815)*, and *Instru Euro_War Frontiers (1837-58)*. The frontier districts for these major periods of war are also combined together to obtain a measure of all districts that were ever frontier regions at the onset of a major European war involving Britain between 1765-1858, which is the main measure of this instrument, and is called *Instru Euro_War Frontiers (1765-1858)*. These instruments are measuring the interaction of the timing of major European great power wars in which Britain was involved in the 1765-1858 time period, and the frontier districts in British India at the onset of these major wars.

3.2.2 Description of Instrument Based on Lord Canning's Adoption Sanads:

I develop a second instrument for British choice of indirect rule through princely states, and use it for the all India regression analysis.[42] This is based on switches of certain zamindari estates under direct British rule in the Central Provinces to formal indirect rule as princely states by the governor general Sir John Lawrence (1864-69), based on Lord Canning's (1856-62) policy of providing adoption *sanads* (treaties) to assuage Indian rulers of their right to adopt male heirs and pacify them after the Indian Mutiny of 1857-59. While the instrument based on European wars relied on the fact that Great Power wars were exogenous to politics in India, this instrument relies on the fact that Lord Canning's policy was all India in scope in response to the Indian Mutiny (1857-59), but was applied by Sir John Lawrence to zamindari estates in the Central Provinces which was completely outside the zone of events related to the Indian Mutiny,

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[41] The map of India in 1857 at the start of the Crimean war is almost the same as in 1837 at the start of the First Anglo Afghan war, except that with annexation of Punjab in 1846-49, the frontier moved to Afghanistan. But Afghanistan is outside our India dataset, so the coding of frontier districts for 1856 is same as 1837.

[42] This is also used as an instrument for *princelystate* in the sub district level econometric analysis of variation in Maoist insurgency for the state of Chhattisgarh in the next chapter. A more detailed description of the motivations of Lord Canning and Sir John Lawrence and other British policy makers regarding this policy of adoption *sanads*, and its application to the Central Provinces, is provided in the chapter on Chhattisgarh state.

thus making the policy motivation being used to switch these Central Province zamindaris to princely state status exogenous to the qualities of these zamindaris.

Following the Indian Mutiny in 1857-59, in which several Indian rulers in the north, west and east of India participated in a general rebellion against the British, there was a drastic change in British policy towards the Indian states. The East India Company was abolished, and the British Crown took charge of its Indian possessions. Also, to recognize the loyalty of many Indian princes towards the British Crown during the rebellion, many policies of appeasement were implemented. One of these policies was the reversal of the controversial Doctrine of Lapse of the previous governor general Lord Dalhousie (1848-1856), under which any Indian ruler who died without a male heir would have to forfeit his state to the British administration. Under the new Governor General Lord Canning (1856-1862), this policy was reversed, and in 1862 adoption *sanads* (treaties) were given to many Indian princes to assure them their right to adopt male heirs.

The motivations of Canning to reverse Dalhousie's policy of doctrine of lapse were several.[43] Canning felt that "Not further extension but strengthening of British rule in India should be 'our first care'", and this could be best achieved by the maintenance of the Native Chiefs and gaining their loyalty, since it was the native states who had acted as 'breakwaters' against the tide of mutiny. Unless the policy of annexing Native States were abandoned, it would "impose on the Government of India the burden of a very big standing army of European troops, intensify the financial crisis produced by the Mutiny, and, by straining the existing military, administrative and economic resources of the Government, impede efforts to develop the vast territory already under direct British rule."[44] The idea behind this all India policy was to assuage the native princes that they could adopt heirs and maintain their kingdoms, and to create an atmosphere of goodwill to prevent the recurrence of events like the Indian Mutiny of 1857.

A related motivation of Canning for reversing the policy of annexation by lapse was fear of a European war, like the recent Crimean War (1853-56), which would try

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[43] For overview of Lord Canning's policies, see H.S. Cunningham, *Earl Canning* (1891): Oxford Clarendon Press, and Michael Maclagan, *'Clemency' Canning*, (1962), London: MacMillan and Company Ltd.

[44] Bhupen Qanungo, "A Study of British Relations with the Native States of India, 1858-62", *The Journal of Asian Studies* (1967), 26 : pp 261.

British strength in India far more than any internal convulsion like the Mutiny. If such a crisis were to arise, it would be useful to have the Indian princes as allies of the British, and the best way to build such a policy of trust would be to grant them the adoption *sanads* (treaties) which the Indian chiefs desired. This fear is expressed in a letter in which Canning writes: "A war in which France and Russia shall be against us, would bring on an internal convulsion of the most perilous kind, unless we set our house in order whilst there is yet time." In the case of such a prolonged European war, the British might have to withdraw some of their military contingents from India, and the "enemies of the British would at once try to tempt the Indian chiefs to come over to their side". [45] The best way to prevent the Indian chiefs from rising in another rebellion against the British was to create a policy that generated mutual trust and goodwill that could be depended upon during such times of European war and crisis. In a minute on this topic, Sir Bartle Frere, one of the senior members of the Governor General's Council, supported the idea of these adoption *sanads* and suggested that this policy would help the British get support of the Indian princes in the case of European war, or a new taxation policy.[46]

In 1865, this policy was applied by the Governor General Sir John Lawrence (1864-69) to several *zamindaris* (landlord estates) in the Central Provinces, which were elevated to the status of formal princely states and were given these adoption *sanads* (treaties). These switches from direct to formal indirect rule of some of the zamindari (landlord) estates in the erstwhile Central Provinces occurred near the borders of current Chhattisgarh, Maharashtra, Orissa and Madhya Pradesh states. The switching of

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[45] Bharati Ray, *Hyderabad and British Paramountcy, 1858-1883*, Delhi (Oxford University Press), p. 32-33.

[46] *Minute by Sir Bartle Frere on the subject of adoption as affecting successions in Native States. Foreign Department Proceedings June 1860 No.261 Part A*. According to Frere: "13. There never was a time when we stood more in need of such support as would be afforded by a body of native princes attached to us by a feeling of confidence as well as of interest, clearly convinced that they have much to lose and nothing gain by our downfall, & well assured that we regarded them as a reliable element in the body politic & not as they have now too much reason to fear…. There are two conditions which may any day bring a severe strain on our Indian Empire, a general measure of fresh taxation , & a European war. We have the former before us in immediate prospect., there is no escape from it -we must avoid the certain destruction of national bankruptcy & it is clear that nothing short of a complete revolution of our fiscal system will avail to save us. It is clearly our duty to make the attempt whatever the hazard, but it is no less clearly our duty to diminish that hazard by all means in our power & I know of none likely to be so widely & permanently & speedily efficacious as the measure proposed [i.e. adoption] in the Gov. General's. dispatch, calculated as I believe to knit to us every section of classes who do no [p.19]

15. The other danger-an European war—is prospective—but at what distance? Twice at least, during the close of the Russian war, it has been so …say the …informed"

these zamindaris in the Central Provinces which were formally under British rule, to formal indirect rule through princely states under Canning's official policy of adoption *sanads* is used as an instrument for indirect vs. direct rule in the current state of Chhattisgarh. There are two reasons why the selection of zamindari estates in the Central Provinces is exogenous to qualities of these zamindaris that could affect their probability of Maoist insurgency in the future.

First, while this policy was all India in scope, it was specifically applied by Governor General Sir John Lawrence (1864-69) to some zamindaris in the Central provinces, where no incidents of rebellion during the Indian Mutiny (1857-59) occurred. Looking at a map of the location of events during the Indian Mutiny of 1857-59, it is clear that these events happened in the north-central, western and eastern parts of India. None occurred in the Central Provinces where these switches from direct to indirect rule under Lawrence occurred.[47] The motivation for the policy was based on qualities of areas outside the Central provinces. The application of this all India policy to a region in India which had no potential for such mutiny/ rebellion, makes the reason for these switches exogenous to motivations of British to choose those states for adoption sanads that had been involved with the rebellion during the Indian Mutiny. While the initial distribution of these adoption *sanads* in 1862 by Lord Canning was done to a large number of existing princely states (around 140-160) which were distributed across parts of India where the Indian Mutiny had occurred, and often were given to states that helped the British to quell rebellious activities, the distribution of adoption *sanads* in 1865-67 by Sir John Lawrence to the zamindari estates in the Central Provinces occurred in an area untouched by the tumultuous events of the Indian Mutiny of 1857-59. This allows me to use the application of this all India policy to another part of the country which had not been at all affected by the events which resulted in this policy, as an instrument for the choice of indirect rule in Central Provinces.

Second, the zamindaris that were converted to princely state status in the Central Provinces by Sir John Lawrence were chosen under Canning's criterion that any ruling chief above the rank of jagirdar, regardless of size or location, and hence any existing

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[47] See Schwartzberg, *A Historical Atlas of South Asia*, p. 62, Plate VII.B.3: 'The Revolt of 1857-59'.

chief who could be considered a legitimate ruler at that time and was found fit to rule in a practical sense were provided these *sanads* (treaties). [48] In a report in 1863 from the Chief Secretary Richard Temple of the Central Provinces to the Governor General, called *Report on the Zamindaris and Other Petty Chieftaincies in the Central Provinces in 1863*, there is detailed information on all the 115 zamindaris in the Central Provinces. Here Canning's policy of giving adoption sanads is discussed, and based on Canning's policy, Temple suggests that many of these *zamindars* of the Central Provinces qualified to be given adoption sanads and converted into princely states. Looking carefully at this document, it seems that Canning's policy of giving the adoption treaty to any chief above the status of *jagirdar* who had been ruling his own territory, regardless of size or location or origin was being followed.[49]

According to Aitchison (1892) there were about 115 small and large zamindaris and petty chieftains of the Gond or Rajput caste scattered over an area which became the Central Provinces during British rule. They were divided into the following groups/districts:

Wainganga Zamindars   34

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[48] According to Lee-Warner, *Native States of India*, p. 185, Canning handed out around 160 such *sanads*, to which Lord Lansdowne added 17 more in 1890. Ramusack, *The Indian Princes and their States*, p. 89 mentions "When Lord Canning, governor-general and the first viceroy from 1856 to 1862, extended *sanads* guaranteeing the right of princes to adopt heirs subject to British confirmation, the need to limit them to ruling princes was widely discussed. Approximately 140 such *sanads* were granted on 11 March 1862. Later another twenty were tendered, mainly in Kathiawar."

[49] Sir Richard Temple, *Report on the Zamindaris and Other Petty Chieftaincies in the Central Provinces in 1863*, p. 19-20:

"70. In those despatches it is laid down (paragraph 23 of the Governor-General's despatch and paragraph 4 of the despatch of the Secretary of State) that Her Majesty's government desires to perpetuate the Government of, and recognize the adoption of a successor according to Hindu Law (if he be a Hindu) or the customs of his race, by every Chief (above the rank of those who, under the designation of Jagirdars, are merely assignees of the State revenues for a limited term) who may govern his own territory, no matter how small it may be, or where it may be situated, or whence his authority over it may in the first instance have been derived. And that in like cases where the Chief may be a Muhammadan, any succession which may be legitimate according to Muhammadan Law should be upheld.

71. It would appear then that both the wording and the tenor of Lord Canning's despatch above quoted, which was approved by Her Majesty's Government, include some of the Chiefships now under report. .... they are above the status of Jagirdars, to whom the paragraph alluded to had reference.

72. It may on the whole be said that, certainly, the position and status of some of the Chiefs have been quite equal to those of Karond and Makrai, to whom the right of adoption has been conceded; that many of the other Chiefs who are now reported upon have formerly held virtually, and would, if the policy recommended in this report be approved, in future hold definitely, a position clearly above that of Jagirdars and people of that description. If this be correct, then such Chiefs would be entitled to the privilege of adopting an heir ...

74. … If the principle were allowed, then, as before remarked, there are some Chiefs whose selection would be clear, some again on the other hand who clearly would not come under selection, and others again whose case might be doubtful."

Chhattisgarh Zamindars	34
Chanda Zamindaris	21
Chhindwara Jagirdars	12
Saugor and Nerbudda Chiefs	3
Sambalpur and Patna Chiefs	11
Total	115. [50]

In the Appendix of the *Report on the Zamindaris and Other Petty Chieftaincies in the Central Provinces in 1863*, which details each zamindari, there is discussion which advises that not all the zamindaris were really legitimate and did not have the willingness to rule, for example two of the larger zamindaris of the Wainganga group—Kampta and Hatta—which were quite large in size and revenue, were considered *talukdars* and not really *zamindars* of old, and so not having legitimate right to rule.[51] Similarly, the Chhindwara group *zamindaris* were considered *jagirdars* who did not have permanent right as landlords, and so following the Canning criterion were not considered legitimate *zamindaris* with the right to rule.[52] The Chanda zamindaris are also not considered of "good status" and many of them too small to be real *zamindars* that can be given princely state status.[53] The Canning criterion of giving adoption *sanads* to those chiefs who were actually and competently ruling seems to have played a role in why the British chose to give an adoption *sanad* to the zamindari of Makrai, but

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[50] C. U. Aitchison, *A Collection of Treaties, Engagements, and Sanads relating to Indian and Neighbouring Countries*. Vol.. VIII. Calcutta (1892). p. 497

[51] *Report on the Zamindaris and Other Petty Chieftaincies in the Central Provinces in 1863*, p. 29-35 shows that these two largest *zamindaris* of the Wainganga group were not chosen because they were not considered true zamindars. According to the *Report*, p. 29, within the Wainganga group the "first seven Zamindars, *viz.*, (1) Kampta, (2) Hatta, (3) Amgaon, (4) Binjhli, (5) Pulkhaira, (6) Purara and (7) Tikheri Malpuri, were originally included in Kampta; and Kampta was not technically a Zamindari until A.D. 1843. It seems indeed to have been rather of the nature of a Talukdari tenure. The tract was known as the Kampta Taluk, and its holder was designated a Patel. … The same remarks apply, for the most part, also to the three next on the list, *viz.*, (8) Kirnapur, (9) Bhudra and (10) Dhasgaon. The next 7, *viz.*, (11) Saletekri, (12) Bhanpupr, (13) Kinhi, (14) Bargaon, (15) Dangorli, (16) Chauria, (17) Nansari are of somewhat more ancient origin. But they are small and unimportant. Some of their holders … may really possess the functions of Chiefs; but, in some of the cases it may be doubted whether the holders would aspire to a higher than ordinary Talukdari tenure …"

[52] *ibid*, p. 4: "Of the Thakurs, or Zamindars of Deogarh above the Ghats, who are now usually called Jagirdars of the Chhindwara District, it is recorded by Mr. Jenkins (page 252) that … they had 'always been in a kind of feudal subjection, first to the Gond Rajas, and subsequently to the Mahrattas ….' "

[53] About the Chanda zamindaris, the *Report* states on p. 45: "The principal Zamindars in this group appear certainly entitled to a good status, as much as those of the more important groups. But, as regards the lesser ones there may be doubt as to whether they really merit such a status. In respect of these latter, it is not of real consequence at present as to whether they have a fixed status; for their extreme remoteness and inaccessibility would prevent any attempt at control from being more than nominal."

not to the other two zamindaris of Timurni and Pitehra of the Saugor and Nerbudda group of zamindars. Even though the zamindar of Timurni was intelligent and educated, he was an absentee zamindar not governing his territory directly, thus casting doubts in the minds of the British administrators about his legitimacy as a *zamindar* and willingness to govern effectively.[54] Other criteria like size or revenue potential of zamindari were not used, because zamindaris of the Sambalpur group that were selected for indirect rule by adoption *sanad* were Raigarh, Sakti, Sarangarh, Patna, Sonpur, Rairakhol and Bamra, but some of these had lower revenue potential than the other zamindaris in the Sambalpur group that were not chosen, namely Phuljhar, Borasambar, Khariar, Bindra-nawagarh.

A strict interpretation of legitimacy following from Canning's document and based on the idea of whether the *zamindar* was actually ruling and governing his subjects and had the right to rule handed down to him from his forefathers (and probably influenced by the English understanding of landlords and bloodline etc), and then a practical consideration that some zamindaris which were legitimately ruling for some time were a bit too small to really do an efficient job of governing, were used by the Chief Secretary Temple in his advice to the Governor General in 1863. So the criterion used by Governor General Lawrence to select certain zamindaris in the Central Provinces was unrelated to intrinsic qualities of these districts which made them more prone to rebellion in the future, like tribal population, or poor terrain, tribal or ethnic identity of ruler, size or military capacity of zamindari. The exclusion restriction is not violated, because the reason for transfer for all these zamindaris to princely state status was exogenous to qualities of these zamindari estates. The policy of adoption *sanads* applied to zamindaris in Central Provinces is used to instrument for formal indirect rule through princely states in the all India analysis.

Coding of Instrument Based on Canning's Policy of Adoption Sanads: According to the map in Schwartzberg, *Historical Atlas of South Asia*, p. 65 the zamindaris in the Central

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[54] *ibid*, p. 57: "The present incumbent, Kishn Rao Madho, is a Subordinate Magsitrate of the 2nd class. He is a man of much intelligence. … The right of adoption was withheld from him in paragraph 3 of letter No. 236-E., dated 11th March 1862, from Secretary to the Government, North Western Provinces, on the ground of his not governing his territory. But the fact would appear to be that although he does not usually reside within the Zamindari, he carries on their administration through an Agent, and thus virtually does govern its affairs."

Provinces that switched from direct to indirect rule in 1865 were the 5 zamindari estates of Khairagarh, Nandgaon, Chhuikhadan, Kawardha, and Kanker that lie within the current state of Chhattisgarh, and were part of the erstwhile Chhattisgarh/ Nagpur zamindaris. [55] However, Aitchison (1892) and De Brett (1909) suggest that 15 zamindaris in the Central Provinces were awarded the adoption *sanad* and became feudatory states with direct tributary relations with the British Crown. The largest zamindari / chief was the Raja of Bastar who was granted the adoption *sanad* in 1862, and belonged to the Nagpur group of zamindars (called Chhattisgarh zamindars later). The small independent zamindari estate called Makrai belonging to the Saugor and Nerbudda group of zamindari chiefs was also given the adoption *sanad* in 1862. In 1865, the adoption *sanads* were given to 11 zamindaris—Sakti, Bamra, Patna, Sonpur and Rairakhol (1866) which were Garhjat zamindaris inside Sambalpur state, and also Kalahandi (Karond), Kanker, Kawardha, Khairagarh, Nandgaon and Chhuikhadan (Kondka) zamindaris which belonged to the group called Nagpur State Zamindars. Finally, Raigarh and Sarangarh Garhjat zamindaris belonging to Sambalpur State were given *sanads* and made princely states in 1867.[56] None of the zamindari estates belonging to the Waingaga, Chhindwara and Chanda groups were selected as feudatory states, and they became "nothing more than large landowners".[57]

The instrument is coded as a dummy variable that is given a value of 1 for those districts in the all India dataset that contain one or more princely states that were created though this policy of adoption sanads between 1862 and 1867 in the erstwhile Central Provinces.

3.2.3 IV-2SLS Regression Results and Discussion:

In this section I replicate Model 2 (OLS regressions with state Fixed Effects) in Table 1.C above, using IV-2SLS strategy. The results of the IV-2SLS regressions are presented in Table 3 below. The two main independent variables—*princelystate* and

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[55] Joseph E. Schwartzberg, *A Historical Atlas of South Asia*, Plate VIII.B.1: 'Territorial and Administrative Changes, 1857-1904', p. 65 shows all the territories that switched from direct to indirect rule and vice versa between 1858-1904 across British India.

[56] See C. U. Aitchison, *A Collection of Treaties, Engagements, and Sanads relating to Indian and Neighbouring Countries*. Vol.. VIII. Calcutta (1892), p. 500-514. Also see De Brett, *Chhattisgarh Feudatory States*, p. 8

[57] C. U. Aitchison, *A Collection of Treaties, Engagements, and Sanads*, Vol.. VIII, p. 514. For a list of these non feudatory zamindaris of the Central Provinces, see Aitchison, Vol. VIII, p. 563-565.

landlordtenure—are potentially endogenous. As discussed above, Banerjee and Iyer (2005) use the time period dummy for 1820-1856 as an instrument for the choice of land tenure systems by the British in India, because the choice of land tenure during this period was based on European intellectual influence on British policy makers and is exogenous to the qualities of the districts where land tenure is being applied. Since such an instrument exists, I use it to instrument for the *zamindari* (Landlord based) land tenure measure of indirect rule in my model of Maoist insurgency. It is called *Instru LandTenure 1820-1850* and is included in all models (Models 2 to 5) in Table 3 below that presents the IV-2SLS results.

I instrument for *princelystate* using the frontier districts contiguous to British direct rule at the onset of major European Wars between 1765-1858, called *Instru Euro_War Frontiers (1765-1858)*, and also use the individual periods of 1765-1802, 1804-1815, and 1837-1858 for versions of the instrument that capture these smaller slices of time, called *Instru Euro Wars (Three Periods)*.[58] The other instrument for *princelystate* is based on Lord Canning's policy of adoption *sanads* applied to the *zamindari* estates in Central Provinces between 1862-1867, and is called *Instru Adoption Sanads*. I include all these instruments for *princelystate* in separate models below in Table 3, and also present a model in which I include both instruments for *princelystate*. In Table 3 below, Model 2 includes *Instru Euro_War Frontiers (1765-1858)*, Model 3 includes *Instru Euro Wars (Three Periods)*, Model 4 includes *Instru Adoption Sanads*, and Model 5 includes *Instru Adoption Sanads* and *Instru Euro_War Frontiers (1765-1858)*.

In Table 3, Model 5, which includes both instruments for *princelystate*, and the instrument for landlord tenure, the first stage regression for the IV strategy is:

$$princelystate_i = \alpha + \beta\ instru\_adoptionsanad_i + \gamma\ instru\_EuropeanWar\_frontiers1765\text{-}1858_i$$
$$+ \delta\ instru\_landtenure1820\text{-}1850_i + \theta\ X_i + \varepsilon_i$$

$$landlordtenure_i = \alpha + \beta\ instru\_adoptionsanad_i + \gamma\ instru\_EuropeanWar\_frontiers1765\text{-}1858_i$$
$$+ \delta\ instru\_landtenure1820\text{-}1850_i + \theta\ X_i + \varepsilon_i\ ,$$

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[58] The three measures of frontiers individually are called *Instru Euro_War Frontiers (1765-1802)*, *Instru Euro_War Frontiers (1804-1815),* and *Instru Euro_War Frontiers (1837-58).*

where *princelystate$_i$* is the dummy for whether the *i* th district was earlier part of a princely state (indirect rule) or British India (direct rule), *landlordtenure$_i$* is the continuous measure of what fraction of the district was under landlord type of land tenure (zamindari/malguzari or ryotwari / mahalwari), and X_i stands for other district characteristics controlled for, including altitude, population density, land inequality (gini), access to public goods like primary schools and water tanks, and public health centers, and variables measuring ethnicity like % of Scheduled Castes and Tribes in each district. These are measures of opportunity for rebellion, as well as possible grievance factors that could lead to Maoist rebellion in India, and are similar to variables usually included in civil war onset / incidence/ location models.

The IV-2SLS results are presented in Table 3 below. But before that, the results of the first stage of the IV-2SLS are presented in Table 2 below, in which I present results of the first stage of Models 2, 4 and 5 from Table 3.[59] The first stage regressions generally show that the instruments are strongly correlated with their respective types of colonial indirect rule—princely state and landlord tenure.[60] In Model 2 in Table 2, the first stage relationship between the *instru_EuropeanWar _frontiers1765-1858* and *princelystate* is strongly positive and statistically significant at the 99% confidence interval level. This implies that states/ districts in India that were ever frontiers of British rule at the onset of a major European Great Power war involving Britain between 1765-1858 tended to have been converted into indirect rule as princely states by the British. Also in Model 2 in Table 2, the first stage relationship between *instru_landtenure1820-1850* and *landlordtenure (zamindari/ malguzari)* is also negative and statistically significant at the 99% confidence level, which implies that most of the districts that were assigned some kind of land tenure by the British during the period of 1820-1850, were given non landlord type (either *ryotwari* or *mahalwari* type) of tenure because of ideological convictions of British policy makers in India.

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[59] I do not present first stage regression results for Model 3 in Table 3, because of space constraints. Model 3 has all three instruments based on the frontiers at the onset of European war in the three time periods of 1765-1802, 1804-1815, and 1837-58, and the first stage results are similar to that of the other three models, though a little more difficult to interpret. Results available from author upon request.

[60] Doing first stage regressions for the shorter models like Models 2 and 3 in Tables 1A and 1B, also produce a statistically significant correlation between the instruments and the relevant colonial institutions of indirect rule.

In Model 4 in Table 2, using *princely state* as the dependent variable, and *instru_adoptionsanad* as the instrument for the choice of direct/ indirect rule through princely states, the first stage relationship between *instru_adoptionsanad* and *princelystate* is strongly positive and statistically significant at the 99% confidence level. This supports the assumption that those districts/ zamindari estates in the Central Provinces that satisfied Canning's criterion for being given adoption *sanads*, were converted to indirect rule by Sir John Lawrence. Also in Model 4, the first stage relationship between *instru_landtenure1820-1850* and *landlordtenure (zamindari/ malguzari)* is also negative and statistically significant at the 99% confidence level, which again supports the idea that during the 1820-1850 period the British policy makers were assigning non landlord type of tenure based on exogenous ideological reasons.

Finally, in Model 5 in Table 2, I include both instruments for *princely state —instru_ EuropeanWar_frontiers1765-1858* and *instru_adoptionsanad*—as well as *instru_landtenure1820-1850*. With *princelystate* as the dependent variable, the first stage relationship between the *instru_EuropeanWar_frontiers1765-1858* and *princelystate* is strongly positive and statistically significant at the 99% confidence interval level. The first stage relationship between *instru_adoptionsanad* and *princelystate* is also strongly positive but weakly statistically significant at the 90% confidence level, which causes some concern about weak first stage relations, though in Model 4, *instru_adoptionsanad* and *princelystate* is strongly positive and statistically significant at the 99% confidence level. Also in Model 5, the first stage relationship between *instru_landtenure1820-1850* and *landlordtenure (zamindari/ malguzari)* is also negative and statistically significant at the 99% confidence level, as expected.

Bound, Jaeger and Baker (1995) show how IV-2SLS estimates may be somewhat biased in the same direction as OLS estimates in finite samples if there is weak correlation in the first stage between the instrument and the endogenous independent variables.[61] Even though first stage correlations seem highly significant and in the direction expected, I do further checks for whether the instruments are weakly

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[61] John Bound, David Jaeger, and Regina Baker, "Problem with Instrumental Variables Estimation When the Correlation Between the Instruments and the Endogenous Explanatory Variable Is Weak", *Journal of the American Statistical Association*, June 1995, Vol. 90, No. 430.

correlated with the endogenous independent variables in the first stage. For Model 2 in Table 2, which includes only *instru_EuropeanWar_frontiers1765-1858* to instrument for *princelystate,* the Angrist-Pischke multivariate F test of excluded instruments for first stage regressions is 43.18 (p value of 0.000) for *princelystate* and 11.50 (p value of 0.0008) for *landlord tenure (p_landlord).* [62] For Model 4 in Table 2, which includes only *instru_adoptionsanad* to instrument for *princelystate,* the Angrist-Pischke multivariate F test of excluded instruments for first stage regressions is 11.01 (p value of 0.0010) for *princelystate* and 12.05 (p value of 0.0006) for *landlord tenure (p_landlord).* For Model 5 in Table 2, which includes both instruments for *princelystate,* the Angrist-Pischke multivariate F test of excluded instruments for first stage regressions is 24.32 (p value 0.0000) for *princelystate,* and 6.46 (p value of 0.0018) for *landlord tenure.* The Angrist-Pischke Multivariate F statistic of the instruments for *princelystate* is larger than 10, which is the usual F statistic value required to suggest that instruments are sufficiently strong. Similarly, the Angrist-Pischke Multivariate F statistic of the instruments for *landlordtenure (p_landlord)* is slightly larger than 10, except for Model 5.

Only in Model 5, is the Angrist-Pischke multivariate F test statistic of the instruments for *landlordtenure (p_landlord)* slightly less than 10 implying that the instruments for *landlord tenure* is slightly weak. However, the probable reason the multivariate F test statistic for the instruments with *landlordtenure (p_landlord)* as dependent variable is less than 10 in Model 5 is because the two instruments specifically for *princelystate—instru_adoptionsanad* and *instru_EuropeanWar_ frontiers1765-1858—*do not correlate with *landlordtenure (p_landlord).* The instrument *instru_landtenure1820-1850* has a strong negative correlation with *landlordtenure (p_landlord),* so this should not be a problem. Given this information, it is possible to

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[62] According to Angrist and Pischke (2009), in a model with multiple endogenous regressors and multiple instruments, the overall equation F test statistic is not as useful. Since my models include more than one instrument, the Angrist Pischke F test is better. I report the Angrist-Pischke multivariate F-test as described in Angrist and Pischke (2009) and as reported by the user-written *xtivreg2* command in Baum, Schaffer, and Stillman (2007b). The conventional joint F test for excluded instruments also provides similar F statistics.

reject the null hypothesis of no correlation between instrument and endogenous regressors at the 95% confidence level, and implies that the instruments are not weak.[63]

The second stage regression for the IV strategy estimates the impact of the two measures of indirect rule—*princelystate* and *landlordtenure*—on Maoist conflict:

$$Y_i = a + b \, princelystate_{i+} c \, landlordtenure_i + d \, X_i + u_i,$$

where Y_i is the dependent variable of Maoist control/ mobilization for district i. The two endogenous independent variables are *princelystate$_i$* and *landlordtenure$_i$,* measured for district i, and X_i stands for the same set of district characteristics controlled for as mentioned for the first stage regressions, and u_i represents the error term. State level fixed effects are included, with the assumption that districts in the same state could have similar unobserved qualities due to similar political culture, parties, ethnicity etc. Standard errors are robust to heteroskedasticity, though the results presented below do not include standard errors robust to clustering by state. It may be better not to cluster by state, since the number of clusters is around 15, and there may not be enough clusters to produce accurate standard errors. [64]

The results of the second stage of the IV-2SLS regressions are presented in Table 3. Model 1 presents the OLS regression results with fixed effects by state, and full set of control variables, but without instruments, and is the same as Model 2 (OLS with State FE) in Table 1C. Models 2 to 5 present the second stage of IV-2SLS with state fixed effects, and all of them include *instru_landtenure1820-1850* as an instrument for *p_landlord*. What differs between these models is that Model 2 includes *instru_EuropeanWar_frontiers1765-1858* as instrument for *princelystate,* Model 3 includes three separate time periods of *instru_EuropeanWar_frontiers* (measuring frontier districts at the onset of European wars in the initial 1765-1802 period, in the middle 1804-1815 period and in the final 1837-1858 period) to allow overidentification tests, Model 4 includes *instru_adoptionsanad* as instrument for *princelystate,* and

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[63] See Stock, Wright and Yogo (2002) for detailed discussion about weak instruments, and see Baum, Schaffer, and Stillman (2007a) for how to check for weak instruments. The results are generated using the *ivreg2* command developed by Baum, Schaffer, and Stillman (2007b).

[64] Since there are only 15 states, the baseline specifications in Table 3 do not report standard errors clustered by state. Estimating identical specifications with clustered standard errors by state generates qualitatively similar results with the Princely State coefficient significant at the 0.10 error level.

Model 5 includes both *instru_EuropeanWar_frontiers1765-1858* and *instru_adoptionsanad* as instruments for *princelystate*.

In Model 2 in Table 3, the instrumental variable estimate yields a point estimate of 0.337 on *princelystate* which is significant at 99% confidence level, and 0.441 on *landlordtenure* which is significant at 95% confidence level. Since I have instrumented for the different measures of indirect rule, it is possible to conclude that there is a causal effect of *princelystate* and *landlordtenure* on the outcome of Maoist rebellion. The size of the IV-2SLS coefficients of *princelystate* and *landlordtenure* in Model 2, are larger than in the plain OLS regressions in Model 1. This could indicate negative selection bias in the choice of native/princely states by the British. The effect of being a princely state on the possibility of Maoist insurgency in the future is quite large—moving a district from direct rule under the British to indirect rule through a princely state increases the probability of the district being under Maoist influence/ control by almost 33.7 percentage points. This is a significant increase in probability of Maoist insurgency. Similarly, as the fraction of a district that was under land lord type tenure (*zamindari* or *malguzari*) increases by 1 percentage point, the probability of the district being under Maoist influence increases by almost 44.1 percent points.

Among the control variables in Model 2, the % of Scheduled Castes and Scheduled Tribes in a district has a positive and statistically significant correlation with Maoist influence. Those districts that have increased access to water tanks as a form of public good tend to have lower probability of Maoist insurgency, since the regression coefficient on this variable is statistically significant at the 99% confidence level and negative. Land inequality as measured by *land gini* has a point estimate of 0.717 and is significant at the 99% confidence level, which provides support for the grievance hypothesis that more land inequality leads to higher probability of Maoist insurgency. There seems to be less support for opportunity based theories of civil war, since terrain measured by *altitude* has a positive but statistically non significant correlation with Maoist insurgency.

The results are quite similar in Model 3, which includes *instru_EuropeanWar_frontiers* for the different time periods of 1765-1802, 1804-1815 and the final 1837-1858 period. The instrumental variable estimate yields a point

estimate of 0.342 on *princelystate* which is significant at 99% confidence level, and 0.847 on *landlordtenure* which is which is significant at 99% confidence level.

In Model 4, the instrumental variable estimate yields a point estimate of 0.826 on *princelystate* which is significant at 95% confidence level, and 0.240 on *landlordtenure* which is not statistically significant. Finally, Model 5 includes both *instru_EuropeanWar_frontiers1765-1858* and *instru_adoptionsanad* as instruments for *princelystate*, and the instrumental variable estimate yields a point estimate of 0.400 on *princelystate* which is significant at 99% confidence level, and 0.223 on *landlordtenure* which is not statistically significant.

It seems that the instrument based on Lord Canning's adoption *sanads* does not produce statistically significant results for *landlord tenure*, the less formal measure of indirect rule. But *princelystate*, which is the more formal measure of British indirect rule, has a positive point estimate with Maoist insurgency in all model specifications, whether using the instrument based on Canning's adoption *sanads*, or the instrument based on European Wars, or both. In Model 2 to 5, the instrumental variable point estimate of *princelystate* is higher than in Model 1 with ordinary OLS, which seems to imply that OLS underestimates the effect of *princelystate* on Maoist control at district level in India. These results include state fixed effect, and include robust standard errors.

In none of these IV-2SLS models does terrain as measured by *altitude* above sea level have a significant coefficient, which seems to imply there is not much support for *opportunity* based theories of civil war. While land inequality measured by *land gini* was not statistically significant in ordinary OLS in Model 1, *land gini* is statistically significant in all of the IV-2SLS models implying that there is more support for *grievance* based theories of civil war. The other consistent result that supports theoretical expectations about Maoist insurgency in India, is that those districts that have a higher percentage of Scheduled Castes and Tribes tend to have a higher probability of Maoist insurgency in the IV-2SLS models, though their level of statistical significant drops as compared to Model 1 OLS. This makes sense, since the Maoists recruit mainly from poor tribals in central India and from poor *dalits* or lower castes in the plains of Bihar. While the interaction of Scheduled Tribes with Access to Electricity

has a negative coefficient and is statistically significant in the OLS regression of Model 1, it is no longer significant in the IV-2SLS models.

Diagnostics of the IV-2SLS regressions indicate that the instruments are valid. In case there are more instruments than endogenous regressors, it is possible to perform a so-called Hansen's *J* Test for *overidentifying* restrictions.[65] This tests whether all instruments are exogenous and satisfy the exclusion restriction, *assuming* that at least one of the instruments is exogenous, which is a reasonable assumption in this case since it is I expect that the instrument for *landlordtenure* used by Banerjee and Iyer (2005) is valid.[66] It is not possible to report this test for Models 2 and 4, since these have exactly the same number of endogenous regressors as instruments. However, it is possible to report this test statistic for Models 3 and 5 in Table 3, since these two models use more instruments than endogenous regressors. The Hansen J-statistic (Sargan test) for Model 3 and Model 5 cannot reject the joint null hypothesis that the instruments are valid instruments, i.e., uncorrelated with the error term, and that the excluded instruments are correctly excluded from the estimated equation. This provides support for my argument that the two instruments for *princely state* are exogenous to my dependent variable.

The Anderson-Rubin (A-R) statistic tests the significance of the endogenous regressors in the structural equation being estimated.[67] The statistic rejects the joint null hypothesis that the coefficients of the endogenous regressors (the two different measures of colonial indirect rule) in the structural equation are jointly equal to zero. The tests are equivalent to estimating the reduced form of the equation (with the full set of instruments as regressors) and testing that the coefficients of the excluded instruments are jointly equal to zero. This statistic is important in assessing the results

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[65] The *ivreg2* helpfile in STATA mentions: "The J statistic is consistent in the presence of heteroskedasticity and (for HAC-consistent estimation) autocorrelation; Sargan's statistic is consistent if the disturbance is homoskedastic and (for AC-consistent estimation) if it is also autocorrelated. With robust, bw and/or cluster, Hansen's J statistic is reported. In the latter case the statistic allows observations to be correlated within groups."

[66] Kurt Schmidheiny, "A Short Guide to Microeconometrics", Spring 2012. Downloaded from the internet.

[67] See Baum, Schaffer, and Stillman (2007), p. 491. The *ivreg2* helpfile in STATA mentions that the null hypothesis tested by the Anderson-Rubin (1949) test is that : "the coefficients of the endogenous regressors in the structural equation are jointly equal to zero, and, in addition, that the overidentifying restrictions are valid. Both tests are robust to the presence of weak instruments. The tests are equivalent to estimating the reduced form of the equation (with the full set of instruments as regressors) and testing that the coefficients of the excluded instruments are jointly equal to zero. In the form reported by ivreg2,the Anderson-Rubin statistic is a Wald test and the Stock-Wright S statistic is a GMM-distance test. Both statistics are distributed as chi-squared with L1 degrees of freedom, where L1=number of excluded instruments."

when instruments are weak. The rejection of the null is perhaps not surprising in this case since frontiers in India at the time of European Wars have strong correlation with indirect rule through princely states, and the instruments are not weak.

4. Ruling Out Alternate Explanations for Spatial Variation in Maoist Insurgency in India:

Having tested my theory of how different types of indirect rule like *zamindari* land tenure and *princely states* set up the structural conditions for Maoist insurgency in India, I briefly engage with some possible alternate explanations / mechanisms for why colonial institutions like indirect rule lead to insurgency.

The first such explanation is by Blanton, Mason and Athow (2001) who analyze ethnic conflicts in Africa and find that British ex-colonies with an indirect form of rule that left the indigenous institutions intact had more ethnic conflict, as compared with French ex-colonies with direct rule and centralized bureaucracy that interfered with the ethnic structures and made it more difficult to carry out collective action. Another mechanism at work was that "the indirect, decentralized rule of the British fostered an unranked system of ethnic stratification, while the legacy of the centralized French style approximated a ranked system." Because unranked systems foster competition and conflict between ethnic groups, the authors suggest that the British colonial legacy is positively related to both the frequency and intensity of ethnic conflict. In contrast, French colonies were left with a centralized bureaucratic power structure that impeded ethnic mobilization and suppressed nonviolent ethnic challenges.

Can this theory be used to explain the spatial variation in the Indian Maoist insurgency case? Unlike in Africa, in India there is not much variation in colonial power, since the British ruled most of India, except a few small areas ruled by the French and Portuguese, which are not part of the Maoist zone. Both the epicenters of the insurgency, one centered around the northern Bihar, Jharkhand, Bengal area and the other around the central-southern Chhattisgarh, Andhra Pradesh and Maharashtra border area, were under official British rule. The northern epicenter of insurgency coincided with the *zamindari* landlord type of land tenure system, which was more of an indirect form of administration within official direct British colonial rule. It seems that Blanton et al's (2001) theory would explain this area, since the *zamindari* intermediary

based British rule was an informal form of indirect rule. However, even then their theory runs into trouble because the Bihar/ Jharkhand area had ranked caste system, and the Maoists recruit mainly from dalits / lower castes. So the northern epicenter of insurgency is a case where indirect rule does not always lead to unranked ethnic structure, and can intensify an already existing ranked ethnic system, and thus runs counter to the mechanisms outlined by the Blanton et al theory.

So Blanton et al's theory is better at explaining the southern zone of Maoist insurgency, rather than the northern one. The intuition offered by Blanton et al (2001) probably operates in the Maoist zone in Andhra Pradesh and Chhattisgarh, where the formal princely state rule led to less integrated tribals and left their indigenous institutions intact, thus making it easier to overcome collective action problems by the rebels in the future. The Blanton (2001) explanation is complementary to my theory of long term colonial historical institutions setting up the political opportunity structures for insurgency in the southern zone of Maoist insurgency in India. It is less effective in explaining the Maoist movement in the northern zone under the Maoist Communist Center (MCC) in the Bihar, Jharkhand, Bengal area where a ranked caste system is in place.

A second alternate explanation is an unpublished paper by Teitelbaum & Verghese (2011), who hypothesize that the areas which had direct British rule tend to have more Maoist insurgency in the future. They posit three mechanisms through which British direct rule led to insurgency—the *zamindari* land tenure system which created economic inequality, the caste system which led to lower castes being deprived, and finally the Indian Civil Service which was an autocratic and unaccountable institution fostering social inequalities. There are both conceptual and empirical problems with this paper. The three main conceptual problems are related to the mechanisms suggested by Teitelbaum and Verghese (2011), and are as follows.

First, while the *zamindari* land tenure system does correlate with Maoist insurgency, it is not only because of economic inequality, but also because of weaker bureaucratization and institutionalization, which persisted into post colonial times. As Kohli (2004) and Lange (2009) explain, the *zamindari* land tenure system is a measure of informal indirect rule within official direct rule, since the British depended on intermediaries to collect land revenue and carry out administration on their behalf, as

compared to the *ryotwari* type of land tenure system, where the British collected land revenue directly from the *ryots* or peasants in the villages and thus required a more penetrative bureaucratic set up. Teitelbaum and Verghese (2011) are wrong to characterize it as direct rule, just because they formally occur in areas the British directly controlled.

Second, it is not clear whether the other two mechanisms related to direct colonial rule suggested by Teitelbaum and Verghese (2011)—the role of the Indian Civil Service and deprivation of lower castes—were actually important in explaining Maoist insurgency. This is because there were many direct rule areas in India which had these two mechanisms, though not the mechanism of zamindari land tenure, and did not have Maoist insurgency. For example, there were many provinces which were under British direct rule, like Madhya Pradesh, Maharashtra, Kerala, Tamil Nadu where there is very little Maoist insurgency. These provinces had the Indian Civil Services and lower caste deprivation, but some of them like Maharashtra, Tamil Nadu and Madhya Pradesh did not always have the zamindari system. So of the three mechanisms related to direct British colonial rule outlined by Teitelbaum and Verghese (2011) the one that correlates highly with Maoist insurgency is the *zamindari* based system, and not the other two. The point to note is that the *zamindari* tenure system is an unofficial and unacknowledged form of indirect rule, and so the only mechanism within the British direct ruled areas which leads to Naxalism is the one in which the British rely on local political elite or landlords to collect revenue and rule the country on their behalf. This indicates that it is indirect rule which leads to insurgency and not direct rule. It shows a conceptual fallacy in Teitelbaum and Verghese (2011) with regards to which mechanisms matter and how to interpret these mechanisms as direct or indirect rule.

A third conceptual problem with the Teitelbaum and Verghese (2011) paper is that there are large tracts of territory in the southern epicenter of northern Andhra Pradesh (Telengana region), southern Orissa, and northern and southern Chhattisgarh where the Maoist insurgency occurs in formerly princely state areas, which are formally under indirect rule by the British. These cannot be disregarded as outliers since they make up a significant chunk of territory in the Maoist 'red corridor'. In fact it could be argued that the People's War Group (PWG) led insurgency in Andhra Pradesh and Chhattisgarh which occurs in princely state areas has been more successful in providing

alternate institutions of governance and creating *base areas* than the Maoist Communist Center (MCC) led insurgency in the *zamindari* rule areas of Bihar and Jharkhand. Ignoring the southern epicenter of insurgency leads to a major weakness in the Teitelbaum and Verghese (2011) paper, since it means their conclusions are not based on an all India understanding of the Maoist insurgency, but rather based on only the northern epicenter of the insurgency in Bihar, Jharkhand, Bengal, and even for this northern epicenter they get the mechanisms wrong.

Besides these conceptual weaknesses in the Teitelbaum and Verghese (2011) paper, there are several weaknesses in their research design. First, they only include British rule dummy and do not have landlord tenure (*zamindari*) in their model specification. Second, they do not include state fixed effects to control for unobserved qualities of Indian states, which possibly introduce bias in their results. Third, they use violence data from the mid 2000s, by which time the insurgency has expanded beyond the initial areas, and so there are factors other than colonial institutions which are playing a role in predicting the new areas of expansion. Colonial institutions may be useful to explain the initial areas of emergence of insurgency, but not the later phases of insurgency, when counter insurgency and Maoist strategy and many other factors start to play a role. Fourth, they do not explain how they plan to deal with the issue of the British selecting districts for indirect rule by qualities of these districts that may cause insurgency in the future.

In my own all India district level econometric analysis, presented in this chapter, I attempt to deal with these empirical design issues. On including state fixed effects, the *princely state* measure of indirect rule becomes statistically significant, thus indicating an error in the Teitelbaum and Verghese (2011) analysis. I also include *zamindari* land tenure in my model, and that is positively correlated and statistically significant, thus indicating that it is this particular mechanisms related to British direct rule which matters in setting up conditions for leftist insurgency in the future. I also include land inequality in my model specification, besides other controls common to civil war models. I use a measure of insurgency control for the time period before the rapid expansion occurred post 2005, thus avoiding the problem of counter insurgency and other factors influencing insurgency diffusion and expansion. Finally, I include both state level fixed effects, as well as two newly developed instruments for the British

colonial choice of indirect rule, to deal with the issue of selection bias, and unobserved qualities of the districts where the Maoist insurgency succeeded.

Besides Teitelbaum and Verghese (2011), a third alternate explanation for spatial variation in Maoist insurgency in India would be that colonial land tenure policy is the main colonial institution that can explain where there is Maoist insurgency in the future. Land tenure systems like the *zamindari* (landlord based) tenure system which are more exploitative tend to produce more land inequality, and inter group (caste) inequality, and hence leftist insurgency. Banerjee and Iyer (2005) are proponents of this argument, and correctly suggest that British colonial era land revenue systems have an impact on current levels of agricultural performance and public good distribution in India. Districts in India which had the zamindari system of land revenue based on the use of landlords as intermediaries have lower rates of economic performance than districts which had non-landlord systems of land revenue (*ryotwari* and *mahalwari*). The authors also suggest that *the areas where the zamindari system existed correlates with the areas where the Maoist mobilization started in the 1970s.* They mention in passing that "Those familiar with post-independence India will recognize, for example, that the areas most associated with Maoist peasant uprisings (known as "Naxalite" movements)—clearly the most extreme form of the politics of class conflict in India—are West Bengal, Bihar, and the Srikakulum district of Andhra Pradesh, all landlord areas." (Banerjee and Iyer, p. 1198)[68] The Banerjee and Iyer (2005) mechanism is correct to a large extent in Bihar/ Bengal and maybe Jharkhand, but does not hold in Chhattisgarh and Andhra Pradesh completely, since the indirect rule areas which have Maoist insurgency in these states do not have only *zamindari* landlord based tenure system. Also, the *zamindari* system is an informal form of indirect rule by the British, and besides land inequality and political inequality, it also causes lower institutionalization, which is not analyzed by Banerjee and Iyer (2005). In Chhattisgarh/ Andhra Pradesh, the indirect rule institution of *princely states* has a stronger effect in constraining future insurgency action. So the idea suggested by Banerjee and Iyer (2005) is correct, but useful to explain only the northern epicenter of the insurgency, not the southern one. It

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[68] Banerjee and Iyer. 2005. "History, Institutions and Economic Performance: The Legacy of Colonial Land Tenure Systems in India". *American Economic Review*. 95, 4. In email correspondence with Abhijit Banerjee, he suggested that "ST presence, forest land plus zamindari/malguzari would explain most of the Naxalite areas."

does not provide us with a theory that explains the puzzle of the all India geographical variation of Maoist or Naxal success.

A fourth alternate explanation would be that areas which have previous organizational networks of leftist mobilization are the areas that tend to have leftist insurgency later. This explanation is based on prior organizational network strength, which is similar to the resource mobilization approach. [69] This is explicitly part of the theoretical framework I develop in chapter 4. However, this cannot be a sufficient explanation for the Maoist insurgency in India, since there are certain areas and provinces of India where leftist networks were strong in the past, but there was no successful emergence of Maoist insurgency in the 1980-90s. Such cases would be the states of Punjab and Kerala. The failure of the Maoists to successfully mobilize in these two cases is best explained by the absence of the mechanisms of low state penetration and tribal alienation released by colonial indirect rule in these two states. Neither is it a strictly necessary condition, because there are certain areas and provinces in India, like Chhattisgarh, where there were no leftist networks in the past, but there has been successful development of Maoist insurgency since the 1990s. Secondly, the emergence of extreme leftist networks in the past are themselves in response to the structural conditions set up by different forms of indirect rule, and this makes it difficult to conceptualize previous organizational networks as a factor independent of the long term structural conditions set up by colonial indirect rule of different types.

By analyzing these existing alternate explanations based on historical structures, it becomes clear that none of these alternate theories can fully explain the entire spatial variation of Maoist or Naxal insurgency across all the districts of India. The only theory that can explain spatial variation in Maoist insurgency in India is one that conceptualizes British indirect rule in both its formal (*princely states*) and informal (*zamindari land tenure*) types, and shows how they release mechanisms that help set up long term political opportunity structures for leftist mobilization in the future. Previous

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[69] For the role of social networks in social movements and protests see the following: Snow, David A., Louis A. Zurcher, and Sheldon Ekland-Olson. 1980. "Social Networks and Social Movements: A Microstructural Approach to Differential Recruitment."*American Sociological Review* 45:787-801. Roger Gould, 1991. "Multiple Networks and Mobilization for the Paris Commune," *American Sociological Review*. McAdam, Doug. 1986. "Recruitment to High-Risk Activism: The Case of Freedom Summer."*American Journal of Sociology* 92:64-90. Fernandez, Roberto M. and Doug McAdam. 1988. "Social Networks and Social Movements: Multiorganizational Fields and Recruitment to Mississippi Freedom Summer." *Sociological Forum* 3 :441-60.

leftist networks are also a part of the explanation, but being in part a result of these earlier colonial structures, can only be thought of as a necessary factor to explain current leftist insurgency.

5. Policy Implications

Are there possible policy implications of my theory that long term patterns of state formation dating from the colonial period create legacies for post colonial conflict in India? The Maoist insurgency has repeatedly been called 'India's number one internal security threat' by Prime Minister Manmohan Singh. What are the possible policy implications of my theory for the Indian government? More generally, for theories like Acemoglu et al (2001), or Mahoney (2010) that emphasize the role of colonial and other historical factors in predicting post colonial outcomes, what are the possible policy implications for the current period? If the long term causal mechanisms that lead to Maoist insurgency in India are irreversible in the post colonial period, then one possible implication could be that nothing much can be done by post colonial governments to change the undesirable outcomes of past historical institutions. There is a path dependence and stickiness of the mechanisms unleashed by these historical institutions that are very difficult to reverse.

Kohli (2004) in his analysis of the effects of colonialism on post colonial industrial development in developing countries like South Korea, Brazil, India and Nigeria faces the issue of policy implications by suggesting that "To stand the old master Karl Marx on his head, far too many scholars and practitioners have been trying to change the developing world; the point is also to understand it. And yet if a problem has been understood well, it ought to have some implications for how to deal with it in the future." (p. 421) In this spirit, there are two possible ways to think of policy implications of my theory. First, if it is true that choices of indirect rule by empires leads to lower development, ethnic grievances and other undesirable outcomes, then countries should avoid using convenient deals with local actors to carry out governance. For example, the US should not try to use alliances with warlords, and ethnic chiefs in Iraq or Afghanistan, since this will again backfire in the future. The Indian central government has often continued the policies of indirect rule developed by the British towards the

ethnic groups in India's north east, but a more direct form of administration would have prevented the many ethnic insurgencies in this region from breaking out.

The second way to draw policy implications is to realize that while the effects of these colonial institutions from the past are persistent and sticky, they are not irreversible if the right combination of political will and social / ethnic demands force the government to try and reverse some of the pernicious effects of indirect colonial rule institutions. This is because the causal logic that leads from past historical institutions of indirect rule to post colonial outcomes is not deterministic. It is possible for certain post colonial provincial governments to reverse the pernicious effects of indirect rule at certain critical junctures, and if these opportunities are not taken, then lock in occurs and the effects of earlier institutions persist. This is apparent in both the Indian Maoist insurgency case, as well as other cases of colonial indirect rule in the British empire. For example, in Chapter 4 above, I explained the exceptional states/ provinces of Kerala and Karnataka within India, which had indirect rule through *princely states* under the British and yet no Maoist insurgency since the 1980s. In these exceptional cases, the princely rulers and their administrators were benevolent and efficient and mimicked the high levels of governance and public good provision by the British. In the case of Kerala, besides these pre existing high quality institutions from the colonial period, lower caste mobilization in the post colonial period led to the emergence of the Communist Party of India-Marxist (CPI-M) as an electoral force in the 1960s, which started land reforms and reversed some of the existing land inequalities and other lower caste grievances that still existed form the post colonial period. This matches with Kohli (2004)'s suggestion that while institutional shocks and changes usually come from large scale events like colonialism or anti-colonial freedom movements, small scale incremental changes through political parties to reverse long term institutional effects is possible in certain cases, where the overall state capacity and institutions is not very low (p. 424-25).[70]

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[70] Kohli (2004), p. 415, while analyzing the effects of colonialism and anti-colonial freedom movements on post colonial industrialization suggests that "Within each type of state, incremental political changes of considerable significance have been introduced by a variety of actors. The role of the nationalists and of militaries has already been noted. There is, in addition, the role of political parties and, even more important, of new classes, especially that of emerging capitalists. In the cases analyzed above, political parties proved to be significant state reformers mainly in the case of India. As the number of other countries turning to democracy grows, the role of parties is also likely to grow. In the case of India above, the Congress Party, the nationalist party, took a leading role in establishing India's fragmented-multiclass state. Worth reiterating is the role of the BJP in India in the recent years –

Other such exceptional cases are suggested by Lange (2009), who theorizes that countries that had direct British colonial rule tend to be better developed than countries that experienced British indirect rule. Following the cross national level econometric analysis which confirms his hypothesis, Lange (2009) includes some case studies. Most interesting is the case of Botswana, since in these cases the policies of post colonial politicians actually reversed colonial legacy of indirect rule. Lange (2009: 19) suggests that these cases show that "the institutional legacies of colonialism are not permanent and rapidly transformed in a few exceptional cases." Botswana was a case of post colonial development despite colonial indirect rule. The British had introduced indirect rule with minimum interference in Botswana, relying on pre existing Tswana chiefs. However, there was a leadership crisis within the chiefdom in 1948, because Seretse Khama the future chief of one of the most important chiefdoms married a white woman while studying in London. The final outcome of this crisis was that Seretse Khama was exiled for some time from Botswana, and the institutions of governance through chiefs weakened. The British decided to quickly and radically expand the levels of administration, and bureaucracy. After independence of Botswana in 1966, this was continued by the Botswana Democratic Party (BDP) under the leadership of Khama after he returned to become the first President of Botswana. Botswana had certain advantages over other African countries in similar circumstances like Sierra Leone, or Nigeria, because it did not have a strong military that could interfere with civilian politics, had lower ethnic heterogeneity as compared to other African countries, and the BDP adopted liberal values and not Marxist ones like in Angola, which allowed the British and US governments to support their governance. Thus Botswana is an ideal case in which a combination of circumstances near the time of decolonization that led to sudden switch from indirect to direct rule, and the emergence of indigenous leaders who formed a liberal political party that carried out reforms and state formation and development, caused a reversal of the effects of pre existing indirect rule through chiefs.

6. Conclusion

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this better organized religious party now in power, with its pro-free enterprise ideology, has shifted Indian state somewhat in a cohesive-capitalist direction."

In this chapter, I tested the theory that different types of British colonial institutions of indirect rule set up the structural conditions conducive to Maoist insurgency in India in the future. The two main types of indirect rule in India are described in detail using historical and qualitative data, and a model specifying the causal pathways from these institutions to insurgency is outlined. Using Indian Ministry of Home Affairs (MHA) data, a measure of Maoist control for the 1990s and early 2000s is developed to proxy for the initial core areas of Maoist emergence of influence. The theory is tested on an all India district level dataset, to demonstrate that if a district was either under princely state rule, or was an erstwhile *zamindari* estate, then the probability of it being under Maoist control was higher.

One of the biggest challenges to causal estimation is the possibility that there are certain unobserved qualities of these districts which make them difficult to govern and prone to unrest that led the British to choose them for indirect rule. This question of selection bias is addressed by using certain comparative cases to demonstrate that the British often were forced to choose certain areas for indirect rule because of random situations out of their control, or because of historical contingencies, and so the British did not intentionally select areas for indirect rule in all cases. Also, two instruments for indirect rule—one based on external European wars, and another on the random application of a policy of Lord Canning (1856-62) to areas in the Central Provinces—is used to do IV-2SLS regressions. The IV-2SLS results indicate that the princely state measure of indirect rule is still statistically significant and positively correlated with Maoist insurgency, though the *zamindari* estate measure of indirect rule in not statistically significant in those model specifications which uses the instrument based on Lord Canning's adoption *sanad* policy. This gives us confidence that the effect of indirect rule is not because of selection of districts by the British, and even after selection by the British, there is some institutional long term effect of these institutions on post colonial insurgency.

Having completed the all India analysis at the district level, I now move towards a more disaggregated analysis of the effect of these British colonial institutions of indirect rule in creating political opportunity structures for Maoist insurgency. Nested within this all India analysis, I now focus on two states in India that had the Maoist insurgency, Chhattisgarh and Andhra Pradesh, to understand in more depth the causal mechanisms

that led from these historical institutions to current insurgency. This also allows me to overcome some of the disadvantages of using district level data, for example the problem of over-aggregation, by exploiting sub district data at the Assembly Constituency level for these two states. Also, most studies of Maoist insurgency in India suggest that it is the *zamindari* land tenure institution that matters in explaining Maoist insurgency, as in the states of Bihar and Jharkhand. However, by choosing the two states of Chhattisgarh and Andhra Pradesh, I show that the more formal type of indirect rule, through the institutions of *princely states*, matters in this southern zone of insurgency. Unlike what previous studies would lead us to believe, it is not always *zamindari* land tenure type of indirect rule institutions that set up structural conditions for insurgency. Chapter 6 deals with the analysis in Chhattisgarh, and Chapter 7 with the neighboring state of Andhra Pradesh where the People's War Group (PWG) led insurgency originated.

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TABLE 1.A: ALL INDIA DISTRICT LEVEL ESTIMATES OF IMPACT OF COLONIAL INSTITUTIONS ON MAOIST REBELLION

Dependent Variable: Maoist Control (Ministry of Home Affairs 2003 measure of Maoist control in each district)

	Models					
	(1) OLS	(2) OLS State FE	(3) OLS State RE	(4) LOGIT	(5) LOGIT State FE	(6) LOGIT State RE
Princely State	0.0421	0.1046	0.0756	0.5776	2.0128	1.60487
	(0.161)	(0.008)***	(0.031)**	(0.170)	(0.005)***	(0.017)**
Landlord Tenure	0.1186	0.1115	0.1204	1.8123	3.0426	3.0391
	(0.000)***	(0.015)**	(0.002)***	(0.001)***	(0.011)**	(0.002)***
Constant	0.0087	-0.0073	-0.0005	-3.777		-5.6884
	(0.699)	(0.797)	(0.987)	(0.000)		(0.000)
N	355	355	355	355	207	355
R sqr	0.0356	0.0333	0.0387			
Pseudo R sqr				0.0776		
Log Likelihood				-88.093	-54.767	-79.185

*** p<0.01, ** p<0.05, * p<0.10. P values in parentheses.

TABLE 1.B: ALL INDIA DISTRICT LEVEL ESTIMATES OF IMPACT OF COLONIAL INSTITUTIONS ON MAOIST REBELLION

Dependent Variable: Maoist Control (Ministry of Home Affairs 2003 measure of Maoist control in each district)

	Models					
	(1) OLS	(2) OLS State FE	(3) OLS State RE	(4) LOGIT	(5) LOGIT State FE	(6) LOGIT State RE
Princely State	0.0203	0.1282	0.0729	0.3018	2.1965	1.9965
	(0.574)	(0.004)***	(0.067)*	(0.540)	(0.026)**	(0.027)**
Landlord Tenure	0.1031	0.1251	0.1238	1.3414	4.8985	3.6657
	(0.012)**	(0.016)**	(0.006)***	(0.023)**	(0.010)**	(0.008)***
Altitude	-0.0001	-0.0001	-0.0001	-0.005	-0.0042	-0.0042
	(0.165)	(0.262)	(0.149)	(0.020)**	(0.219)	(0.201)
Popln Density	-0.00004	-0.0003	-0.0001	-0.0005	-0.0046	-0.0043
	(0.682)	(0.014)**	(0.156)	(0.718)	(0.069)*	(0.087)*
Scheduled Caste%	0.3002	0.5876	0.5569	3.2052	12.6411	11.8834
	(0.223)	(0.048)**	(0.034)**	(0.355)	(0.024)**	(0.023)**
Scheduled Tribe%	0.2481	0.4189	0.3547	1.9074	8.5221	6.2823
	(0.042)**	(0.001)***	(0.003)***	(0.191)	(0.002)***	(0.004)***
Caste Fragmentation	0.1939	-0.3619	-0.0882	3.2169	-26.9753	-8.5720
	(0.527)	(0.309)	(0.784)	(0.561)	(0.013)**	(0.279)
Land Gini	0.0846	0.1827	0.0625	3.2887	-1.8812	-2.3995
	(0.717)	(0.482)	(0.791)	(0.376)	(0.740)	(0.660)
Constant	-0.2373	0.2053	-0.0142	-6.9293		2.0352
	(0.431)	(0.569)	(0.965)	(0.208)		(0.798)
N	311	311	311	311	203	311
R-squared	0.0608	0.0341	0.0493			
Pseudo R-Sqr				0.1310		
Log Likelihood				-79.7521	-39.1452	-65.8433

***** p<0.01, ** p<0.05, * p<0.10. P values in parentheses.**

TABLE 1.C: ALL INDIA DISTRICT LEVEL ESTIMATES OF IMPACT OF COLONIAL INSTITUTIONS ON MAOIST REBELLION

Dependent Variable: Maoist Control (Ministry of Home Affairs 2003 measure of Maoist control in each district)

	Models					
	(1) OLS	(2) OLS State FE	(3) OLS State RE	(4) LOGIT	(5) LOGIT State FE	(6) LOGIT State RE
Princely State	0.0659 (0.084)*	0.1604 (0.000)***	0.0659 (0.083)*	0.947 (0.118)	3.398 (0.009)***	3.2818 (0.008)***
Zamindari Tenure	0.0939 (0.039)**	0.1191 (0.016)**	0.0939 (0.038)**	1.5701 (0.030)**	5.096 (0.019)**	4.272 (0.012)**
Altitude	-0.0004 (0.398)	-0.0001 (0.560)	-0.0001 (0.397)	-0.0046 (0.049)**	-0.003 (0.511)	-0.0038 (0.364)
Popln Density	0.00002 (0.798)	-0.0002 (0.049)**	0.00002 (0.798)	0.0004 (0.835)	-0.0054 (0.230)	-0.0042 (0.303)
Scheduled Caste%	0.1836 (0.451)	0.8317 (0.004)***	0.1836 (0.451)	2.3198 (0.535)	15.237 (0.026)**	15.841 (0.014)**
Scheduled Tribe%	0.1763 (0.296)	0.5261 (0.001)***	0.1763 (0.295)	0.7789 (0.748)	10.209 (0.018)**	8.039 (0.040)**
Caste Fragmentation	0.2418 (0.425)	-0.1439 (0.672)	0.2418 (0.424)	5.6923 (0.442)	-15.642 (0.248)	-6.697 (0.502)
Land Gini	0.2211 (0.344)	0.3742 (0.136)	0.2211 (0.344)	6.3491 (0.188)	8.981 (0.342)	7.335 (0.396)
Primary School	0.00009 (0.011)**	0.0002 (0.000)***	0.00009 (0.010)**	0.0009 (0.066)*	0.0026 (0.064)*	0.0029 (0.008)***
Riots	-0.0001 (0.180)	-0.0001 (0.187)	-0.0001 (0.178)	-0.0015 (0.252)	-0.0028 (0.324)	-0.003 (0.241)
Access to Water Tanks	-0.0001 (0.017)**	-0.0003 (0.000)***	-0.0001 (0.016)**	-0.0021 (0.055)*	-0.0076 (0.020)**	-0.0065 (0.010)**
Public Health Center	0.0014 (0.031)**	0.0009 (0.135)	0.0014 (0.030)**	0.0212 (0.057)*	0.0383 (0.126)	0.0355 (0.110)
Electricity	-0.0001 (0.090)*	-0.0001 (0.155)	-0.0001 (0.089)*	-0.0007 (0.507)	-0.0013 (0.612)	-0.0023 (0.285)
*ST% * Electricity*	-0.0002 (0.542)	-0.0001 (0.058)*	-0.0002 (0.541)	-0.0037 (0.619)	-0.022 (0.141)	-0.0164 (0.239)
Constant	-0.4353 (0.153)	-0.275 (0.439)	-0.435 (0.151)	-12.314 (0.105)		-8.7861 (0.439)
N	309	309	309	309	202	309
R squared	0.1490	0.0990	0.1490			
Pseudo R-square				0.2410		
Log Likelihood				-69.5255	-25.6632	-48.7427

*** p<0.01, ** p<0.05, * p<0.10. P values in parentheses.

Figure 1: Substantive Effects—Predicted Probabilities from All India District Level Logistic Regression Models
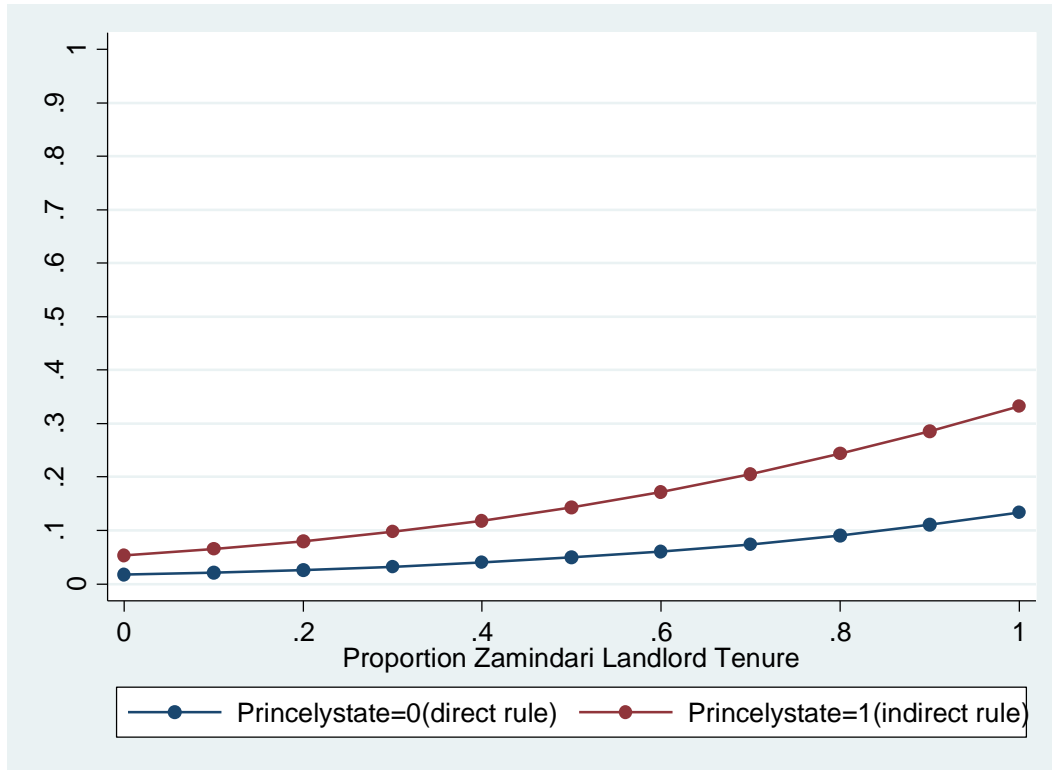
TABLE 2: First Stage of IV-2SLS ESTIMATES OF IMPACT OF COLONIAL INSTITUTIONS ON MAOIST REBELLION

Dependent Variable: Indirect colonial British rule (princely state or landlord tenure)

	Model 2		Model 4		Model 5	
	DV Princely State	DV Landlord Tenure	DV Princely State	DV Landlord Tenure	DV Princely State	DV Landlord Tenure
Altitude	-0.000468***	-0.000000822	-0.000394***	-0.00000114	-0.000457***	-0.00000625
	(0.000)	(0.995)	(0.000)	(0.992)	(0.000)	(0.958)
Popln Density	-0.000203*	-0.0000434	-0.000236*	-0.0000486	-0.000199*	-0.0000455
	(0.077)	(0.665)	(0.075)	(0.627)	(0.083)	(0.651)
Scheduled Caste%	-0.460	0.575*	0.429	0.600*	-0.379	0.534
	(0.247)	(0.077)	(0.266)	(0.052)	(0.344)	(0.102)
Scheduled Tribe%	-0.0612	0.183	0.150	0.205	-0.0697	0.187
	(0.775)	(0.408)	(0.513)	(0.355)	(0.747)	(0.400)
Caste Fragmentation	-0.765**	0.996**	-1.093***	0.979**	-0.781**	1.004**
	(0.048)	(0.046)	(0.005)	(0.050)	(0.038)	(0.043)
Land Gini	-0.203	-0.591**	-0.685**	-0.613**	-0.232	-0.577**
	(0.478)	(0.042)	(0.023)	(0.030)	(0.420)	(0.048)
Primary School	-0.000120**	0.000108**	-0.0000836	0.000111**	-0.000120**	0.000108**
	(0.025)	(0.036)	(0.127)	(0.031)	(0.025)	(0.035)
Ethnic Riots	-0.0000596	-0.0000978	0.00000149	-0.0000969	-0.0000527	-0.000101
	(0.357)	(0.201)	(0.984)	(0.204)	(0.425)	(0.185)
Access to Water Tanks	-0.0000210	0.0000719	-0.0000218	0.0000674	-0.0000135	0.0000681
	(0.681)	(0.212)	(0.700)	(0.220)	(0.795)	(0.220)
Public Health Center	-0.000819	-0.000851	-0.00177	-0.000874	-0.000912	-0.000804
	(0.393)	(0.251)	(0.127)	(0.244)	(0.357)	(0.276)
Electricity	0.000312***	-0.0000186	0.000322***	-0.0000210	0.000318***	-0.0000213
	(0.000)	(0.749)	(0.000)	(0.718)	(0.000)	(0.712)
ST% * Electricity	-0.000317	-0.000254	-0.000488	-0.000250	-0.000347	-0.000239
	(0.470)	(0.391)	(0.390)	(0.377)	(0.451)	(0.402)
Instru LandTenure 1820-1850	-0.102	-0.204***	-0.126	-0.192***	-0.125*	-0.192***
	(0.183)	(0.000)	(0.120)	(0.001)	(0.092)	(0.001)
Instru Euro_War Frontiers (1765-1858)	0.353***	0.0202			0.338***	0.0275
	(0.000)	(0.667)			(0.000)	(0.562)
Instru Adoption Sanad			0.553***	-0.141	0.317*	-0.160
			(0.003)	(0.456)	(0.088)	(0.415)
Observations	309	309	309	309	309	309
Adjusted R^2	0.221	0.007	0.067	0.009	0.228	0.007
Weak Instrument Diagnosis:						
Angrist Pischke F statistic	43.18	11.50	11.01	12.05	24.32	6.46
Angrist Pischke p value	(0.000)	(0.0008)	(0.001)	(0.0006)	(0.0000)	(0.0018)
Kleibergen-Paap Wald statistic	5.00		3.07		3.95	

Note: p-values in parentheses.
All models include State Fixed Effects and Robust Standard Errors.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

TABLE 3: IV-2SLS ESTIMATES OF IMPACT OF COLONIAL INSTITUTIONS ON MAOIST REBELLION

Dependent Variable: Maoist Control (MHA measures)

	Model 1 - OLS	Model 2 - IV-2SLS Instru EuroWars (1765-1858)	Model 3 - IV-2SLS Instru Euro Wars (Three Periods)	Model 4 - IV-2SLS Instru Adoption Sanads	Model 5 - IV-2SLS Instru Adoption Sanads & EuroWars
Princely State	0.160***	0.337***	0.342***	0.826**	0.400***
	(0.000)	(0.002)	(0.001)	(0.032)	(0.000)
Landlord Tenure (*Zamindari/ Malguzari*)	0.119**	0.441**	0.847***	0.240	0.223
	(0.016)	(0.044)	(0.003)	(0.543)	(0.430)
Altitude	-0.0000554	0.0000302	0.0000462	0.000231	0.0000495
	(0.560)	(0.695)	(0.653)	(0.201)	(0.502)
Popln Density	-0.000205**	-0.000151	-0.000135	-0.0000393	-0.000143
	(0.049)	(0.100)	(0.234)	(0.789)	(0.107)
Scheduled Caste%	0.832***	0.628*	0.433	0.584	0.714**
	(0.004)	(0.073)	(0.309)	(0.197)	(0.042)
Scheduled Tribe%	0.526***	0.439**	0.367*	0.390*	0.466***
	(0.001)	(0.012)	(0.080)	(0.096)	(0.010)
Caste Fragmentation	-0.144	-0.263	-0.650	0.466	0.0163
	(0.672)	(0.509)	(0.226)	(0.516)	(0.968)
Land Gini	0.374	0.717***	0.999***	0.920**	0.612**
	(0.136)	(0.009)	(0.006)	(0.021)	(0.027)
Primary School	0.000163***	0.000143***	0.0000984	0.000205**	0.000172***
	(0.000)	(0.009)	(0.166)	(0.014)	(0.005)
Ethnic Riots	-0.0000996	-0.0000790	-0.0000520	-0.0000948	-0.0000938
	(0.187)	(0.290)	(0.576)	(0.295)	(0.192)
Access to Water Tanks	-0.000312***	-0.000332***	-0.000364***	-0.000300***	-0.000312***
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
Public Health Center	0.000996	0.00157**	0.00194**	0.00221**	0.00149**
	(0.135)	(0.024)	(0.033)	(0.026)	(0.027)
Electricity	-0.0000914	-0.000128*	-0.000110	-0.000285*	-0.000158**
	(0.155)	(0.058)	(0.140)	(0.056)	(0.026)
ST% * Electricity	-0.000586*	-0.000414	-0.000296	-0.000249	-0.000447
	(0.058)	(0.117)	(0.342)	(0.595)	(0.115)
Constant	-0.275				
	(0.439)				
N	309	309	309	309	309
Adjusted R^2	0.190	0.034	-0.464	-0.509	0.093

Endogeneity & Overidentification Test Diagnosis:

No. of Instruments	0	2	4	2	3
Kleibergen-Paap Wald		5.004	3.916	3.066	3.954
Hansen's J statistic		†	3.121	†	1.507
Hansen's J (p value)		†	(0.2101)	†	(0.2196)
Anderson-Rubin		10.97	7.91	9.53	8.47
Anderson-Rubin (p-val)		(0.0000)	(0.0000)	(0.0001)	(0.0000)

Note: *p*-values in parentheses. All models include State Fixed Effects and Robust Standard Errors.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

†Hansen J Statistic (overidentification test of all instruments) is 0.000, since equation is exactly identified because the number of endogenous regressors equals the number of instruments.